

LIGHTING EQUIPMENT APPENDIX

The following pages contain cutsheets of luminaires, lamps, ballasts, and control devices that pertain to this project. For electrical equipment information, consult the Electrical Equipment Appendix .


M60 Recessed Linear Fluorescent Flanged Extrusion - STAGGERED LAMPS



Project: _____ Type: _____ Qty: _____

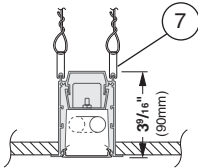
Fixture Series	Lamp Type	Shielding	Mounting	Nominal Length	Finish	Voltage

Options (refer to separate data sheets for ordering codes and details)

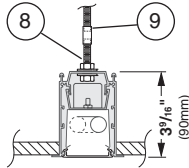
Fixture Series	Lamp Type	Shielding	Mounting	Nominal Length	Finish	Voltage	Options
M6R1S M60 Recessed Continuous Flange (Flanged Extrusion/Flanged Endcaps) Staggered Lamps M6R2S M60 Recessed Flush End (Flanged Extrusion/Flangeless Endcaps) Staggered Lamps	1T5 F28T5 1T5HO F54T5HO 	OD Extra Diffuse Lens SD Satine Lens	SH Suspension Clips TS 1" Studs (factory installed) RC Rotating Crossbars PM Perimeter Mount	008 8 foot 012 12 foot For actual lengths see following page. For other lengths, configurations indicate nominal length rounded to the next highest foot. Factory will supply layout drawings. Individual fixtures cannot be field joined.	WH White BK Black SV Silver SP Specify RAL#	120 277 347	TB Lengths to Fit 2' Grid T-Bar Ceiling System (M6R1S only) (qty)EM Stand-by Battery Pack ¹ (prefix quantity, i.e. - 5EM) FS Single Fusing DM Dimming ¹ (specify system) DMA Digital Addressable Dimming ¹ FW Flex Whip (standard) FW1 Flex Whip (dimming) Track Eutrac Standard ² DL Suitable for Damp Locations Downlights (See MR11 spec sheet, pp.98)
	¹ Must be low profile ballasts (1 ³ / ₈ " W x 1 ³ / ₁₆ " H); consult factory for details. ² Consult factory for details.						

Mounting Diagrams

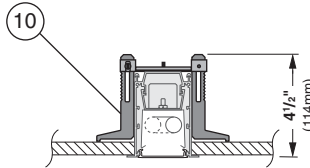
Suspension Clips (SH)



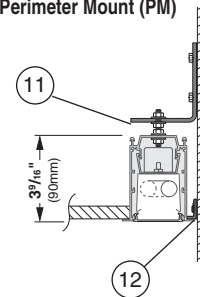
Pre-installed Rod (TS)



Rotating Crossbars (RC)



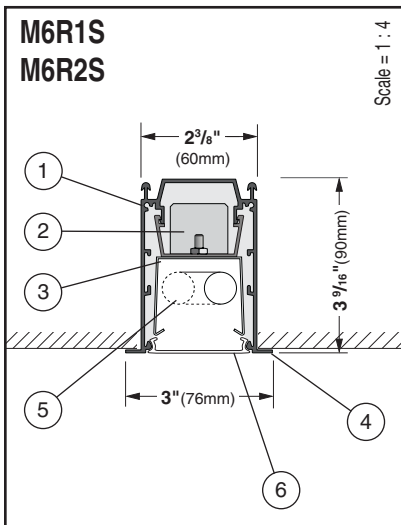
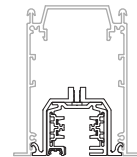
Perimeter Mount (PM)



Scale = 1 : 8

Track

Track insert including track available for all configurations, consult factory for details.



M6R1S
M6R2S

Scale = 1 : 4

1. Housing - Continuous, 6063-T5 extruded aluminum profile up to 16 feet long.

2. Ballast - Electronic, high power factor, class "P", type "A" sound rating. Specify 120v, 277v, or 347v. Ballast is factory pre-wired with leads to one end of fixture. Consult factory for ballast options.

3. Gear Tray - Die formed gear tray with integral factory preset sliding covers to fill extrusion with light, with a matt white finish for even illumination. Geartray installs as complete electrical unit and is held in place with knurled dress nuts. It is fully accessible from below ceiling.

4. Flange - 5/16" (8mm) wide flange is part of the main extruded body. Specify flush (M6R2) or flanged end plates (M6R1).

5. Lamps - As noted (by others). Other lamp lengths or wattages available, consult factory.

6. Shielding - Choose between Extra Diffuse Lens and Satine Lens. See page 8 for more details.

7. Spring steel suspension clips - Supplied two places, located nominally every 4 feet. Support wires supplied and installed by others.

8. Pre-installed 1" 1/4-20 Stud - Attached to fixture every nominal 4 feet.

9. Coupling and Threaded Rod to Structure - Supplied and installed by others.

10 Rotating Crossbar - For inaccessible ceilings, adjustable for ceiling thicknesses from 1/4" to 2". Support required nominally every 4'.

11. Steel Wall Bracket and 1/4-20 Rod - Supplied nominally every 4 ft. (Fasteners to wall and wall anchors by others.)

12. Aluminum Wall Bracket - Secured to wall (fasteners and wall anchors by others) and runs entire length of fixture. Also supplied for width of M6R1 continuous flange fixtures. Allows for 1/8" gap between flange and wall to create shadow line.

Interior Luminaire Finish - Standard interior colors are White (WH), Black (BK) and Silver (SV). RAL Classic colors (SP) are available, please specify RAL#.

SELUX Corp. © 2006
 TEL: (845) 691-7723
 FAX: (845) 691-6749
 www.selux.com/usa
 M6R1S-01 (v5.0)

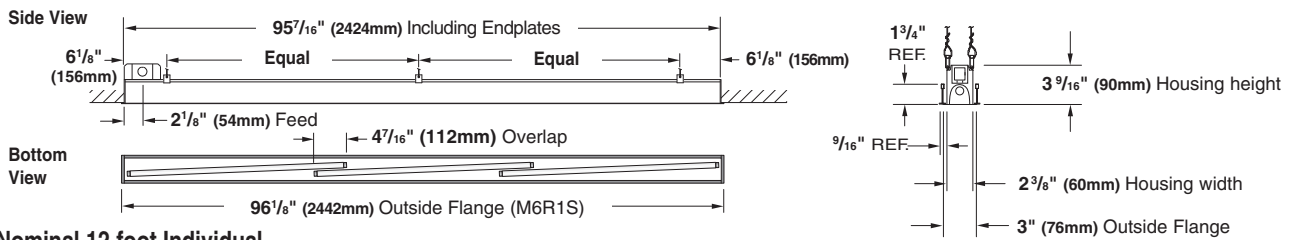


Union Made Affiliated
 with IBEW Local 363

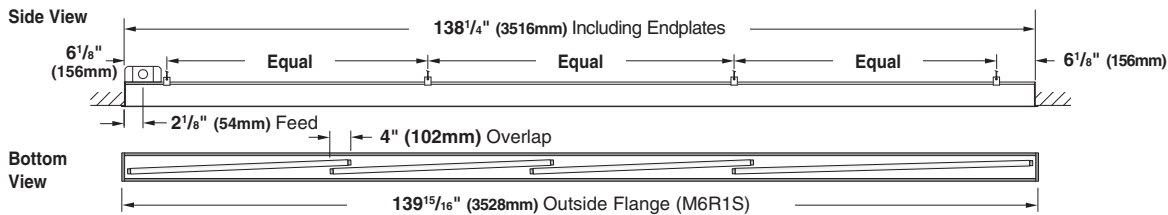
In a continuing effort to offer the best product possible, we reserve the right to change, without notice, specifications or materials that in our opinion will not alter the function of the product. Specification sheets found at www.selux.com/usa are the most recent versions and supercede all other printed or electronic versions.

M6R1S/M6R2S (Single Staggered Lamps) Standard Layout Dimensions

Nominal 8 foot Individual

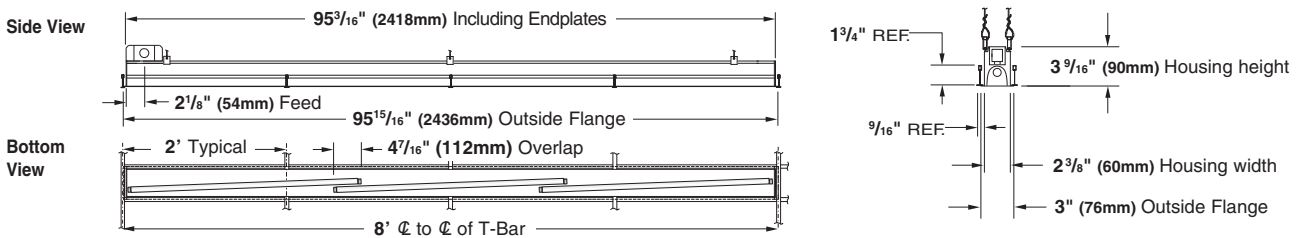


Nominal 12 foot Individual

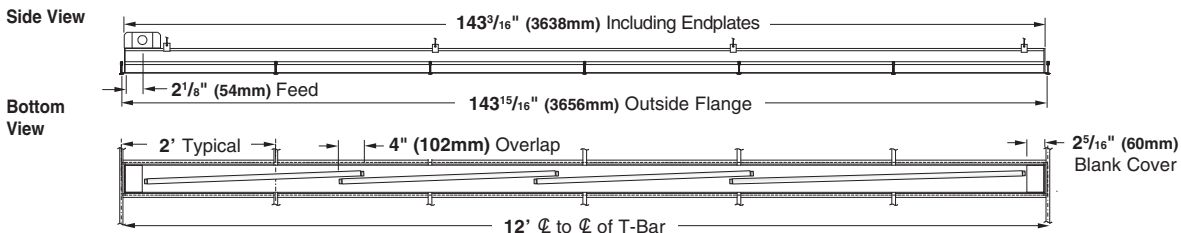


M6R1S (Single Staggered Lamps) T-Bar Layout Dimensions (option - TB)

Nominal 8 foot Individual



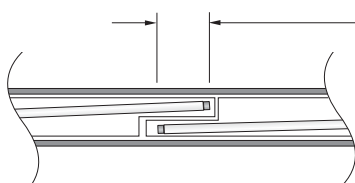
Nominal 12 foot Individual



Fixture supplied with 7/8 knockout located 2 1/8" from end in top of fixture.

For other lengths, lamping, continuous runs or configurations please specify overall length (in feet), accessories desired and sketch/drawing of configuration. SELUX will detail project drawings upon order and supply submittal drawings for approval. Individual fixtures cannot be field joined. If you have any questions please contact SELUX customer service or applications engineering for assistance (1-800-SELUX-CS).

Staggered Lamps Principle



Lamps are spaced with 4" to 6" overlap to completely illuminate luminaire and eliminate socket shadows. Factory will supply approval drawings for other lengths using combinations of 21W & 28W T5 lamps or 39W & 54W T5HO lamps.

Minimal socket shadows may be visible at certain angles. Refer to pages 6 and 8 for more information.

PENTRON® T5 FLUORESCENT LAMPS

PENTRON® T5 lamps are designed to operate on dedicated electronic programmed rapid start (also know as programmed start) ballasts only. These lamps are globally standardized and are designed to operate with their peak light output at 35°C (95°F) ambient temperature. For comparison purposes and to accommodate existing lamp measurement standards, ratings are given at both 25°C (77°F) and 35°C (95°F). The new lamp dimensions allow for innovative fixture designs and improved fixture performance

PENTRON® High Performance T5 Lamps

Nominal Wattage	Bulb	Nominal Length (in)	MOL (in)	Base	Product Number	Ordering Abbreviation	Pkg Qty	Avg Rated Life @3hrs/start (@12hrs/start)	CCT (K)	CRI	Approx Lumens Initial @25°C/77°F	Approx Lumens Mean @35°C/95°F	Symbols & Footnotes
28	T5	48	45.8	Mini Bipin	20868	FP28/830/ECO	40	20000	3000	85	2600	2418	31,33,38,48,74,76
					20901	FP28/835/ECO	40	20000	3500	85	2600	2418	31,33,38,48,74,76
					20902	FP28/841/ECO	40	20000	4100	85	2600	2418	31,33,38,48,74,76
					22203	FP28/850/ECO	40	20000	5000	85	2545	2367	31,33,38,48,74,76
					20990	FP28/865/ECO	40	20000	6500	85	2400	2232	31,33,38,48,74,76
					20977	FP28RED 40/CS 1/SKU	40	20000			2100		15,31,33,38,48,74
					20978	FP28GREEN 40/CS 1/SKU	40	20000			3500		15,31,33,38,48,74
					20986	FP28BLUE 40/CS 1/SKU	40	20000			700		15,31,33,38,48,74
14	T5	24	22.2	Mini Bipin	20907	FP14/830/ECO	40	20000	3000	85	1200	1116	31,33,38,48,74,76
					20908	FP14/835/ECO	40	20000	3500	85	1200	1116	31,33,38,48,74,76
					20914	FP14/841/ECO	40	20000	4100	85	1200	1116	31,33,38,48,74,76
					20988	FP14/865/ECO	40	20000	6500	85	1100	1045	31,33,38,48,74,76
21	T5	36	34	Mini Bipin	20919	FP21/830/ECO	40	20000	3000	85	1900	1767	31,33,38,48,74,76
					20921	FP21/835/ECO	40	20000	3500	85	1900	1767	31,33,38,48,74,76
					20924	FP21/841/ECO	40	20000	4100	85	1900	1767	31,33,38,48,74,76
					20989	FP21/865/ECO	40	20000	6500	85	1750	1662	31,33,38,48,74,76
35	T5	60	57.6	Mini Bipin	20925	FP35/830/ECO	40	20000	3000	85	3300	3069	31,33,38,48,74,76
					20926	FP35/835/ECO	40	20000	3500	85	3300	3069	31,33,38,48,74,76
					20927	FP35/841/ECO	40	20000	4100	85	3300	3069	31,33,38,48,74,76

PENTRON® PREMIER™ High Performance T5 Lamps

Nominal Wattage	Bulb	Nominal Length (in)	MOL (in)	Base	Product Number	Ordering Abbreviation	Pkg Qty	Avg Rated Life @3hrs/start (@12hrs/start)	CCT (K)	CRI	Approx Lumens Initial @25°C/77°F	Approx Lumens Mean @35°C/95°F	Symbols & Footnotes
28	T5	48	45.8	Mini Bipin	20948	FP28/830PM/ECO	40	20000	3000	85	2730	2594	31,33,38,48,74,76
					20943	FP28/835PM/ECO	40	20000	3500	85	2730	2594	31,33,38,48,74,76
					20944	FP28/841PM/ECO	40	20000	4100	85	2730	2594	31,33,38,48,74,76

FLUORESCENT

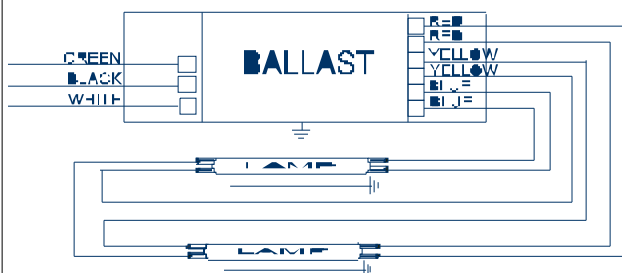
ICN-2S28@120

Brand Name	CENTIUM T5
Ballast Type	Electronic
Starting Method	Programmed Start
Lamp Connection	Series
Input Voltage	120
Input Frequency	50/60 HZ
Status	Active

Electrical Specifications

Lamp Type	Num. of Lamps	Rated Lamp Watts	Min. Start Temp (°F/C)	Input Current (Amps)	Input Power (ANSI Watts)	Ballast Factor	MAX THD %	Power Factor	MAX Lamp Current Crest Factor	B.E.F.
F14T5	1	14	0/-18	0.16	19	1.07	20	0.98	1.7	5.63
F14T5	2	14	0/-18	0.29	34	1.06	10	0.98	1.7	3.12
F21T5	1	21	0/-18	0.21	26	1.03	15	0.99	1.7	3.96
F21T5	2	21	0/-18	0.40	48	1.02	10	0.98	1.7	2.13
F28T5	1	28	0/-18	0.28	33	1.04	10	0.98	1.7	3.15
* F28T5	2	28	0/-18	0.55	64	1.03	10	0.99	1.7	1.61
F35T5	1	35	0/-18	0.34	41	1.01	10	0.98	1.7	2.46
F35T5	2	35	0/-18	0.67	80	1.00	10	0.99	1.7	1.25

Wiring Diagram

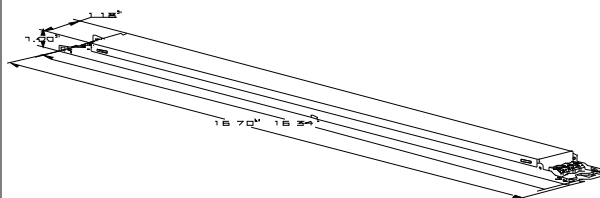


The wiring diagram that appears above is for the lamp type denoted by the asterisk (*)

Standard Lead Length (inches)

	in.	cm.		in.	cm.
Black	0	0	Yellow/Blue	0	0
White	0	0	Blue/White	0	0
Blue	0	0	Brown	0	0
Red	0	0	Orange	0	0
Yellow	0	0	Orange/Black	0	0
Gray	0	0	Black/White	0	0
Violet	0	0	Red/White	0	0

Enclosure



Enclosure Dimensions

OverAll (L)	Width (W)	Height (H)	Mounting (M)
16.70 "	1.18 "	1.00 "	16.34 "
16 7/10	1 9/50	1	16 17/50
42.4 cm	3 cm	2.5 cm	41.5 cm

Revised 08/21/2006



Data is based upon tests performed by Philips Lighting Electronics N.A. in a controlled environment and is representative of relative performance. Actual performance can vary depending on operating conditions. Specifications are subject to change without notice. All specifications are nominal unless otherwise noted.

PHILIPS LIGHTING ELECTRONICS N.A.

10275 WEST HIGGINS ROAD · ROSEMONT, IL 60018

Tel: 800-322-2086 · Fax: 888-423-1882 · www.philips.com/advance

Customer Support/Technical Service: 800-372-3331 · OEM Support: 866-915-5886

ICN-2S28@120	
Brand Name	CENTIUM T5
Ballast Type	Electronic
Starting Method	Programmed Start
Lamp Connection	Series
Input Voltage	120
Input Frequency	50/60 HZ
Status	Active

Electrical Specifications

Notes:

Section I - Physical Characteristics

- 1.1 Ballast shall be physically interchangeable with standard electromagnetic or standard electronic ballasts, where applicable.
- 1.2 Ballast shall be provided with integral leads or poke-in wire trap connectors color-coded per ANSI C82.11.

Section II - Performance Requirements

- 2.1 Ballast shall be Programmed Start.
- 2.2 Ballast shall contain auto restart circuitry in order to restart lamps without resetting power.
- 2.3 Ballast shall operate from 50/60 Hz input source of _____ (120V through 277V or 347V through 480V) with sustained variations of +/- 10% (voltage and frequency) with no damage to the ballast.
- 2.4 Ballast shall be high frequency electronic type and operate lamps at a frequency above 42 kHz to avoid interference with infrared devices and eliminate visible flicker.
- 2.5 Ballast shall have a Power Factor greater than 0.98 for primary lamp.
- 2.6 Ballast shall have a minimum ballast factor of 1.00 for primary lamp application.
- 2.7 Ballast shall provide for a Lamp Current Crest Factor of 1.7 or less in accordance with lamp manufacturer recommendations.
- 2.8 Ballast input current shall have Total Harmonic Distortion (THD) of less than 20% for Standard models and THD of less than 10% for Centium models when operated at nominal line voltage with primary lamp.
- 2.9 Ballast shall have a Class A sound rating.
- 2.10 Ballast shall have a minimum starting temperature of _____ {-18C (0F) or -29C (-20F)} for primary lamp. Consult lamp manufacturer for temperature versus light output characteristics.
- 2.11 Ballast shall provide Lamp EOL Protection Circuit.
- 2.12 Ballast shall tolerate sustained open circuit and short circuit output conditions without damage.
- 2.13 Ballast shall have a hi-low switching option when operating (4) F54T5/HO lamps to allow switching from 4-2 lamps, 3-2 lamps or 3-1 lamp.
- 2.14 Four-lamp ballast shall have semi-independent lamp operation.

Section III - Regulatory Requirements

- 3.1 Ballast shall not contain any Polychlorinated Biphenyl (PCB).
- 3.2 Ballast shall be Underwriters Laboratories (UL) listed, Class P and Type 1 Outdoor; and Canadian Standards Association (CSA) certified where applicable.
- 3.3 Ballast shall comply with ANSI C62.41 Category A for Transient protection.
- 3.4 Ballast shall comply with ANSI C82.11 where applicable.
- 3.5 Ballast shall comply with the requirements of the Federal Communications Commission (FCC) rules and regulations, Title 47 CFR part 18, Non-Consumer (Class A) for EMI/RFI (conducted and radiated).
- 3.6 Ballast shall comply with UL Type CC rating.

Section IV - Other

- 4.1 Ballast shall be manufactured in a factory certified to ISO 9002 Quality System Standards.
- 4.2 Ballast shall carry a five-year warranty from date of manufacture against defects in material or workmanship, including replacement, for operation at a maximum case temperature of 70C. Ballasts with a "90C" designation in their catalog number shall also carry a three-year warranty at a maximum case temperature of 90C.
- 4.3 Manufacturer shall have a fifteen-year history of producing electronic ballasts for the North American market.

Revised 08/21/2006



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DT-300 Series Dual Technology Ceiling Sensors

Architecturally appealing
low-profile appearance

SmartSet™ automatically
selects optimal settings
for each space

Walk-through mode
increases savings potential

Ultrasonic diffusers give more
comprehensive coverage



Plug terminal wiring for
quick and easy installation

Accepts low-voltage
switch input for
manual-on operation

Automatic or manual-on operation
when used with a BZ-150 Power Pack

PROJECT

LOCATION/TYPE

Product Overview

Description

The DT-300 Series Dual Technology Ceiling Sensors combine the benefits of passive infrared (PIR) and ultrasonic technologies to detect occupancy. Sensors have a flat, unobtrusive appearance and provide 360 degrees of coverage.

Operation

Low voltage DT-300 Series sensors utilize a Watt Stopper/Legrand power pack to turn lights on when both PIR and ultrasonic technologies detect occupancy. They can also work with a low voltage switch for manual-on operation. PIR technology senses motion via a change in infrared energy within the controlled area, whereas ultrasonic uses the Doppler Principle and 40KHz high frequency ultrasound. Once lights are on, detection by either technology holds them on. When no occupancy is detected for the length of the time delay, lights turn off. DT-300 Series Sensors can also be set to trigger lights on when either technology or both detect occupancy, or to require both technologies to hold lighting on.

Features

- Advanced control logic based on RISC microcontroller provides:
- Detection Signature Processing eliminates false triggers and provides immunity to RFI and EMI
- SmartSet automatically adjusts sensitivity and time delay settings to fit occupant patterns
- Walk-through mode turns lights off three minutes after the area is initially occupied – ideal for brief visits such as mail delivery
- Available with built-in light level sensor featuring simple, one-step setup
- Sensors work with low-voltage momentary switches to provide manual control
- Patented ultrasonic diffusion technology spreads coverage to a wider area
- LEDs indicate occupancy detection
- Uses plug terminal wiring system for quick and easy installation
- Eight occupancy logic options provide the ability to customize control to meet application needs
- Available with isolated relay for integration with BAS or HVAC

SmartSet™

DT-300 Series Sensors require no adjustment at installation, as SmartSet technology continuously monitors the controlled space to identify usage patterns. Based on these patterns, the unit automatically adjusts time delay and sensitivity settings for optimal performance and energy efficiency. Sensors assigns short delays (as low as five minutes) for times when the space is usually vacant, and longer delays (up to 30 minutes) for busier times.

Application

DT-300 Series Dual Technology Sensors have the flexibility to work in a variety of applications, where one technology alone could cause false triggers. Ideal applications include classrooms, open office spaces, large offices and computer rooms. The DT-300 Series mounting system makes them easy to install in ceiling tiles or to junction boxes, providing the flexibility to be used in a wide range of spaces.

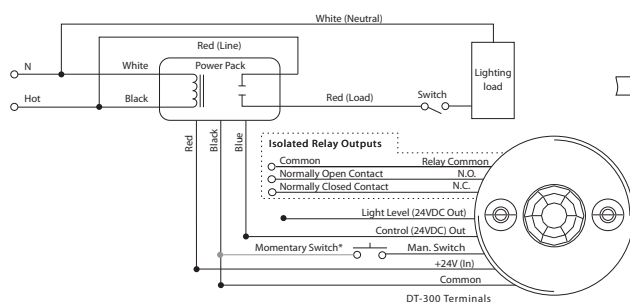


Specifications

- 24 VDC/VAC
- Ultrasonic frequency: 40kHz
- Time delays: SmartSet (automatic), fixed (5, 10, 15, 20, or 30 minutes), Walk-through/Test Modes
- Sensitivity adjustment: SmartSet (automatic); reduced sensitivity (PIR); variable with trim pot (ultrasonic)
- Built-in light level sensor: 10 to 300 footcandles (107.6 to 3,229.2 lux)
- Low-voltage, momentary switch input for manual on or off operation
- DT-300 contains an isolated relay with N/O and N/C outputs; rated for 1 Amp @ 30 VDC/VAC
- Multilevel Fresnel lens provides 360° coverage for superior occupancy detection
- Mounting options: ceiling tile; 4" square junction box with double-gang mud ring
- Max DT-300s per power pack: B=2, BZ=3
- Max DT-305s per power pack: B=3, BZ=4
- Dimensions: 4.50" diameter x 1.02" deep (114.3mm x 25.9mm)
- UL and CUL listed; five-year warranty

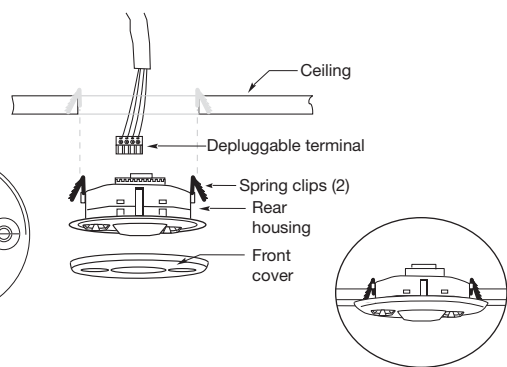
Wiring & Mounting

Wiring Diagram



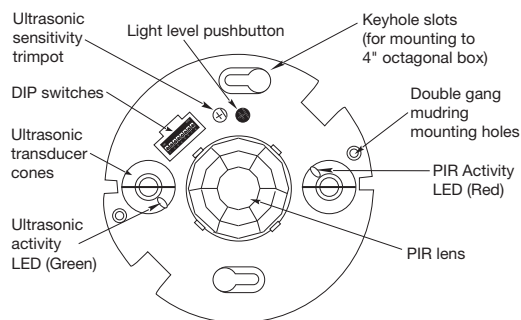
*Momentary switch connection is optional.
Connect only when momentary switch is installed.

Ceiling Mounting



Controls & Settings

Product Controls



DIP Switch Settings

◀ = Factory Setting
● = ON
- = OFF

Occupancy Logic	Switch#		
	1	2	3
Standard	-	-	-
Option 1	●	-	-
Option 2	-	●	-
Option 3	●	●	-
Option 4	-	-	●
Option 5	●	-	●
Option 6	-	●	●
Option 7	●	●	●

Occupancy Logic	Trigger		
	Initial Occupancy	Maintain Occupancy	Re-trigger (seconds duration)
Standard	Both	Either	Either(5)
Option 1	Either	Either	Either(5)
Option 2	PIR	Either	Either(5)
Option 3	Both	Both	Both(5)
Option 4	PIR	PIR	PIR(5)
Option 5	Ultra	Ultra	Ultra(5)
Option 6	Man.	Either	Either(30)
Option 7	Man.	Both	Both(30)

Time Delay	4	5	6
5 sec/SmartSet	↑	-	-
5 minutes	-	-	●
10 min.	↑	-	-
10 minutes	-	●	-
15 min.	↑	-	-
15 minutes	-	●	-
20 minutes	-	-	●
30 min.	↑	-	-

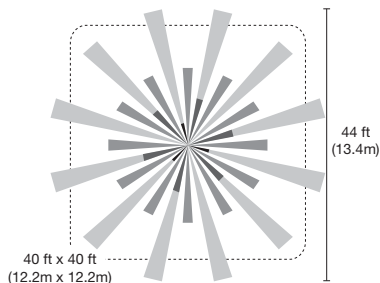
↑ = walk-through mode

LEDs	7
Disabled	-
Enabled	●

PIR Sensitivity	8
Minimum	-
Max./SmartSet	●

The technology control (occupancy logic) options are adjustable by user. The standard setting recommended for most applications requires both technologies to trigger on, either to hold on.

Coverage



Coverage shown is maximum and represents half-step walking motion. Under ideal conditions, coverage for half-step walking motion can reach up to 1000 ft².

Ordering Information

Catalog No.	Voltage	Current	Coverage	Features
<input type="checkbox"/> DT-300	24 VDC/VAC	43 mA	up to 1000 ft ² (92.9 m ²)	Isolated relay, light level
<input type="checkbox"/> DT-305	24 VDC/VAC	35 mA	up to 1000 ft ² (92.9 m ²)	

Sensors are white and use Watt Stopper power packs. Current consumption can be slightly higher when only one sensor per power pack is used.

Delta Star™

Delta Star™ gives the lighting designer two choices of deep cutoff options. When the design requires the highest degree of brightness control of the MR16 lamp, Delta Star is the answer. Its precision, machined aluminum construction and deep cutoff design combine to make Delta Star a very economical low-brightness, low-voltage lighting instrument.



Lighting Design by Jan Lennox-Moyer, MSH Visual Planner



Features

- Tamper proof design.
- Completely sealed optical compartment.
- Clear, tempered glass lens, factory sealed.
- Enclosed wireway mounting knuckle.
- Machined aluminum construction with stainless steel hardware.
- & Listed with MR16 lamps to 50 watts.
- For use with remote transformers, see pages 92, 94, and 97.

CATALOG NUMBER LOGIC

Example: DS - 8 - BZP - 9 - 11 - A

Series _____

Lamp Type

0 - By others	16 - EYS(42W), 25° N. Flood
1 - ESX(20W), 12° Spot	17 - EYP(42W), 40° Flood
2 - BAB(20W), 40° Flood	6 - EXT(50W), 13° Spot
3 - FRB(35W), 12° Spot	7 - EXZ(50W), 26° N. Flood
4 - FRA(35W), 23° N. Flood	8 - EXN(50W), 40° Flood
5 - FMW(35W), 40° Flood	9 - FNV(50W), 60° W. Flood
15 - EYR(42W), 12° Spot	

Finish

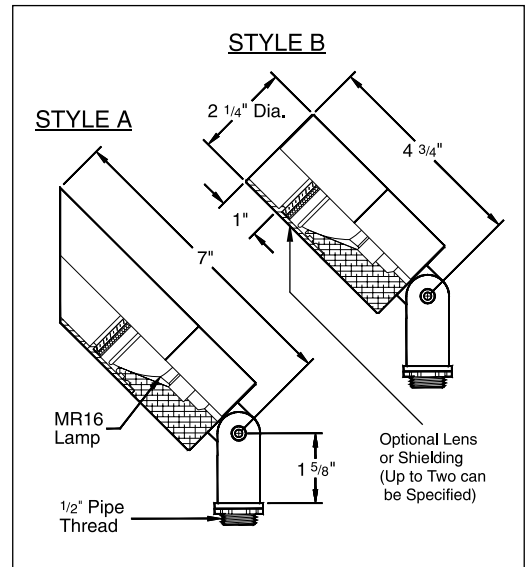
Powder Coat Color	Satin	Wrinkle
Bronze	BZP	BZW
Black	BLP	BLW
White(Gloss)	WHP	WHW
Aluminum	SAP	---
Verde	---	VER

Lens Type
9 - Clear (Standard), 10 - Spread, 12 - Soft Focus, 13 - Rectilinear

Shielding
11 - Honeycomb Baffle

Cap Style
A - 45°, B - 90°

Available in Brass, see page 90.





MR16

TRU-AIM IR® MR16 LAMPS

UV Filter capsule with axial filament in covered constant color, hard coated dichroic reflector and infrared reflective coating on the lamp capsule.

Watts	Bulb	Base	Product Number	Symbols & Footnotes	Ordering Abbreviation	Volts	Pkg Qty	Beam Type	Class & Filament	Avg Rated Life(hrs)	Lumens CCT	CBCP	Beam Angle	MOL (in)
20	MR16	GU5.3 Bipin	58531	47,62,66,91,93	20MR16/IR/SP10/C	12	20	SP	C,AXIAL	5000	3000	6000	10	1.75
			58532	47,62,66,91,93	20MR16/IR/NFL25/C	12	20	NFL	C,AXIAL	5000	3000	2300	25	1.75
			58533	47,62,66,91,93	20MR16/IR/FL35/C	12	20	FL	C,AXIAL	5000	3000	1000	35	1.75
			58838	47,62,66,91,93	20MR16/IR/WFL60/C	12	20	WFL	C, AXIAL	5000	3000	450	60	1.75
37	MR16	GU5.3 Bipin	58641	37,47,62,92,93	37MR16/IR/SP10/C	12	20	SP	C, AXIAL	5000	3000	12500	10	1.75
			58634	37,47,62,92,93	37MR16/IR/NFL25/C	12	20	NFL	C, AXIAL	5000	3000	4400	25	1.75
			58633	37,47,62,92,93	37MR16/IR/FL35/C	12	20	FL	C, AXIAL	5000	3000	2200	35	1.75
			58837	47,62,66,92,93	37MR16/IR/WFL60/C	12	20	WFL	C, AXIAL	5000	3000	1100	60	1.75
50	MR16	GU5.3 Bipin	54175	37,47,62,92,93	50MR16/IR/SP10/C	12	20	SP	C, AXIAL	5000	3000	15000	10	1.75
			54174	37,47,62,92,93	50MR16/IR/NFL25/C	12	20	NFL	C, AXIAL	5000	3000	5700	25	1.75
			54173	37,47,62,92,93	50MR16/IR/FL35/C	12	20	FL	C, AXIAL	5000	3000	2850	35	1.75
			54237	47,62,66,92,93	50MR16/IR/WFL60/C	12	20	WFL	C, AXIAL	5000	3000	1430	60	1.75

TRU-AIM TITAN® MR16 LAMPS

UV Filter capsule with axial filament in covered constant color, hard coated dichroic reflector.

Watts	Bulb	Base	Product Number	Symbols & Footnotes	Ordering Abbreviation	Volts	Pkg Qty	Beam Type	Class & Filament	Avg Rated Life(hrs)	Lumens CCT	CBCP	Beam Angle	MOL (in)
20	MR16	GU5.3 Bipin	58300	62,65,91,145	20MR16/T/SP10/C(ESX)	12	20	SP	C, AXIAL	4000	3000	5000	10	1.75
			58301	62,65,91,93,145	20MR16/T/FL35/C(BAB)	12	20	FL	C, AXIAL	4000	3000	780	35	1.75
			58302	62,65,91,93,145	20MR16/T/WFL60/C	12	20	WFL	C, AXIAL	4000	3000	350	60	1.75
35	MR16	GU5.3 Bipin	58303	62,65,91,93,145	35MR16/T/SP10/C(FRB)	12	20	SP	C, AXIAL	4000	3000	9100	10	1.75
			58304	62,65,91,93,145	35MR16/T/NFL25/C	12	20	NFL	C, AXIAL	4000	3000	3100	25	1.75
			58305	62,65,91,93,145	35MR16/T/FL35/C(FMW)	12	20	FL	C, AXIAL	4000	3000	1500	35	1.75
			58306	62,65,91,93,145	35MR16/T/WFL60/C	12	20	WFL	C, AXIAL	4000	3000	700	60	1.75
50	MR16	GU5.3 Bipin	58307	62,65,91,93,145	50MR16/T/SP10/C(EXT)	12	20	SP	C, AXIAL	4000	3000	11500	10	1.75
			58308	62,65,91,93,145	50MR16/T/NFL25/C(EXZ)	12	20	NFL	C, AXIAL	4000	3000	4400	25	1.75
			58309	62,65,91,93,145	50MR16/T/FL35/C(EXN)	12	20	FL	C, AXIAL	4000	3000	2200	35	1.75

E-17 Metal Halide



Polished Brass Finish (POL)
Shown with Flood Reflector,
Accessory Holder and Honeycomb Baffle

Catalog Number Logic

Material Faceplate OptiLock™ Reflector Lamp Finish Accessory Ballast Type Input Voltage Option

S - TY2 - EH70 - NS - 110 - POL - 11 - H70E - 120 - AH/IC



Material
Blank - Aluminum
B - Brass
S - Stainless Steel



Faceplate
TY2 - Flush (Integral Concrete Pour Cover)



OptiLock™
EH50 - E-17 Metal Halide (50W)
EH70 - E-17 Metal Halide (70W)
EH100 - E-17 Metal Halide (100W)
EH150 - E-17 Metal Halide (150W)



NS - Narrow Spot
SP - Spot
FL - Flood
WF - Wide Flood
WW - Wall Wash



Lamp
0 - By Others
106 - 50W/E-17/MH/MED/Clear
107 - 50W/E-17/MH/MED/Diffuse
110 - 70W/E-17/MH/MED/Clear
111 - 70W/E-17/MH/MED/Diffuse
114 - 100W/E-17/MH/MED/Clear
115 - 100W/E-17/MH/MED/Diffuse
116 - 150W/E-17/MH/MED/Clear
117 - 150W/E-17/MH/MED/Diffuse



Finish

Aluminum & Brass Faceplates			Brass Faceplates	
Powder Coat Color	Satin	Wrinkle	Machined	MAC
Bronze	BZP	BZW	Polished	POL
Black	BLP	BLW	Mitique™	MIT
White (Gloss)	WHP	WHW	Stainless Faceplates	
Aluminum	SAP	--	Machined	MAC
Verde	--	VER	Polished	POL
			Brushed	BRU



Accessory Select up to 2. Requires Accessory Holder.
10 - Spread Lens* **13** - Rectilinear Lens*
11 - Honeycomb Baffle* * Not available with Wall Wash Reflector.



Ballast Type
H50E - 50W Electronic **H100E** - 100W Electronic
H70E - 70W Electronic **H150E** - 150W Electronic



Input Voltage
MT - 120/208/240/277 Multi Volt Ballast



Option
AH - Accessory Holder (Accommodates up to 2 Media)
DG - Dome Glass Lens (Replaces Flat Glass. Not Driveover Rated)
GM-R - Round Grout Mask
GM-S - Square Grout Mask
GS - Glare Shield*
HD - Half Dome*
IC - Internal Cutoff Louver
ICEE™ Lens (Faceplate standard aluminum only. Concrete Pour Collar included.)** See pages 34-35 for details.
RG - Rock Guard*
RO - Rock Guard with Optical Opening*
TC - Traction Control Lens™ (Replaces Flat Glass.) See page 58 for details.
XL - Extra Load Lens (Rated for 55,000 lb. GVW driveover load)

* Material and Finish to Match Faceplate.
Dome lens included. See pages 32 for Option details.
**Options DG, GS, HD, RG, RO and XL not available with ICEE lens option

Specifications

Fixture Housing

Corrosion-free housing made from high strength, injection molded composite compound. Glass reinforced, flame retardant and UV stabilized. Integrated walk-over cover provides closure of housing during rough-in and serves as concrete pour cover. Integral bubble level simplifies level housing installation.

Junction Box

Top mounted with dual access for wire connection and inspection. (2) bottom-entry, 3/4" NPT female conduit entries with knockout plugs and (3) side flats for 1/2" or 3/4" conduit adapters.

Patented Stability Flange

Molded collar projects into installation sub-strate to reinforce housing stability. Integral REBAR saddles simplify installation onto concrete form. (4) Orthogonal bosses permit use of 1/2" PCV conduit or EMT to simplify vertical position and leveling of housing. Pre-set self-tapping screws anchor housing at proper elevation.

Faceplate

5/8" thick machined A356 aluminum with (4) black oxidized, captive, stainless steel mounting screws. Spring loaded hardware facilitates faceplate removal. 30° horizontal rotation provides for linear screw alignment. Also available in machined brass or machined stainless steel.

Patented Adjustable Leveling Collar

Machined collar provides biaxial 4° tilt and 1" elevation adjustment (total travel) for correction of uneven housing installation. Threaded, stainless steel adjustment posts. Collar material and finish match faceplate.

Lens

Shock resistant, tempered 3/8" borosilicate flat glass. Suitable for walk-over and drive-over applications to 35,000 lbs. GVW. Optional Extra Load Lens (XL) suitable for use in heavier load installations to 55,000 lbs. GVW.

ICEE™ Lens Option (Patent Pending)

ICEE™, or Interstice Cooling Evacuated Enclosure, is a significant advancement in the science of temperature management. It effectively reduces surface lens temperatures without compromising lumen output or optical control. Increases depth of Tenaya2® by 3". Faceplate available in Aluminum only.

Aiming & Control

OptiLock™ mechanism provides biaxial source control with 360° horizontal rotation and vertical adjustment up to 20° from nadir. Wall Wash OptiLock™ rotates 360°. Positive lock action and keyed collar ensure optical alignment after lamp servicing. Optional accessory holder accommodates up to two lens or louver media.

Socket

Specification grade ceramic body lamp holder rated for 4kV starting pulse. Medium base, nickel-plated copper alloy lamp grip and screw shell. Corrosion resistant coil spring under center contact.

Ballast Enclosure

IP-68 rated enclosure. 16AWG, direct burial electrical cables with watertight, molded electrical quick disconnects. Corrosion free polyamide strain relief connectors. High Power factor, electronic multi-volt ballast.

Wiring / Connectors

Teflon® coated wire, 18AWG, 600V, 250°C rated and certified to UL1659 standard. (3) silicone filled connectors supplied for line connection. Maximum (2) #10 & (1) #18. Minimum (1) #12 & (1) #18.

Patented Water Management Features

Self Evacuating Airtight Lamp Module (S.E.A.L.™). IP-68 rated, vacuum sealed enclosure. Molded, solid silicone faceplate gasket. Patented Anti-Condensation Valve (ACV™) eliminates condensation from optical chamber and transformer enclosure. Watertight male receptacle. Toolless entry for lamp service.

Patented HydroLock™ technology provides fail safe water barrier between junction box and interior components. Anti-Siphon Valve (ASV™) prevents "wicking" through conductor insulation.

Finish

StarGuard® (Pat. Pend), a 15 stage, chromate-free process cleans and conversion coats aluminum components prior to application of Class 'A' TGIC polyester powder coating. Brass components are available in powder coat or handcrafted metal finish. Stainless steel components are available in handcrafted metal finish.

Warranty

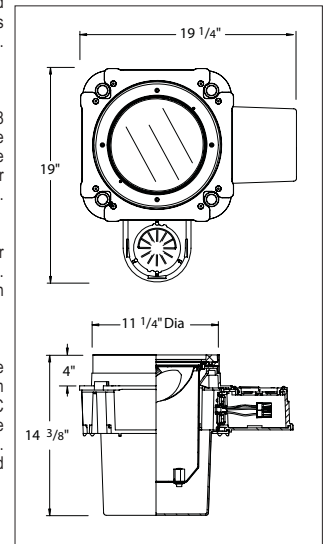
5 year limited warranty.

Listings

IP-68 Rated, ARL and CSA Listed.



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For lamp information, see page 52-53.



* Tenaya2® is covered in whole or in part by U.S. Patent No. 7,175,297; U.S. Patent No. 7,033,038; U.S. Patent No. 6,254,258 B1



PAR30 LN

PAR38

E17

POWERBALL® CERAMIC METALARC® PAR High CRI, Pulse Start, UV Stop – Open or Enclosed Fixtures

Watts	Bulb	Base	Product Number	Ordering Abbreviation	ANSI Code	Pkg Qty	Beam Type	Beam Angle	Operating Position	Fix Req	Avg Rated Life (hrs)	MBCP	Approx Lumens (initial)	CRI	CCT (K)	Symbols & Footnotes
39	PAR30LN	E26 Med	64885	MCP39PAR30LN/U/830/VWFL/ECOPB	M130/O	6	VWFL	46°	Universal	0	12000	3500	2300	85	3000	1,4,7,17,24,25,30,48
70	PAR30LN	E26 Med	64201	MCP70PAR30LN/U/930/SP/ECOPB	M139/O, M98/O	6	SP	12°	Universal	0	12000	42000	3600	95	3000	1,4,7,17,25,26,30,48
			64202	MCP70PAR30LN/U/930/FL/ECOPB	M139/O, M98/O	6	FL	30°	Universal	0	12000	12000	3600	95	3000	1,4,7,17,25,26,30,48
	PAR38	E26 Med Skt	64749	MCP70PAR38/U/830/SP/ECOPB	M139/O, M98/O	6	SP	15°	Universal	0	12000	40000	4300	88	3000	1,4,7,17,26,30,38,48
			64750	MCP70PAR38/U/830/FL/ECOPB	M139/O, M98/O	6	FL	25°	Universal	0	12000	16000	4300	88	3000	1,4,7,17,26,30,38,48
			64751	MCP70PAR38/U/VWFL/830/ECOPB	M139/O, M98/O	6	VWFL	65°	Universal	0	12000	3500	4300	88	3000	1,4,7,17,26,30,38,48
100	PAR38	E26 Med Skt	64752	MCP100PAR38/U/830/SP/ECOPB	M90/O, M140/O	6	SP	15°	Universal	0	12000	58000	6500	88	3000	1,4,7,17,27,30,38,48
			64753	MCP100PAR38/U/830/FL/ECOPB	M90/O, M140/O	6	FL	25°	Universal	0	12000	25000	6500	88	3000	1,4,7,17,27,30,38,48
			64754	MCP100PAR38/U/830/VWFL/ECOPB	M90/O, M140/O	6	VWFL	60°	Universal	0	12000	6000	6500	88	3000	1,4,7,17,27,30,38,48
150	PAR38	E26 Med Skt	64841	MCP150/PAR38/U/830/SP/ECOPB	M102/O, M142/O	6	SP	15°	Universal	0	12000	50000	9100	88	3000	1,4,7,17,31,38,48
			64842	MCP150/PAR38/U/830/FL/ECOPB	M102/O, M142/O	6	FL	25°	Universal	0	12000	28000	9100	88	3000	1,4,7,17,31,38,48
			64843	MCP150/PAR38/U/830/VWFL/ECOPB	M102/O, M142/O	6	VWFL	65°	Universal	0	12000	6500	9100	88	3000	1,4,7,17,31,38,48

POWERBALL® CERAMIC METALARC® E17 & HIGH WATTAGE High CRI, Pulse Start – Open or Enclosed Fixtures

Watts	Bulb	Base	Product Number	Ordering Abbreviation	ANSI Code	Pkg Qty	Lamp Finish	Operating Position	Fix Req	Avg Rated Life (hrs)	Approx Lumens (initial)	(mean)	CRI	CCT (K)	Symbols & Footnotes
50	E17	E26 Med	64840	MCP50/U/MED/830PB	M110/O, M148/O	12	Clear	Universal	0	12000	4100	2850	88	3000	1,4,17,30,48
			64849	MCP50/C/U/MED/830PB	M110/O, M148/O	12	Coated	Universal	0	12000	3800	2640	88	2900	1,4,17,30,48
70	E17	E26 Med	64739	MCP70/U/MED/830PB	M139/O, M98/O	12	Clear	Universal	0	16000	5900	4365	88	3000	1,4,17,26,30,48
			64740	MCP70/C/U/MED/830PB	M139/O, M98/O	12	Coated	Universal	0	16000	5500	3900	88	3000	1,4,17,26,30,48
			64193	MCP70/U/MED/940PB	M139/O, M98/O	12	Clear	Universal	0	12000	6000	4800	93	4000	1,4,17,26,30,48
			64194	MCP70/C/U/MED/940PB	M139/O, M98/O	12	Coated	Universal	0	12000	5600	4480	93	3800	1,4,17,26,30,48
100	E17	E26 Med	64743	MCP100/U/MED/830PB	M90/O, M140/O	12	Clear	Universal	0	16000	9000	6660	88	3000	1,4,17,27,30,48
			64744	MCP100/C/U/MED/830PB	M90/O, M140/O	12	Coated	Universal	0	16000	8100	5994	88	3000	1,4,17,27,30,48
			64322	MCP100/U/MED/940PB	M90/O, M140/O	12	Clear	Universal	0	20000	8200	6150	93	4000	1,4,17,27,30,48
			64315	MCP100/C/U/MED/940PB	M90/O, M140/O	12	Clear	Universal	0	20000	7500	5625	90	4000	1,4,17,27,48



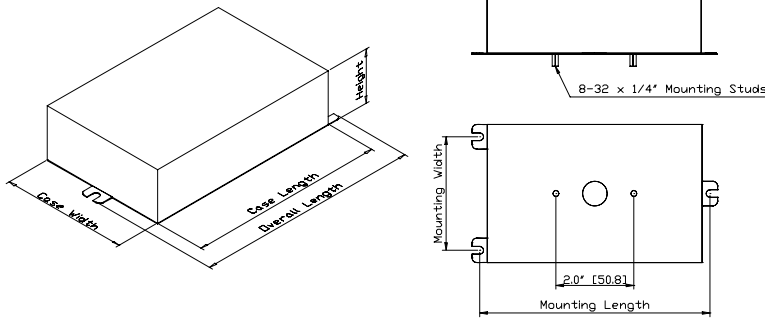
e-Vision® Electronic Ballast for Metal Halide Lamps

Catalog Number IMH-100-A-BLS-ID
 For 100W Metal Halide Lamps
 ANSI M90, M140
 120-277V 50/60Hz Electronic
 Status: Released

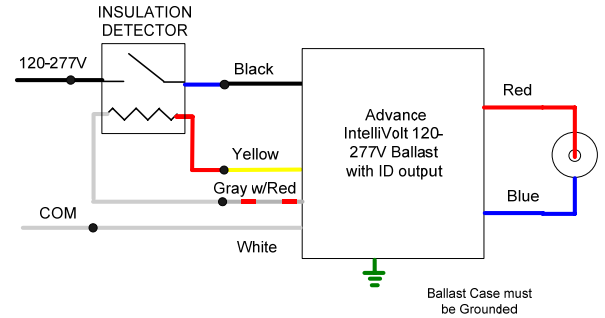
DIMENSIONS AND DATA

Lamp Data		Input Volts	Catalog Number*	Line Current (Amps)	Input Power (W)	Ballast Factor	Max THD (%)	Min Power Factor	Wiring Dia	Figure	Weight (lb)	Max Distance to Lamp (ft)
Number	Watts											
100W Watt Lamp, ANSI Code M90, M140 Minimum Starting Temp -30°C/-20°F												
1	100	120	IMH100-A-xxx-ID	0.96	115	1.0	15	0.9	8	A	1.5	5
		277		0.42	113							

Figure A

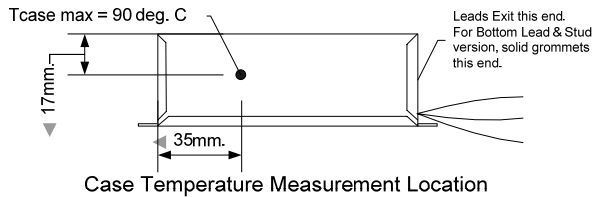


CASE LENGTH = 4.72" [120mm]
 MOUNTING LENGTH = 5.20" [132mm]
 MOUNTING WIDTH = 2.87" [73mm]
 OVERALL LENGTH = 5.51" [140mm]
 CASE WIDTH = 3.62" [92mm]
 HEIGHT = 1.50" [38mm]



Wiring Diagram 8

Ballast will not operate if Insulation Detector is Absent, Shorted or Failed Open



INSTALLATION & APPLICATION NOTES:

1. Use with any Thermal Protector having equivalent resistive value 5k to 25k ohm (4 wire versions only)
2. Open Circuit voltage across ID output approx 270VDC
3. Maximum allowable case temperature is 90°C. See figure above for measurement location
4. Ignition pulse is 4 kV max
5. All leads are 12 inches long
6. Ballast output will shutdown after 20 minutes if lamp fails to ignite
7. Power must be cycled off – then on, after replacing lamp

***Ordering Information**

Order Suffix	Description
-BLS	Ballast with bottom exit leads and mounting studs

Data is based on tests performed by Advance transformer in a controlled environment and representative of relative performance. Actual performance can vary depending on operating conditions. Specifications are subject to change without notice. All specifications are nominal unless otherwise noted.



Date: _____ Type: _____

Firm Name: _____

Project: _____

eW Graze Powercore

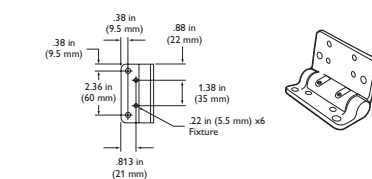
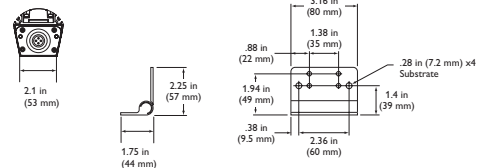
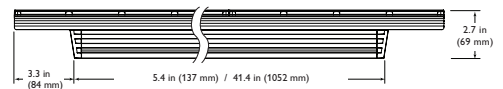
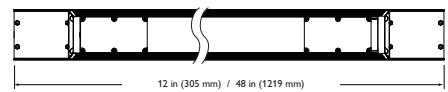
2700 K, 10° x 60° Lens

Linear, white LED surface light for wall washing and grazing

eW® Graze Powercore is a linear lighting fixture optimized for surface grazing and wall-washing applications requiring high-quality white light. Featuring Powercore® technology, eW Graze Powercore processes power directly from line voltage, eliminating the need for low-voltage, external power supplies. Available in 2700 K or 4000 K color temperatures, eW Graze Powercore offers superior illumination quality and dramatic energy savings for new installations and retrofit upgrades. Combining a space-efficient, low-profile aluminum housing and flexible mounting options allows for discrete placement within a wide range of compact architectural details

- Tailor light output to specific applications — eW Graze Powercore is available in 1 ft and 4 ft exterior-rated housings, with 10° x 60° and 30° x 60° beam angle options.
- High-performance illumination and beam quality — eW Graze Powercore offers superior beam quality for striation-free saturation as close as 6 in (152 mm) from fixture placement. With a 60° horizontal beam angle, eW Graze Powercore accommodates end-to-end or incremental placement without visible light scalloping between fixtures.
- Supports new applications for white light— Long-life LEDs (50,000 hours at 50% lumen maintenance) significantly reduce or eliminate maintenance problems, allowing the use of white lighting in spaces where bulb maintenance may be limited or unfeasible.
- Universal power input range — eW Graze Powercore accepts line voltage input of 100, 120, 220 – 240, and 277 VAC.
- Versatile installation options — Constant torque, locking hinges offer simple position control from various angles, without special tools. The low-profile extruded aluminum housing accommodates installation within wide-ranging architectural niches.

- “Cool lighting” functionality — eW Graze Powercore fixtures do not heat illuminated surfaces, discharge infrared radiation or emit ultraviolet light.
- Dimming capable — Patented DIMand™ technology offers smooth dimming capability with standard ELV-type dimmers.
- Trouble-free, code-compliant installation — IP66, UL wet location ratings. UL / cUL, FCC, CE, RoHS, WEEE certified.



For detailed product information, please refer to the eW Blast Powercore Product Guide at www.colorkinetics.com/ls/essentialwhite/ewgraze/



Specifications

Due to continuous improvements and innovations, specifications may change without notice.

Item	Specification	1 ft	4 ft
Output	Beam Angle	10° x 60°	
	Color Temperature	2700 K (+375 / -300)	
	Lumens†	404	1616
	Efficacy (Lm/W)	27.9	
	Mixing Distance	6 in (152 mm) to uniform beam saturation	
	Lumen Maintenance‡	100,000+ hours L70 @ 25° C 50,000 hours L70 @ 50° C	
Electrical	Input Voltage	100 / 120 / 220 – 240 / 277 VAC	
	Power Consumption	14.5 W maximum at full output, steady state	58.0 W maximum at full output, steady state
Control		Commercially available ELV control dimmers	
Physical	Dimensions (Height x Width x Depth)	2.7 x 12 x 2.8 in (69 x 305 x 71 mm)	2.7 x 48 x 2.8 in (69 x 1219 x 71 mm)
	Weight	2.7 lb (1.2 kg)	10.8 lb (4.9 kg)
	Housing	Extruded anodized aluminum	
	Lens	Clear polycarbonate	
	Fixture Connectors	Integral male / female waterproof connectors	
	Mounting	Multi-positional, constant torque locking hinges	
	Temperature	-40° – 122° F (-40° – 50° C) Operating -4° – 122° F (-20° – 50° C) Startup	
	Humidity	0 – 95%, non-condensing	
Certification and Safety	Certification	UL / cUL, FCC Class A, CE, RoHS, WEEE	
	LED Class	Class 2 LED product	
	Environment	Dry / Damp / Wet Location, IP66	

† Lumen measurement complies with IES LM-79-08.

‡ L70 = 70% maintenance of lumen output. (When light output drops below 70% of initial output.)

* These figures, provided as a guideline, are accurate for this configuration only. Changing the configuration can affect the fixture run lengths.



OPTIBIN[®] | POWERCORE[®] | DIMAND[®]
CKTECHNOLOGY | CKTECHNOLOGY | CKTECHNOLOGY

Fixtures

Item	Beam Angle	Voltage	Size	Item Number	Philips 12NC
eV Graze Powercore, 2700 K	10° x 60°	120 VAC	1 ft	523-000030-00	910503700276
			4 ft	523-000030-02	910503700278
		277 VAC	1 ft	523-000030-08	910503700284
			4 ft	523-000030-10	910503700286
		220 – 240 VAC	1 ft	523-000030-16	910503700292
			4 ft	523-000030-18	910503700294
		100 VAC	1 ft	523-000030-24	910503700300
			4 ft	523-000030-26	910503700302

Use Item Number when ordering in North America.

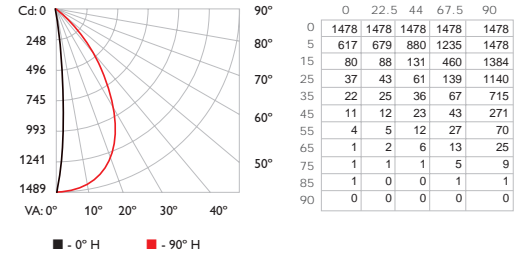


Philips Color Kinetics
3 Burlington Woods Drive
Burlington, Massachusetts 01803 USA
Tel 888.Full.RGB
Tel 617.423.9999
Fax 617.423.9998
www.colorkinetics.com

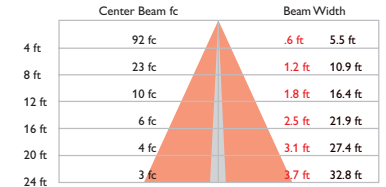
Photometrics

2700 K, 1 ft, 10° x 60° lens

Polar Candela Distribution



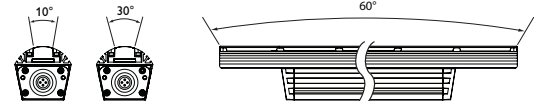
Illuminance at Distance



■ Horiz. Spread: 68.8°
■ Vert. Spread: 8.8°

Power Consumption	14.5 W
Lumens	404
Efficacy	27.9 Lm/W

For lux multiply fc by 10.7



Accessories

Item	Type	Size	Item Number	Philips 12NC
Leader Cable	UL / cUL	50 ft (15.2 m)	108-000041-00	910503700320
	CE		108-000041-01	910503700320
Jumper Cable	UL / cUL	End-to-End	108-000039-00	910503700314
		1 ft (305 mm)	108-000039-01	910503700315
	CE	5 ft (1.5 m)	108-000039-02	910503700316
		End-to-End	108-000040-00	910503700317
	CE	1 ft (305 mm)	108-000040-01	910503700318
		5 ft (1.5 m)	108-000040-02	910503700319

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DAS-000009-01 R01 02-09

Wall Sconce

Updated: 01/2009



- Full cutoff.
- Forward throw reflector.
- Egress applications.
- Cast 356 aluminum construction.
- Molded memory retentive silicone gaskets.
- Vandal resistant
- EISA compliant
- IP65 rated
- Powder coat finish in 13 standard colors with a polymer primer sealer



Architectural Area Lighting

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Fixture	Options	Color
1	2	3

1. FIXTURE

- M3-CF** Wall sconce with 120 thru 277 volt electronic ballast for use with a 26, 32, or 42 watt 4 pin compact fluorescent lamp. Specify wattage.

2. OPTIONS

- BBU** Battery backup powers a compact fluorescent lamp for up to 90 minutes during a power failure. Output of the 26 watt lamp will be 450 lumens. Output of the 32 watt lamp will be 575 lumens. Output of the 42 watt lamp will be 750 lumens.

3. COLOR

- AWT** Arctic White
- BLK** Black
- MTB** Matte Black
- DGN** Dark Green
- DBZ** Dark Bronze
- WRZ** Weathered Bronze
- BRM** Metallic Bronze
- VBL** Verde Blue
- CRT** Corten
- MAL** Matte Aluminum
- MDG** Medium Grey
- ATG** Antique Green
- LGY** Light Grey
- RAL/PREMIUM COLOR** Provide a RAL 4 digit color number
- CUSTOM COLOR** Please provide a color chip for matching

SOLD TO

PO #

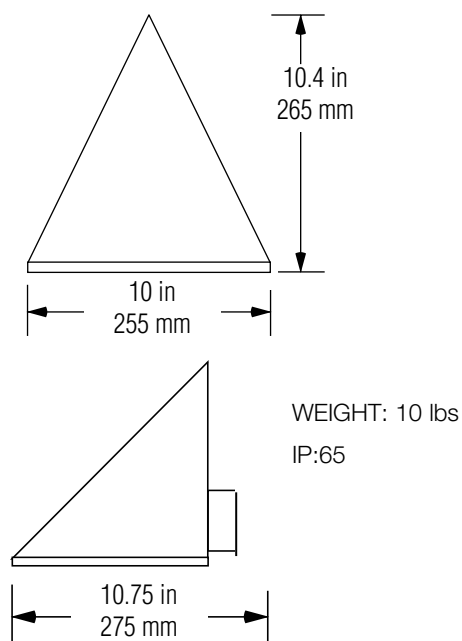
JOB NAME

Approvals

Architectural Area Lighting

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Specifications



HOUSING

The fixture shall be one-piece cast 356 aluminum with a minimum wall thickness of .188 inch. The housing shall mount over a 3 ¾ inch octagonal wall box. The lens is clear DR acrylic, sealed to the housing with a silicone gasket. The fixture is relamped by loosening four captive stainless steel fasteners.

The optical assembly shall consist of a die formed, specular Alzak® reflector with forward throw optics. The reflector is easily removed for easy access to the ballast.

The ballast shall be electronic, rated for -18°C starting with a 4 pin, 26, 32 or 42 watt lamp socket. The ballast is factory mounted and wired in the housing.

The fixture is attached with two stainless steel screws to an adapter ring that mounts to a 3 ¾ inch octagonal wall box. Adapter ring and hardware are included. Fixture is available in the down position only.

FINISH

Fixture finish consists of a five stage pretreatment regimen with a polymer primer sealer, oven dry off and top coated with a thermoset super TGIC polyester powder coat finish. The finish shall meet the AAMA 605.2 performance specification which includes passing a 3000 hour salt spray test for corrosion resistance.

EISA COMPLIANCE

AAL is 100% committed to complying with EISA requirements. All applicable products manufactured for sale in the United States after January 1, 2009, will meet EISA requirements.

ENVIRONMENTAL COMMITMENT

AAL has always provided efficient, effective and environmentally sound outdoor lighting fixtures. In addition to our every day environmental practices, AAL is the first lighting manufacturer to become CARBON NEUTRAL. Becoming CARBON NEUTRAL is just another step we have taken to promote environmental responsibility within our culture.

CERTIFICATION

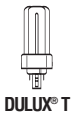
The fixture is listed with ETL for outdoor, wet location use, UL1598 and Canadian CSA Std. C22.2 No.250. IP=65

WARRANTY

Fixture is warranted for three years. Ballast components carry the ballast manufacturer's limited warranty.

Architectural Area Lighting

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DULUX® D/E 4-PIN ECOLOGIC® COMPACT FLUORESCENT LAMPS

Nominal Wattage	Bulb	MOL		Base	Product Number	Ordering Abbreviation	NEMA Generic Designation	Pkg Qty	Avg Rated Life (hrs)	CCT (K)	CRI	Approx Lumens		Symbols & Footnotes
		(in)	(mm)									Initial @25°C/77°F	Mean @35°C/95°F	
26	T (T4)	5.2	124	GX24Q-3	20767	CF26DT/E/827/ECO	CFTR26W/GX24Q/827	50	12000	2700	82	1800	1548	1,2,5,6, 7,12,20
					20995	CF26DT/E/835/ECO/BL/1	CFTR26W/GX24Q/835	50	12000	3500	82	1800	1548	1,2,5,6, 7,12,20
32	T (T4)	5.8	147	GX24Q-3	20768	CF32DT/E/827/ECO	CFTR32W/GX24Q/827	50	12000	2700	82	2400	2064	1,2,5,6, 7,12,18,20

DULUX T/E/IN AMALGAM, 4-PIN ECOLOGIC COMPACT FLUORESCENT LAMPS

For electronic ballast for high and low temperature applications. Lamps have End-of-Lamp Life (EOL) Protection

Nominal Wattage	Bulb	MOL		Base	Product Number	Ordering Abbreviation	NEMA Generic Designation	Pkg Qty	Avg Rated Life (hrs)	CCT (K)	CRI	Approx Lumens		Symbols & Footnotes
		(in)	(mm)									Initial @25°C/77°F	Mean @35°C/95°F	
18	T (T4)	4.4	111	GX24Q-2	20875	CF18DT/E/IN/827/ECO	CFTR18W/GX24Q/827	50	12000	2700	82	1164	1001	1,2,5,6, 7,12,20,21
					20876	CF18DT/E/IN/830/ECO	CFTR18W/GX24Q/830	50	12000	3000	82	1164	1001	1,2,5,6, 7,12,20,21
					20877	CF18DT/E/IN/835/ECO	CFTR18W/GX24Q/835	50	12000	3500	82	1164	1001	1,2,5,6, 7,12,20,21
					20878	CF18DT/E/IN/841/ECO	CFTR18W/GX24Q/841	50	12000	4100	82	1164	1001	1,2,5,6, 7,12,20,21
26	T (T4)	5.0	126	GX24Q-3	20879	CF26DT/E/IN/827/ECO	CFTR26W/GX24Q/827	50	12000	2700	82	1746	1501	1,2,5,6, 7,12,20,21
					20880	CF26DT/E/IN/830/ECO	CFTR26W/GX24Q/830	50	12000	3000	82	1746	1501	1,2,5,6, 7,12,20,21
					20881	CF26DT/E/IN/835/ECO	CFTR26W/GX24Q/835	50	12000	3500	82	1746	1501	1,2,5,6, 7,12,20,21
					20882	CF26DT/E/IN/841/ECO	CFTR26W/GX24Q/841	50	12000	4100	82	1746	1501	1,2,5,6, 7,12,20,21
32	T (T4)	5.6	142	GX24Q-3	20883	CF32DT/E/IN/827/ECO	CFTR32W/GX24Q/827	50	12000	2700	82	2328	2002	1,2,5,6, 7,12,18,20,21
					20884	CF32DT/E/IN/830/ECO	CFTR32W/GX24Q/830	50	12000	3000	82	2328	2002	1,2,5,6, 7,12,18,20,21
					20885	CF32DT/E/IN/835/ECO	CFTR32W/GX24Q/835	50	12000	3500	82	2328	2002	1,2,5,6, 7,12,18,20,21
					20886	CF32DT/E/IN/841/ECO	CFTR32W/GX24Q/841	50	12000	4100	82	2328	2002	1,2,5,6, 7,12,18,20,21
42	T (T4)	6.5	163	GX24Q-4	20887	CF42DT/E/IN/827/ECO	CFTR42W/GX24Q/827	50	12000	2700	82	3104	2670	1,2,5,6, 7,12,18,20,21
					20888	CF42DT/E/IN/830/ECO	CFTR42W/GX24Q/830	50	12000	3000	82	3104	2670	1,2,5,6, 7,12,18,20,21
					20871	CF42DT/E/IN/835/ECO	CFTR42W/GX24Q/835	50	12000	3500	82	3104	2670	1,2,5,6, 7,12,18,20,21
					20890	CF42DT/E/IN/841/ECO	CFTR42W/GX24Q/841	50	12000	4100	82	3104	2670	1,2,5,6, 7,12,18,20,21
57	T (T4)	7.76	197	GX24Q-5	20895	CF57DT/E/IN/827/ECO	CFTR57W/GX24Q/827	50	12000	2700	82	4171	3587	1,2,5,6, 12,18,20,21
					20896	CF57DT/E/IN/830/ECO	CFTR57W/GX24Q/830	50	12000	3000	82	4171	3587	1,2,5,6, 12,18,20,21
					20897	CF57DT/E/IN/835/ECO	CFTR57W/GX24Q/835	50	12000	3500	82	4171	3587	1,2,5,6, 12,18,20,21

COMPACT FLUORESCENT

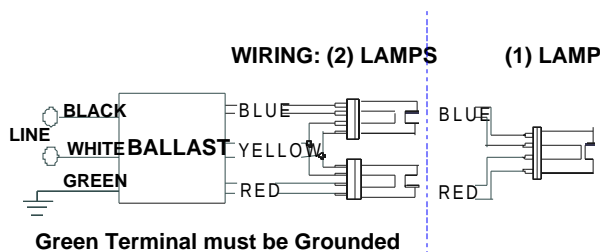
RCF-2S26-H1-LD-QS

Brand Name	AMBISTAR - HPF
Ballast Type	Electronic
Starting Method	Rapid Start
Lamp Connection	Series
Input Voltage	120
Input Frequency	60
Status	Active

Electrical Specifications

Lamp Type	Num. of Lamps	Rated Lamp Watts	Min. Start Temp (°F/C)	Input Current (Amps)	Input Power (ANSI Watts)	Ballast Factor	MAX THD %	Power Factor	MAX Lamp Current Crest Factor	B.E.F.
CFQ26W/G24Q	1	26	0/-18	0.23	27	1.00	10	0.98	1.7	3.70
CFQ26W/G24Q	2	26	0/-18	0.43	51	1.00	10	0.98	1.7	1.96
* CFTR26W/GX24Q	1	26	0/-18	0.24	29	1.10	10	0.98	1.7	3.79
CFTR26W/GX24Q	2	26	0/-18	0.45	54	1.00	10	0.98	1.7	1.85
CFTR32W/GX24Q	1	32	0/-18	0.31	36	0.98	10	0.98	1.7	2.72
CFTR42W/GX24Q	1	42	0/-18	0.38	46	0.98	10	0.98	1.7	2.13

Wiring Diagram

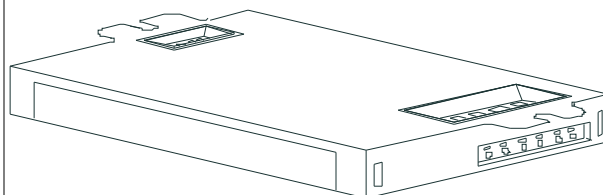


The wiring diagram that appears above is for the lamp type denoted by the asterisk (*)

Standard Lead Length (inches)

	in.	cm.		in.	cm.
Black	0	0	Yellow/Blue		0
White	0	0	Blue/White		0
Blue	0	0	Brown		0
Red	0	0	Orange		0
Yellow	0	0	Orange/Black		0
Gray		0	Black/White		0
Violet		0	Red/White		0

Enclosure



Enclosure Dimensions

OverAll (L)	Width (W)	Height (H)	Mounting (M)
4.98 "	2.4 "	1.0 "	4.6 "
4 49/50	2 2/5	1	4 3/5
12.6 cm	6.1 cm	2.5 cm	11.7 cm

Revised 09/10/2007



Data is based upon tests performed by Philips Lighting Electronics N.A. in a controlled environment and is representative of relative performance. Actual performance can vary depending on operating conditions. Specifications are subject to change without notice. All specifications are nominal unless otherwise noted.

PHILIPS LIGHTING ELECTRONICS N.A.

10275 WEST HIGGINS ROAD · ROSEMONT, IL 60018

Tel: 800-322-2086 · Fax: 888-423-1882 · www.philips.com/advance

Customer Support/Technical Service: 800-372-3331 · OEM Support: 866-915-5886

RCF-2S26-H1-LD-QS	
Brand Name	AMBISTAR - HPF
Ballast Type	Electronic
Starting Method	Rapid Start
Lamp Connection	Series
Input Voltage	120
Input Frequency	60
Status	Active

Electrical Specifications

Notes:

Section I - Physical Characteristics

- 1.1 Ballast shall be physically interchangeable with standard electromagnetic or standard electronic ballasts, where applicable.
- 1.2 Ballast shall be provided with integral leads or poke-in wire trap connectors color coded per ANSI C82.11.

Section II - Performance Requirements

- 2.1 Ballast shall be Rapid Start.
- 2.2 Ballast shall contain auto restart circuitry in order to restart lamps without resetting power
- 2.3 Ballast shall operate from 60 Hz input source of 120V with sustained variations of +/- 10% (voltage and frequency) with no damage to the ballast.
- 2.4 Ballast shall be high frequency electronic type and operate lamps at a frequency above 42 kHz to avoid interference with infrared devices and eliminate visible flicker.
- 2.5 Ballast shall have a Power Factor greater than 0.98 for primary lamp.
- 2.6 Ballast shall have a minimum ballast factor for primary lamp as follows: 0.85 for linear lamps or 1.0 for CFL lamps.
- 2.7 Ballast shall provide for a Lamp Current Crest Factor of 1.7 or less in accordance with lamp manufacturer recommendations.
- 2.8 Ballast input current shall have Total Harmonic Distortion (THD) of less than 20% when operated at nominal line voltage with primary lamp.
- 2.9 Ballast shall have a Class A sound rating.
- 2.10 Ballast shall have a minimum starting temperature for primary lamp as follows: 0°F/-18°C for CFL lamps or 50°F/10°C for standard T12 lamps and 60°F/16°C for energy-saving T12 lamps.
- 2.11 Ballast shall provide Lamp EOL Protection Circuit for CFL lamps.
- 2.12 Ballast shall tolerate sustained open circuit and short circuit output conditions without damage.

Section III - Regulatory Requirements

- 3.1 Ballast shall not contain any Polychlorinated Biphenyl (PCB).
- 3.2 Ballast shall be Underwriters Laboratories (UL) listed, Class P and Type 1 Outdoor; and Canadian Standards Association (CSA) certified where applicable.
- 3.3 Ballast for CFL lamps shall be rated for use in air-handling spaces.
- 3.4 Ballast shall comply with ANSI C62.41 Category A for Transient protection.
- 3.5 Ballast shall comply with ANSI C82.11 where applicable.
- 3.6 Ballast shall comply with the requirements of the Federal Communications Commission (FCC) rules and regulations, Title 47 CFR part 18, Consumer (Class B) for EMI/RFI (conducted and radiated).

Section IV - Other

- 4.1 Ballast shall be manufactured in a factory certified to ISO 9002 Quality System Standards.
- 4.2 Ballast shall carry a three-year warranty from date of manufacture against defects in material or workmanship, including replacement, for operation at a maximum case temperature of 70°C for RELB models or 85°C for RCF models.
- 4.3 Manufacturer shall have a fifteen-year history of producing electronic ballasts for the North American market.
- 4.4 Ballast shall meet the ballast-controlled performance requirements in the ENERGY STAR Program Requirements for Residential Lite Fixtures.

Revised 09/10/2007



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 Tel: 800-322-2086 · Fax: 888-423-1882 · www.philips.com/advance
 Customer Support/Technical Service: 800-372-3331 · OEM Support: 866-915-5886

Features

- Astronomical time clock including day, date, sunrise, sunset functions
- Scene selection and programming
- Channel level raise and lower
- Task / sequence programming
- Scene and channel naming
- Designed and manufactured to ISO9001:2000 standards



Overview

Surface mounting electronic time clock with astronomical facility and LCD display. Fully programmable using iCANtools™ for daily or date specific events. Connects to iCAN™ network. Keyboard allows scene selection and event functions to be enabled / disabled.

The iCAN TimeClock enables the user to have the following functions; astronomical time clock, scene programming and scene selection into one simple control panel.

Catalog#	Project
Prepared by	Date

Technical Specification

Mechanical

Weight: 1 kg

Operating temperature: +2°C to +40°C

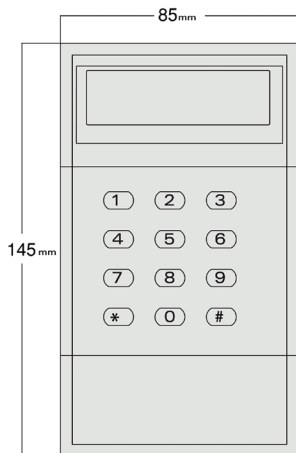
Note: All enclosures must be adequately ventilated

Max storage temperature: +60°C

Humidity: +5 to 95% non-condensing

Environmental protection: IP20

Dimensions



Electrical

Supply:

+12VDC (via iCANnet™ cable)

Termination:

iCANnet CAT5: Screw terminals within two part connectors, able to accept 1.5mm² stranded and solid wire.

Programming and configuration

Programming via iCANtools.

Functionality

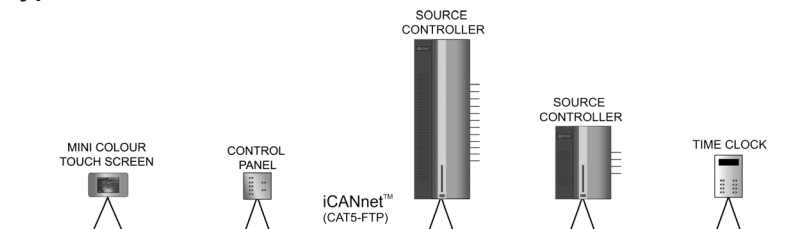
- Select scenes
- Scene programming
- Channel level raise and lower
- Scene and channel naming
- Task / sequence programming
- Time clock
- Date range - recurring events
- One shot events
- Leap year
- Daylight saving setting
- Astronomical timeclock with offset facility
- Date / day omission
- Photocell / motion sensor interaction
- Diagnostics - network

Memory:

FLASH memory to be able to upgrade firmware

EEPROM for 128 scene memory

Typical Schematic



Voltage

PELV

Limited current/ Limited voltage
(wire as Class 2 wiring)



Standards



This product conforms to one of more of the above standards. Please contact your local Cooper Controls representative for further information

www.coopercontrol.com
203 Cooper Circle,
Peachtree City, GA 30269
P: 800-553-3879
F: 800-954-7016

iCOLOR COVE EC


The iColor® Cove EC fixture is a Chromasic-driven, low-profile light in the iColor Series, and is designed for accent, perimeter, or cove lighting where lower light intensity and lower costs are desired. iColor Cove EC offers an economical way to bring subtle color-changing light and lighting effects to alcoves, task areas, accent areas, and other tight spaces.

iColor Cove EC is driven by the Color Kinetics® Chromasic® chip. Chromasic is a microchip that integrates power, communication, and control that enables the iColor Cove EC system to lower the cost of digital LED control, making it an affordable alternative for edge and alcove lighting.

The sleek, low-profile design of the iColor Cove EC allows for mounting in small areas, and the easy through-hole mounting feature and in-line power and data connection reduces the installation time. A mounting track is available for linear installations. Each fixture projects a soft-edge strip of light at a 120° by 120° beam angle and comes in fixed lengths of seven (7) and twelve (12) inches.

Power and data are daisy chained from fixture to fixture simplifying installation and making curves and complicated geometry easy to install. Power and data are supplied by PDS-60ca 24V and sPDS-60ca 24V. Both are dedicated Color Kinetics power/data supplies which is available with Ethernet control and DMX512 control. The PDS-60ca 24V is also available with pre-programmed effects. Each power/data supply supports thirty 7-inch or 12-inch fixtures and the compact size allows for discrete installations.

iCOLOR COVE EC SPECIFICATIONS

COLOR RANGE	64 billion (32-bit) additive RGB colors; continuously variable intensity output range
BEAM ANGLE	120° by 120°
SOURCE	15 LEDs (12-inch), 9 LEDs (7-inch) Red, Green, and Blue
HOUSING	Rigid plastic housing
LISTINGS	UL/cUL, CE certified, pending

COMMUNICATION SPECIFICATIONS

DATA INTERFACE	Color Kinetics Chromasic data interface system
CONTROL	Ethernet, DMX512 or stand-alone

ELECTRICAL SPECIFICATIONS (LIGHTS)

POWER REQUIREMENTS	24VDC
POWER CONSUMPTION	2W Max. at full intensity (full RGB)
POWER SUPPLY	Color Kinetics PDS-60ca 24V (Item # 109-000016-00/01/02) and sPDS-60ca 24V DMX/Ethernet (Item # 109-000021-02)

ENVIRONMENTAL SPECIFICATIONS

TEMPERATURE RANGE	-4°F to 122°F (-20°C to 50°C) based on testing of specific product
--------------------------	--

LED SOURCE LIFE

In traditional lamp sources, lifetime is defined as the point at which 50% of the lamps fail. This is also termed Mean Time Between Failure [MTBF]. LEDs are semiconductor devices and have a much longer MTBF than conventional sources. However, MTBF is not the only consideration in determining useful life. Color Kinetics uses the concept of useful light output for rating source lifetimes. Like traditional sources, LED output degrades over time (lumen depreciation) and this is the metric for SSL lifetime.

LED lumen depreciation is affected by numerous environmental conditions such as ambient temperature, humidity, and ventilation. Lumen depreciation is also affected by means of control, thermal management, current levels, and a host of other electrical design considerations. Color Kinetics systems are expertly engineered to optimize LED life when used under normal operating conditions. Lumen depreciation information is based on LED manufacturers' source life data as well as other third party testing. Low temperatures and controlled effects have a beneficial effect on lumen depreciation. Overall system lifetime could vary substantially based on usage and the environment in which the system is installed.

Temperature and effects will affect lifetime. Color Kinetics rates product lifetime using lumen depreciation to 50% of original light output. When the fixture is running at room temperature using a color wash effect, the lifetime is in the range of 30,000-50,000 hours. This is based on LED manufacturers' test data. For more detailed information on source life, please see www.colorkinetics.com/lifetime.

OPTIBIN®

There are inherent variations in the fabrication processes of all semiconductor materials. For LEDs, this variance results in differences in the color and intensity of light output as well as electrical characteristics. Due to these differences, LED manufacturers sort production into "bins," but insuring the availability of a single bin is very difficult. To minimize this issue and achieve optimal color consistency in its products, Color Kinetics has developed and uses a proprietary technology called Optibin. Optibin is an advanced production binning optimization process that minimizes the effects of LED variance for the best possible output uniformity in the final product. Color Kinetics Optibin technology gives the most consistent control of color and intensity from product to product.

CHROMACORE®
BY COLOR KINETICS

CHROMASIC®
BY COLOR KINETICS

OPTIBIN®
BY COLOR KINETICS

ITEM# 101-000022-00 (12-inch)
101-000022-01 (7-inch)

This product is protected by one or more of the following U.S. Patents and their foreign counterparts: 6,016,038, 6,150,774, 6,292,901, 6,340,868, 6,777,891, 6,788,011, 6,806,659, 6,969,954, and 6,975,079. Other patents pending.

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All other brand or product names are trademarks or registered trademarks of their respective owners.

BRO126 Rev 06

Specifications subject to change without notice. Refer to www.colorkinetics.com for the most recent version.

iCOLOR COVE EC — 7”

PHOTOMETRIC PERFORMANCE

SOURCE SPECIFICATIONS

Optics: Clear polycarbonate
 Source: 9 LEDs (3 Red, 3 Green, 3 Blue)
 Beam Angle: 120° x 120° (at 50% of peak illuminance)
 Distribution: Symmetric direct illumination
 CCT: Adjustable 1,000–10,000K
 CRI: Not measurable (CIE 13.3-1995)

ILLUMINANCE DISTRIBUTION

1.5'/0.5m					
0.2	0.3	0.4	0.4	0.3	0.2
2.2	3.2	4.3	4.3	3.2	2.2
0.3	0.6	0.9	0.9	0.6	0.3
3.2	6.5	9.7	9.7	6.5	3.2
0.4	0.9	1.6	1.6	0.9	0.4
4.3	9.7	17.2	17.2	9.7	4.3
0.4	0.9	1.6	1.6	0.9	0.4
4.3	9.7	17.2	17.2	9.7	4.3
0.3	0.6	0.9	0.9	0.6	0.3
3.2	6.5	9.7	9.7	6.5	3.2
0.2	0.3	0.4	0.4	0.3	0.2
2.2	3.2	4.3	4.3	3.2	2.2
1.5'/0.5m					

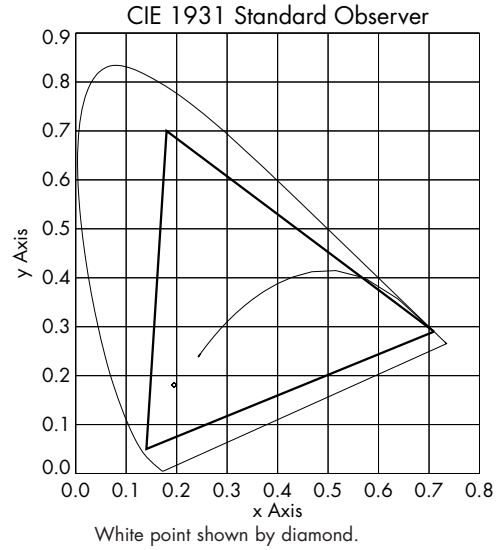
Units: Footcandles/Lux
 Measured on: White
 Distance from surface: 1'/.3m (from center of grid)
 Multipliers: 0.41 Red, 0.23 Green, 0.36 Blue

ILLUMINANCE

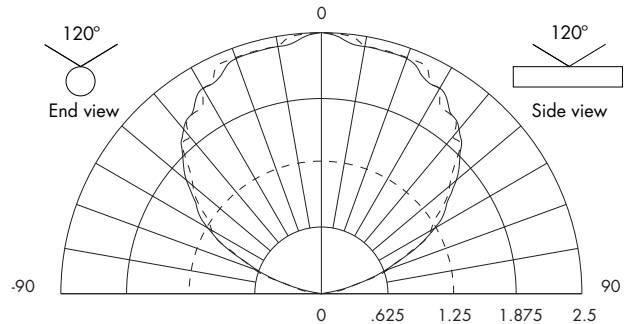
COLOR	3'	6'	9'	15'
	1m	2m	3m	5m
WHITE	0.3 3.0	0.1 0.7	0.0 0.3	0.0 0.1
RED	0.1 1.2	0.0 0.3	0.0 0.1	0.0 0.0
GREEN	0.1 0.7	0.0 0.2	0.0 0.1	0.0 0.0
BLUE	0.1 1.1	0.0 0.3	0.0 0.1	0.0 0.0

Measured in Footcandles/Lux on axis.

GAMUT



CANDLE POWER DISTRIBUTION



Measured on: White
 Beam center: 2.5 cd
 Thin dashed lined: Indicates 50% of peak
 Multipliers: 0.41 Red, 0.23 Green, 0.36 Blue

TYPICAL LIGHT OUTPUT

COLOR	TOTAL OUTPUT (LUMENS)	POWER (WATTS)	EFFICACY (lm/w)
WHITE	7.0	2.0	3.5
RED	2.8	0.8	3.7
GREEN	1.6	0.8	2.1
BLUE	2.5	0.8	3.3

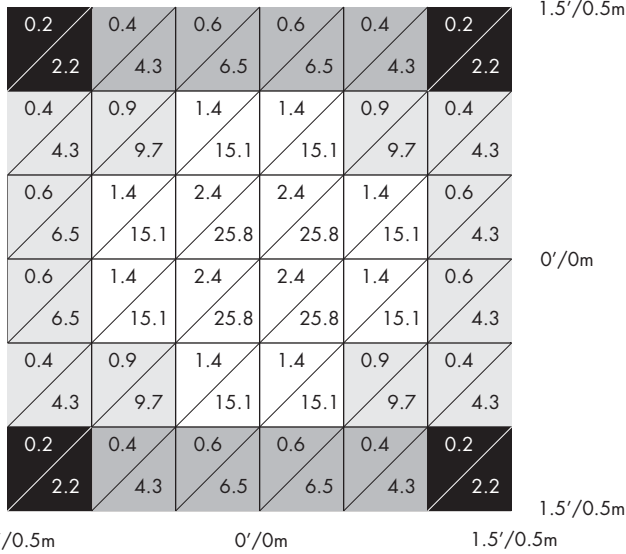
iCOLOR COVE EC — 12”

PHOTOMETRIC PERFORMANCE

SOURCE SPECIFICATIONS

Optics: Clear polycarbonate
 Source: 15 LEDs (5 Red, 5 Green, 5 Blue)
 Beam Angle: 120° x 120° (at 50% of peak illuminance)
 Distribution: Symmetric direct illumination
 CCT: Adjustable 1,000–10,000K
 CRI: Not measurable (CIE 13.3-1995)

ILLUMINANCE DISTRIBUTION



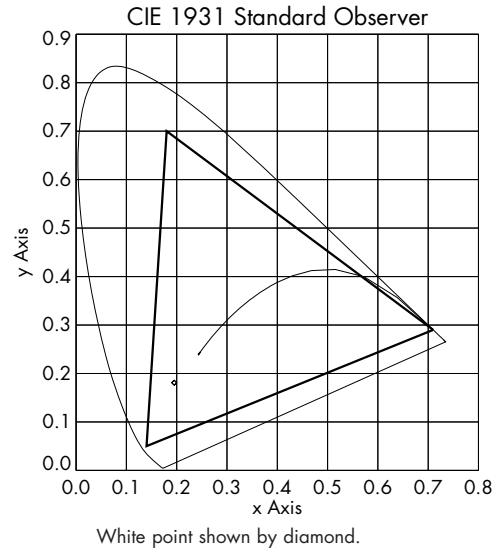
Units: Footcandles/Lux
 Measured on: White
 Distance from surface: 1'/.3m (from center of grid)
 Multipliers: 0.44 Red, 0.19 Green, 0.38 Blue

ILLUMINANCE

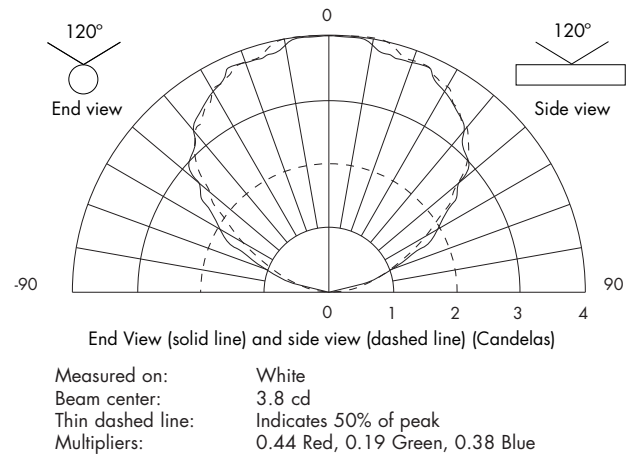
COLOR	3'	6'	9'	15'
	1m	2m	3m	5m
WHITE	0.4 4.5	0.1 1.1	0.0 0.5	0.0 0.2
RED	0.2 2.0	0.0 0.5	0.0 0.2	0.0 0.1
GREEN	0.1 0.9	0.0 0.2	0.0 0.1	0.0 0.0
BLUE	0.2 1.7	0.0 0.4	0.0 0.2	0.0 0.1

Measured in Footcandles/Lux on axis.

GAMUT



CANDLE POWER DISTRIBUTION



TYPICAL LIGHT OUTPUT

COLOR	TOTAL OUTPUT (LUMENS)	POWER (WATTS)	EFFICACY (lm/w)
WHITE	11.0	2.0	5.6
RED	4.8	0.8	6.2
GREEN	2.1	0.8	2.7
BLUE	4.1	0.8	5.4

sPDS-60ca 24V



Color Kinetics® sPDS-60ca 24V intelligent, indoor, power/data supply is specifically designed for Color Kinetics 24 volt Chromasic® fixtures. sPDS-60ca 24V is a robust 62W power source with a DMX interface. It is used for installations using a DMX controller such as iPlayer 2, ColorDial, or a third party DMX controller. The DMX data driver conditions the supplied data to a format compatible with the fixtures. The integration of power and data simplifies wiring installation, and the selection of control configurations expands the versatility of the applications.

Push buttons on the front panel of sPDS-60ca 24V allow you to select the base address for each power supply, thus eliminating the need for additional addressing tools. After the base address has been selected, each light can be sequentially addressed or all lights can be set to a single address. All functions can be monitored from the LED display located on the front panel.

sPDS-60ca 24V is housed in a compact enclosure designed for use in dry locations and complies with National Electrical Code (NEC) requirements. The data drive circuitry has been specifically designed with short circuit protection to prevent failures due to incorrect wiring or installation.

sPDS-60ca 24V automatically accommodates supply voltages ranging from 100VAC to 240VAC using a standard IEC cable. All product and data connections are made to the external panels to shorten installation time. sPDS-60ca 24V allows the DMX data to be daisy-chained through the RJ45 terminals from one supply to the next.

FEATURES

- Economical
- Compact size
- Ease of installation
- DMX ready
- Robust 62W power source
- Indoor rated

sPDS-60ca 24V SPECIFICATIONS

POWER INPUT	100VAC to 240VAC auto ranging (50Hz–60Hz),
MAX CURRENT	1.7A at 100V, 1.5A at 120V, .75A at 240V Power factor correction (PFC)
POWER OUTPUT	24VDC (62W Max.)
HEAT DISSIPATION	25 percent of total power input
AMBIENT OPERATING TEMP	14°F to 122°F (-10°C to 50°C)
HOUSING	Overall dimensions: 8.8" (22.4 cm) X 4" (10.2 cm) X 2" (5.1 cm) Weight: 2.0 lbs (907 g)
CONNECTORS	Data: RJ45 input and output connectors Power: 4-pin output connectors, IES power connector
DATA INPUT INTERFACE	Color Kinetics DMX controllers or DMX512 compatible
DATA OUTPUT INTERFACE	Chromasic 24V
LISTINGS	UL/C-UL, CE



ITEM# 109-000021-00 (DMX)

FOR USE UNDER U.S. PATENTS 6,016,038, 6,150,774, 6,340,868,
6,608,453, 6,777,891, 6,788,011, AND 6,806,659.

OTHER PATENTS PENDING.

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BR0167 Rev 00

iColor Tile FX 2:2



Lens sold separately

iColor® Tile FX 2:2 is a Chromacore®-powered colored light panel that can be individually or collectively controlled to create stunning light art or accent lighting in a variety of surface mounted or recessed applications. iColor Tile FX 2:2 is a base unit for indoor applications and is ideal for wall and ceiling installations. Use iColor Tile FX 2:2 with an iColor Tile FX 2:2 Lens (sold separately) for an elegant, finished appearance, or install the base unit behind a custom panel. The iColor Tile 2:2 Lens is an impact-resistant, translucent white diffuser that provides seamless, uniform optical effects across its entire surface.

Each iColor Tile FX 2:2 panel has 144 individually addressable nodes, each driven by Chromasic® technology that integrates power, communication, and control to enable an infinite variety of effects. The ability to address each node individually provides a level of fine-grained control and intricacy never before available for show authoring. Each iColor Tile FX 2:2 has a 20 ft (6 m) leader cable from the power / data supply to the panel.

iColor Tile FX 2:2 receives power and data from a PDS-60ca 7.5V or sPDS-480ca 7.5V power / data supply. The PDS-60ca 7.5V is available with Ethernet / DMX512 control or a pre-programmed effects version. The sPDS-480ca 7.5V is an Ethernet-only power / data supply.

SPECIFICATIONS

COLOR RANGE	64 billion additive RGB colors; continuously variable intensity output range
SOURCE	432 LEDs packaged in 144 tri-color Red, Green, and Blue nodes
SOURCE LIFE	50,000 hours L ₅₀ @ 50°C*
HOUSING	Sheet metal
DIMENSIONS	23.5 x 23.5 x 4.125 in (597 x 597 x 105 mm) with lens
WEIGHT	22.5 lb (10.2 kg) Tile 5 lb (2.3 kg) Lens
TEMPERATURE	-4° – 122° F (-20° – 50° C)
HUMIDITY	0 – 95%, non-condensing
ENVIRONMENT	Indoor / Dry Location
LENS	Impact resistant copolyester with carbon steel mounting hardware.
CERTIFICATION	UL / cUL, CE
DATA INTERFACE	Philips full-line of controllers
CONTROL	Ethernet, DMX512, or Preprogrammed
CONNECTOR	3-wire, 18 AWG power / data cable
INPUT VOLTAGE	7.5 VDC
POWER USAGE	62 W maximum at full intensity

CHROMACORE® CK TECHNOLOGY | OPTIBIN® CK TECHNOLOGY | CHROMASIC® CK TECHNOLOGY



* L₅₀ = 50% maintenance of Lumen Output (when light output drops below 50% of initial output).
Complies with LM-79-08.

iColor Tile FX 2:2 Item # 101-000019-00

iColor Tile FX 2:2 Lens Item # 101-000044-00

POWER / DATA SUPPLY	PDS-60ca 7.5V	Item # 109-000015-00 (pre-programmed)
		Item # 109-000015-03 (DMX / Ethernet)
	sPDS-480ca 7.5V	Item # 109-000022-00 (Ethernet)

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BRO-000125 Rev 07

Specifications subject to change without notice.
Refer to www.colorkinetics.com for the most recent version.

Philips Solid-State Lighting Solutions, Inc.
3 Burlington Woods Drive
Burlington, Massachusetts 01803 USA
Tel 888.Full.RGB
Tel 617.423.9999
Fax 617.423.9998
www.colorkinetics.com

PHILIPS

iCOLOR TILE FX 2:2

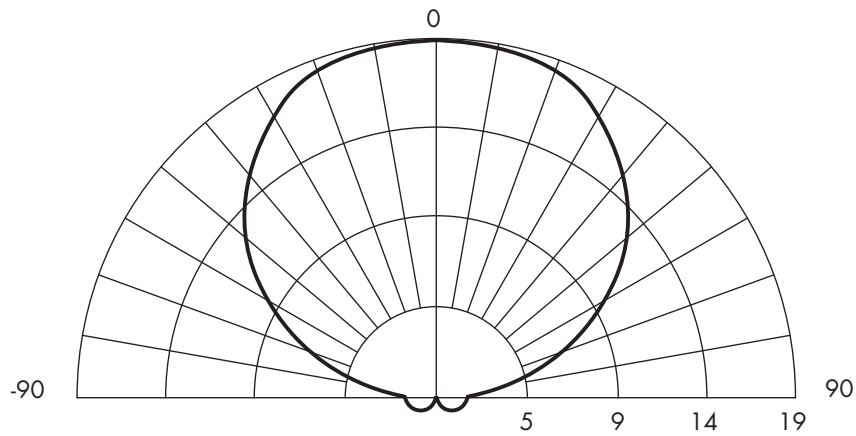
PHOTOMETRIC PERFORMANCE

Photometric data is based on test results from an independent testing lab.

SOURCE SPECIFICATIONS

Lens:	White copolyester diffuser
Source:	144 Tri-color LED nodes
Beam Angle:	120° (50% maximum)
Distribution:	Symmetric direct illumination
CCT:	Adjustable 1,000–10,000K
CRI:	Not measurable (CIE 13.3-1995)

CANDELA DISTRIBUTION



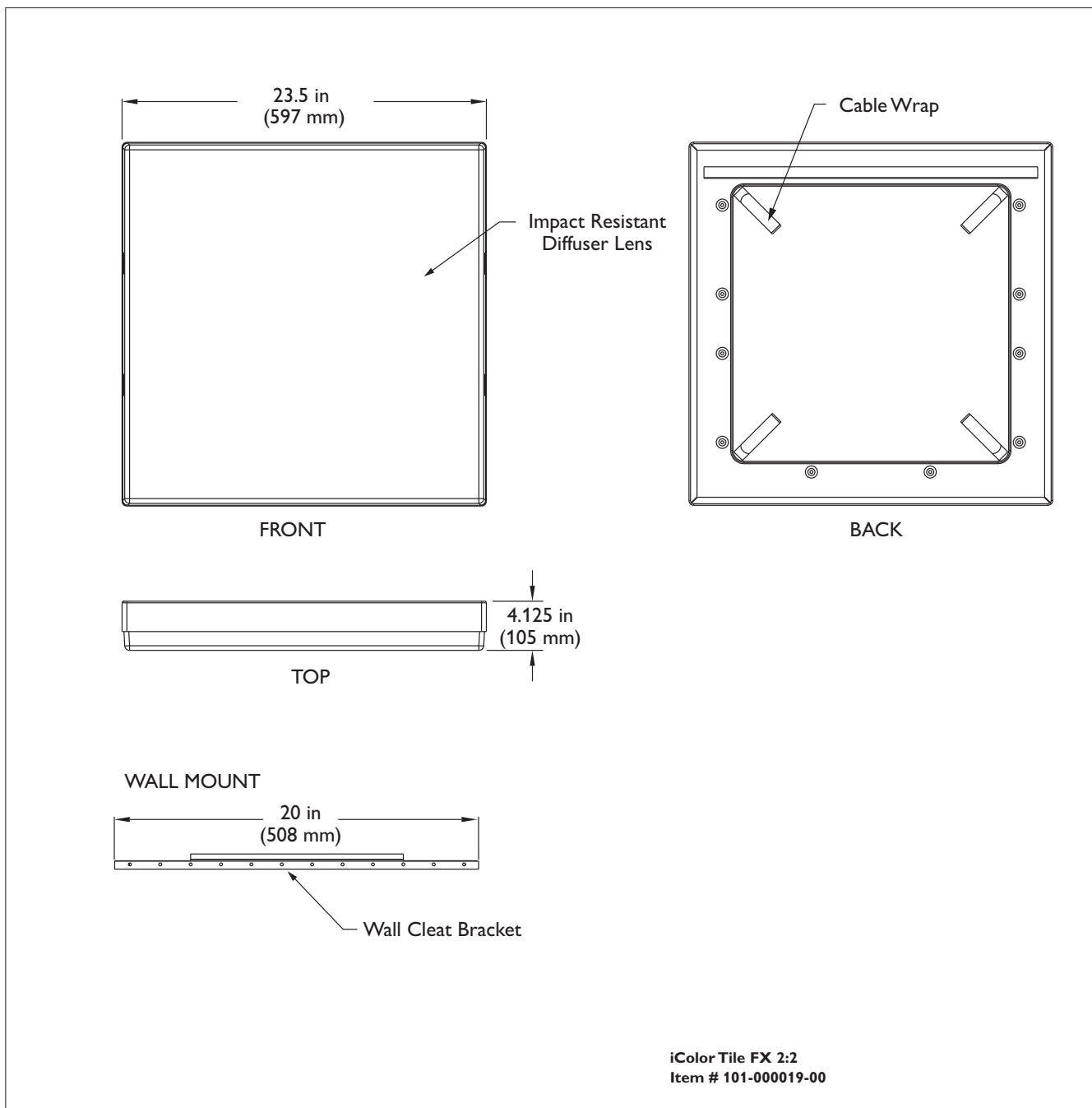
LUMINANCE DATA IN CANDELA/SQ METER

Angle in Vertical	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	51	50	51
55	49	48	49
65	47	47	47
75	40	40	40
85	33	33	33

Note: iColor Tile FX is a direct view product. As a result, the measurements are luminance-based. Units are candela/meters² (nits).

iCOLOR TILE FX 2:2

Physical Dimensions



OPTIBIN®

There are inherent variations in the fabrication processes of all semiconductor materials. For LEDs, this variance results in differences in the color and intensity of light output as well as electrical characteristics. Due to these differences, LED manufacturers sort production into "bins," but insuring the availability of a single bin is very difficult. To minimize this issue and achieve optimal color consistency in its products, Philips Solid-State Lighting Solutions has developed and uses a proprietary technology called Optibin. Optibin is an advanced production binning optimization process that minimizes the effects of LED variance for the best possible output uniformity in the final product. Optibin technology gives the most consistent control of color and intensity from product to product.



Date: _____ Type: _____

Firm Name: _____

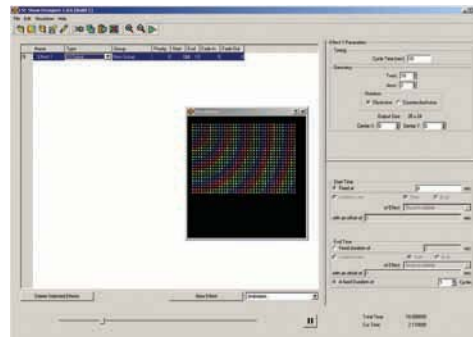
Project: _____

Light System Manager

Versatile control and authoring for large-scale lighting installations

Optimized for medium and large-scale LED lighting installations, Light System Manager controller (LSM) is an integrated hardware and software solution comprising Light System Engine (LSE) controller hardware and Light System Composer (LSC) creative design software. With support for intricately designed installations containing thousands of LED nodes, Light System Manager offers the versatility to manage wide-ranging architectural, entertainment, and retail lighting environments.

- Easy to use — Featuring Ethernet-based control and automatic lighting system discovery, Light System Manager dramatically simplifies installation.
- Hardware support for medium and large environments — The Light System Engine controller processes light output data for up to 10,000 LED nodes, or 5,000 individual fixtures.



- Packaged with Light System Composer — Light System Composer software allows you to create and manage dynamic light shows with fully customizable effects, multi-layer editing, and unique color palettes. You can design shows with single or multiple color-changing effects, animated images, geometric patterns, and more.

- Versatile zone usage — Configure and control multiple playback zones, each with up to unique light show assignments. Light System Manager allows zone control of both indoor and outdoor fixtures within a single installation.
- Simplified control access — Designed for use with LSM, Ethernet Controller Keypad is a wall-mounted triggering device that controls light shows and fixture brightness at the touch of a button. LSM supports up to 10 keypads within a single lighting installation.
- Automatic playback control — Configure show scheduling based on a specific date, a day of the week, weekdays, weekends, or an astronomical event, such as sunrise or sunset.
- Support for IntelliWhite® lighting fixtures — Light System Manager offers visual effects with color temperature and intensity settings designed specifically for IntelliWhite white light fixtures.
- Supports the optional AuxBox expansion device — AuxBox automatically triggers up to eight light shows using any remote triggering device with a dry-contact closure. Via the AuxBox, you can trigger light shows by motion sensors, 3rd party control or sensor systems, and more.

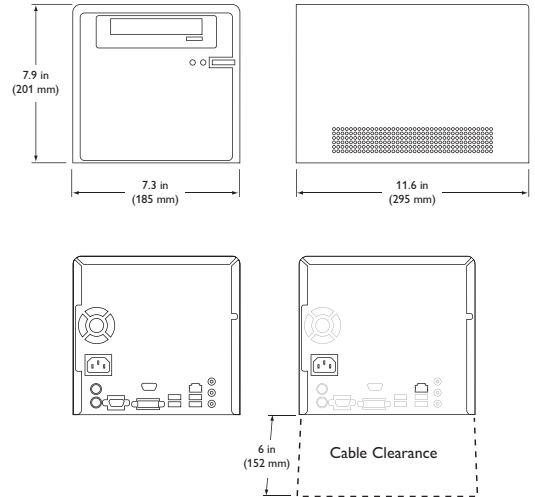
For detailed product information, please refer to the Light System Manager Product Guide at: www.colorkinetics.com/lsc/controllers/lsm/

PHILIPS

Specifications

Due to continuous improvements and innovations, specifications may change without notice

Item	Specification	Details
Electrical	Input Voltage	100 – 220 VAC, auto-switching
Capability	Supported LED nodes or fixtures	Up to 10,000 LED nodes, or 5,000 individual fixtures*
	Network Data	KiNET™ Ethernet protocol via standard Ethernet switch**
	Playback Output	Light shows containing one or more visual effects
Physical	Dimensions (Height x Width x Depth)	7.9 x 7.3 x 11.6 in (201 x 185 x 295 mm)
	Weight	9.3 lb (4.2 kg)
	Operating Temperature	32 – 95° F (0° – 35° C)
	Operating Humidity	0 – 90%, relative humidity, non-condensing
Certification and Safety	Certification	FCC, CE, ETL, TUV, C-Tick, BSMI
	Environment	Indoor / Dry location



* LSE supports up to 10,000 Chromasic® nodes, or up to 5,000 individual Chromacore® fixtures.

** Use PoE (Power over Ethernet) compatible Ethernet switches, or PoE injectors, when installing a lighting system containing one or more Ethernet Controller Keypads.

Software Requirements

System Requirements	Specification	PC	Mac
OS		Windows® XP / Vista	Mac OS X 10.4.9 or greater
Hardware	Optical Drive	CD-ROM or DVD drive	CD-ROM or DVD drive
	Memory	256 MB RAM	256 MB RAM
	Disk space	10 MB free disk space	10 MB free disk space

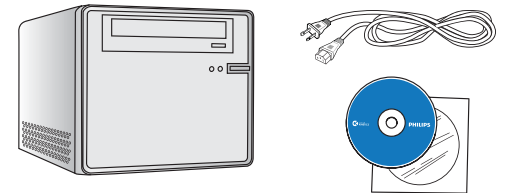
Light System Manager and Accessories

Item	Item Number	Philips 12NC
Light System Manager	103-000015-02	910503700221

Ethernet Controller Keypad	103-000023-00	910503700326
PoE Injector (North America Power Cord)	109-000029-00	910503700383
PoE Injector (Europe Power Cord)	109-000029-01	910503700384
AuxBox	103-000021-00	910503700224

Use Item Number when ordering in North America.

For detailed product information, please refer to the Light System Manager Product Guide at: www.colorkinetics.com/lsm/controllers/lsm/



Included in the Box

Light System Manager
Power cable
Software CD

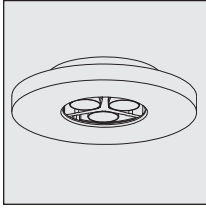


Philips Color Kinetics
 3 Burlington Woods Drive
 Burlington, Massachusetts 01803 USA
 Tel 888.Full.RGB
 Tel 617.423.9999
 Fax 617.423.9998
www.colorkinetics.com

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DAS-000035-01 R00 03-09

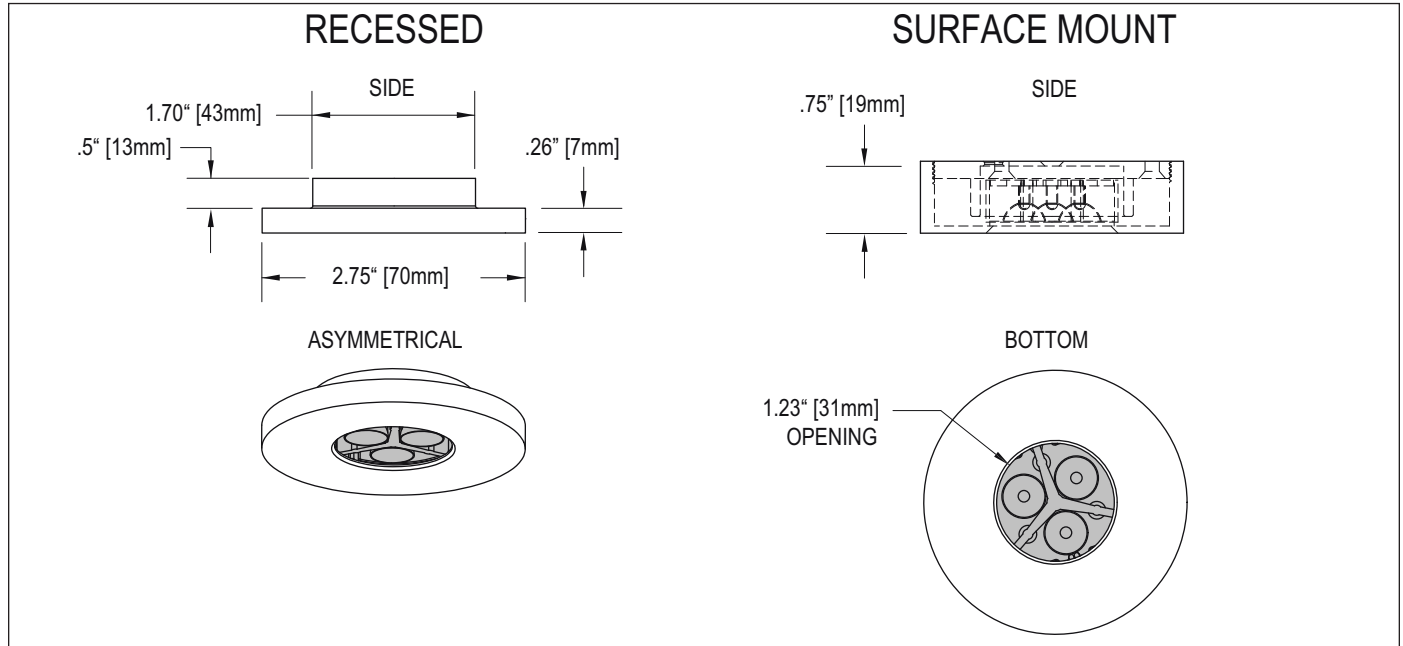
PUKLED™
 LPK-ALED WITH HIDDEN FASTENERS



**PROVISIONAL
 PRODUCT SPECIFICATION**

Cat. No.	Description
LPK-ALED-*	12VAC PukLED with hidden fasteners
LPK-ALED-SM-*	12VAC PukLED with hidden fasteners for surface mount
LPK-ALED-WET-*	12VAC PukLED with hidden fasteners for wet location

* - Specify A (Clear Anodized Aluminum); B (Black Anodized Aluminum); W (Matte White)



GENERAL DESCRIPTION

Low voltage, small scale, white light LED luminaire without visible fasteners for concealed mounting suitable for interior and exterior dry and damp locations. 3300°K standard color temperature, optional cool white 4700°K available. Will accept one effects element in addition to a color gel with a soft focus lens standard.

*Lens is sealed on wet location fixtures.

MOUNTING

May be recessed into a 1.750" (44.45mm) diameter hole in a .75" (19mm) thick panel. #4 Phillips flathead wood screws provided. Surface Mount version available for non-recess applications.

MATERIAL

Fixture body in machined from aluminum alloy.

FINISH

Matte White, Clear Anodized, or Black Anodized.

LABEL

ETL Listed
 IP65
 CE

ELECTRICAL

350ma, 3.2w fixture is prewired with 18 AWG 10' (3m) lead. Maximum recommended run length is 30 feet with 18 AWG wire (consult factory for custom lengths).

To be powered by PSA-60-12H Hardwire (Dimmable) or PSA-60-12P Plug-In or any class II 12VAC power supply. (*Power supply must be ordered separately*). Up to 18 fixtures may be powered by PSA-60-12H, PSA-60-12P in conjunction with optional PSA-DB distribution box, or any 60w Class II 12VAC power supply in conjunction with optional PSA-DB distribution box.

ACCESSORIES

Trim may be accessorized with one effects device: Clear Glass Lens (CGL-5), Soft Focus Lens (SFL-5), Warm Tone Lens (WTL-5), Spread Glass Lens (SGL-5), and Honeycomb Louvre (HCL-5). Optional color gels can be used in combination with other effects devices.

WARRANTY

Manufacturer's one year warranty of product is conditional upon use of manufacturer supplied power supply.

**LUCIFER
 LIGHTING COMPANY**

3750 IH35 North
 San Antonio, TX 78219
 Phone: 210 227-7329
 Fax: 210 227-4967
 luciferlighting.com


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As part of its policy of continuous research and product development, the Company reserves the right to change or withdraw specifications without prior notice.

MT615 SERIES • 120/277V • T6



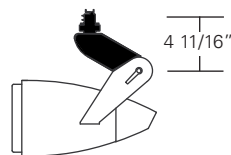
This breakthrough design delivers focused, intense light over exceptionally long distances, making it ideal for large spaces requiring long, focused throws.

- Designed for the extremely efficient 150 watt T6 Ceramic Metal Halide lamp with G12 base
- Can be configured for use on 120V or 277V systems
- High strength die cast aluminum construction
- Ratchet handle for vertical focusing and self-locking swivel for horizontal focusing
- On/off safety switch (on most mounting types)
- Accessory cartridge front holds up to three size-C LSI filters and accessories while controlling spill light and glare
- Computer designed specular reflector
- Rear relamping for accurate focus maintenance
- Integral Pyrex safety shield
- Extruded aluminum ballast housing with integral 120V or 277V thermally protected electronic ballast for 150 watt Metal Halide lamp. (9 1/16" H x 5 3/4" W x 2 5/8" D)
- Finishes: LSI Black, White, Silver and Graphite
- Fixture weight: 8.5 LB
-  IBEW

MOUNTING OPTIONS

MT615-00

Lexan Fitting for 1 and 2 circuit LSI Track. With on/off switch.

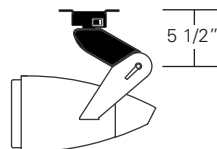


MT615-00F

Same as above, with fuse.

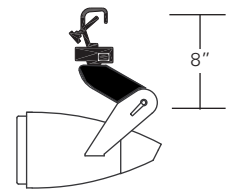
MT615-2G

Universal fitting for Unistrut Systems and any screw or bolt-up applications. With switch, 6-foot 3-wire grounding cord and plug.



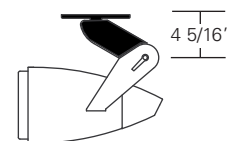
MT615-3G

C-clamp for pipes from 5/8" to 2" O.D. With switch, 6-foot 3-wire grounding cord and plug.



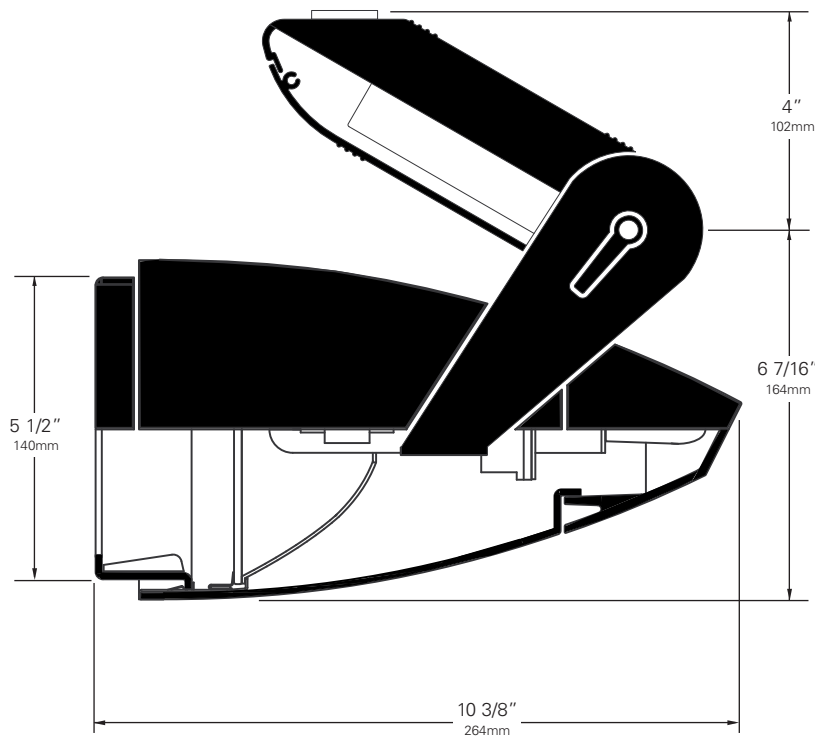
MT615-5A

Canopy for permanent mounting on standard 4" octagonal outlet box.



Other Options (Consult Factory):

- Stems, specify length
- Custom color, RAL palette



ORDERING INFORMATION

1. Select your **Mounting Option**.
 2. If a 277V unit is required, add **V** before the unit number.
 3. Choose other fixture **Options** (add suffix):
 - For Coiled Cord, add **CC**

Coiled Cord is 18/3 105°C, 18" retracted, 6 foot extended. White fixtures are supplied with white cord, all other finishes are supplied with black cord. Available only with **2G, 3G** and **4G** mounting options. (When a coiled cord is not specified, a straight cord is provided.)
 4. Choose a **Finish** for your fixture:
 Black (**B**) White (**W**) Silver (**S**) Graphite (**G**)
- Example: **V MT615** — **2G CC B**
277 VOLT FIXTURE FITTING COILED CORD FINISH
- Blue fields are optional. Leave blank if not required.
5. Don't forget your **Accessories!**
 LSI features the widest range of accessories in the industry to help you modify the light's intensity, color, texture and pattern.

T6 LAMPS		
Watts	Initial Lumens	
150	14000	CDM150/T6/830
150	14000	CMH150/T/U/830/G12

[Click for detailed photometrics](#)

BALLAST TYPE (Electronic)	
ANSI Specification	M142
Maximum Input Current	120/1.14A, 277/.61A
Input Power	120/168W, 277/168W
Power Factor	>95%
THD	<10%, Nominal 6%

ACCESSORIES



Glass Color Filters C
 Selection of 95 permanent rimmed dichroic, and rimmed and slotted standard colors.

- Other accessories:**
- Louver C
 - Hood CMT
 - Hood Sparkle CMT
 - Cross Baffle CMT
 - Delta Baffle CMT
 - Spread Lenses C990, C992, C995, C996
 - Beam Softener C998
 - Light Blocking Screens C801S, C802S, C803S
 - OPTIVEX™ UV Filter C962

[Click for complete accessories and descriptions](#)





MasterColor CDM-T 150W/830 T6 1CT

Product family description
Range of single-ended T6 high-efficiency ceramic metal halide lamps with a stable color over lifetime and a crisp, sparkling light.

Features / Benefits

- Excellent color rendering.
- Superior color stability over life within $\pm 200\text{K}$.
- Lamp to lamp color consistency over life.
- Higher lumen maintenance than standard metal halide.
- Warm (3K) or fresh white (4K) color impression.
- High lamp efficacy (up to 93 lumens per watt) for energy saving and low heat.
- Universal operating position.
- Compact lamp dimensions for high beam intensities.
- FadeBlock for reduced fading risks.
- No shut off required in 24-hour-a-day/7-day-a-week operations (relamp fixtures at or before the end of rated life).
- Long lamp life compared to incandescent and halogen lamps.

Applications

- Accent and General lighting in retail, offices and public buildings. Decorative outdoor: floodlighting and pedestrian areas.

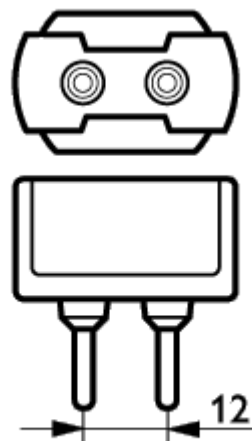
Notes

- Requires a ballast specified or approved for Philips Metal Halide lamp or one designed to the indicated ANSI Standard. A pulse ignitor is required. Sockets and wiring must withstand starting pulse. (391)
- Supply volts must be $\pm 5\%$ of rated ballast line volts for reactor type and $\pm 10\%$ for CWA or electronic ballasts. (392)
- UV filtered design (FadeBlock™). (396)
- Operate only on thermally protected ballasts (397)
- MasterColor® Metal Halide Lamps are not recommended for use on dimmers and are not warranted if used on dimmer systems. (401)
- Rated average life is the life obtained, on the average, from large representative groups of lamps in laboratory tests under controlled conditions at 10 or more operating hours per start. It is based on survival of at least 50% of the lamps and allows for individual lamps or groups of lamps to vary considerably from the average. For lamps with a rated average life of 24,000 hours, life is based on survival of 67% of the lamps. (351)
- Approximate lumen values listed are for vertical operation of the lamp. (352)
- Means Lumens is the approximate lumen output at 40% of lamp rated average life. (353)
- Heat resisting glass bulb.

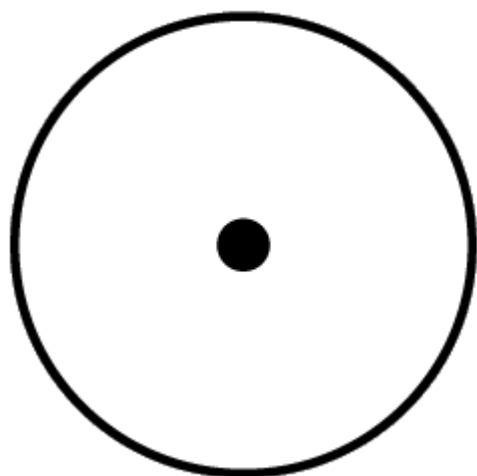
Product data	
Product Number	232728
Full product name	MasterColor CDM-T 150W/830 T6 1CT
Ordering Code	232728
Pack type	1 Lamp in a Folding Carton
Pieces per Sku	1
Skus/Case	12
Pack UPC	046677232726
EAN2US	
Case Bar Code	50046677232721
Successor Product number	
Base	G12
Bulb	T6 [Diameter: 6/8 inch /19mm]
Bulb Finish	Clear
Operating Position	Universal [Any or Universal (U)]
Packing Type	1CT [1 Lamp in a Folding Carton]
Packing Configuration	12
Ordering Code	CDM150/T6/830
Pack UPC	046677232726
Case Bar Code	50046677232721
ANSI Code HID	M142/E
System Power EL	167 W
Watts	150W
Lamp Wattage EL	150 W
Lamp Voltage	96 V
Dimmable	No
Color Code	830 [CCT of 3000K]
Color Rendering Index	85 Ra8
Color Designation	Warm White
Color Description	830 Warm White
Color Temperature	2950 K
Initial Lumens	14000 Lm
Initial Lumens	14000 Lm
Design Mean Lumens	- Lm
Overall Length C	110 mm
Diameter D	20 mm
Light Center Length L	2.21875 in
Max Overall Length (MOL) - C	4.34375 in
Diameter D	0.75 in
Product Number	232728



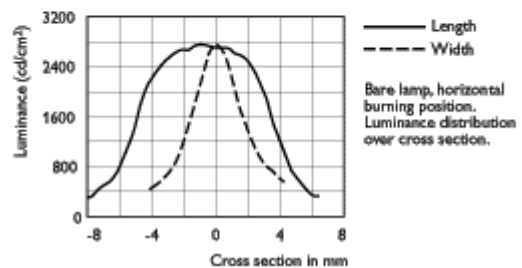
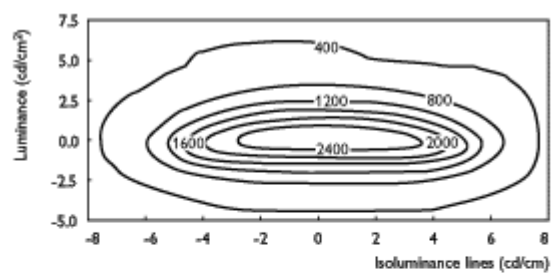
CDM-T 150W/830/942 G12



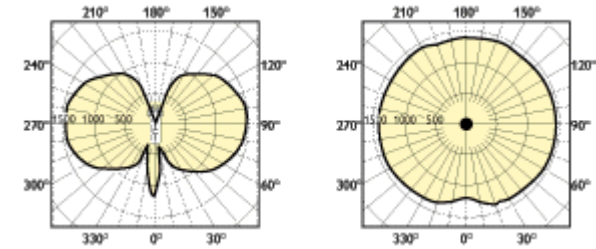
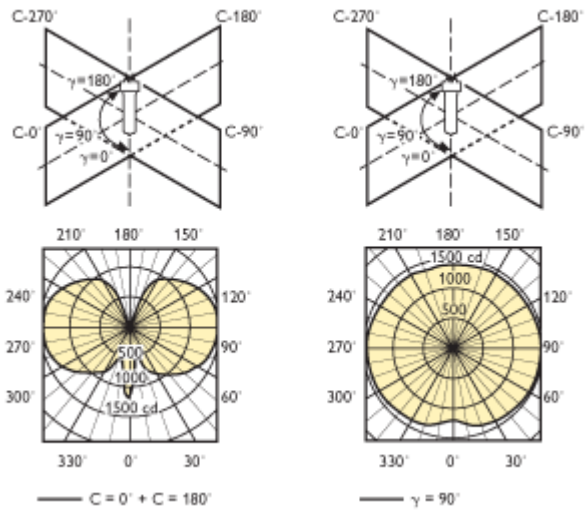
Base G12



Operating Position Universal



CDM-T 150W



CDM-T 150W

CDM-T 150W/830



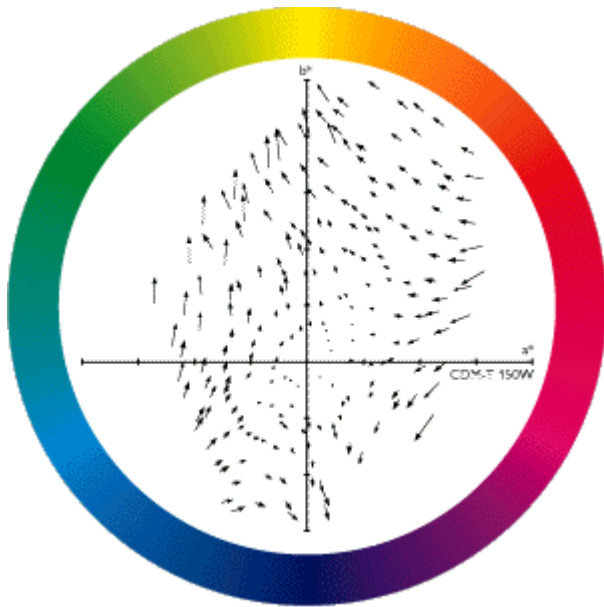
on electronic & electromagnetic gear

CDM-T 150W/830

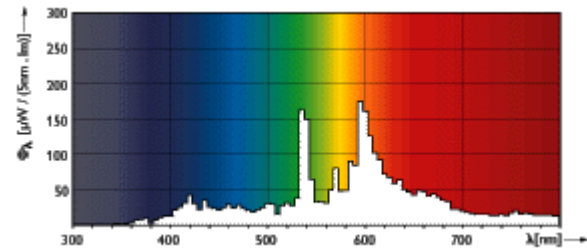


on electronic & electromagnetic gear

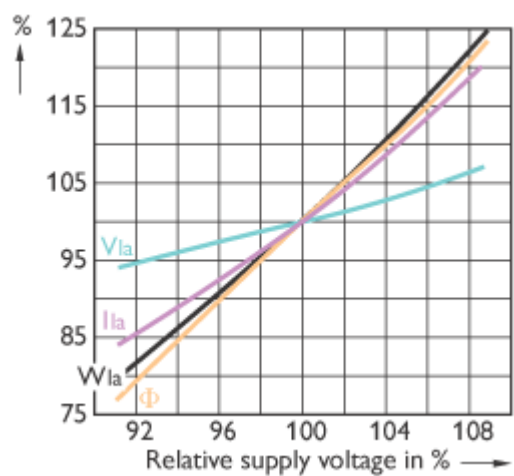
CDM-T 150W/830



CDM-T 150W/830



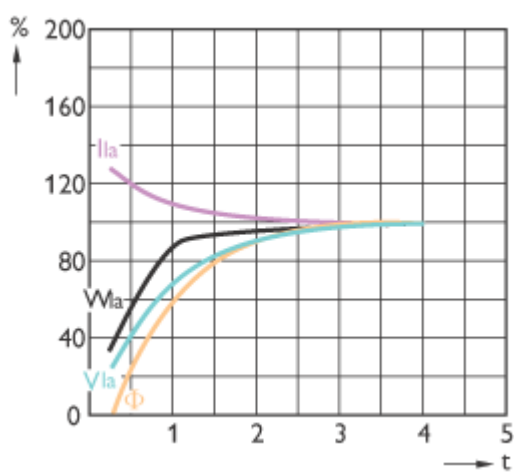
CDM-T/830



no image available

on electronic & electromagnetic gear
CDM-T 150W/830

CDM-T/830



CDM-T/830/842/942

	C	C	D	D	L	L
Full product name	Max	Max	Max	Max	Min	Min
MAST ERCol our CDM- T 150W/ 830 G12 CL	110	110	20	20	55	55

	L	L	L	L	O	O
Full product name	Nom	Nom	Max	Max	Min	Min
MAST ERCol our CDM- T 150W/ 830 G12 CL	56	56	57	57	8.67	8.67



Ballerup

compact fluorescent

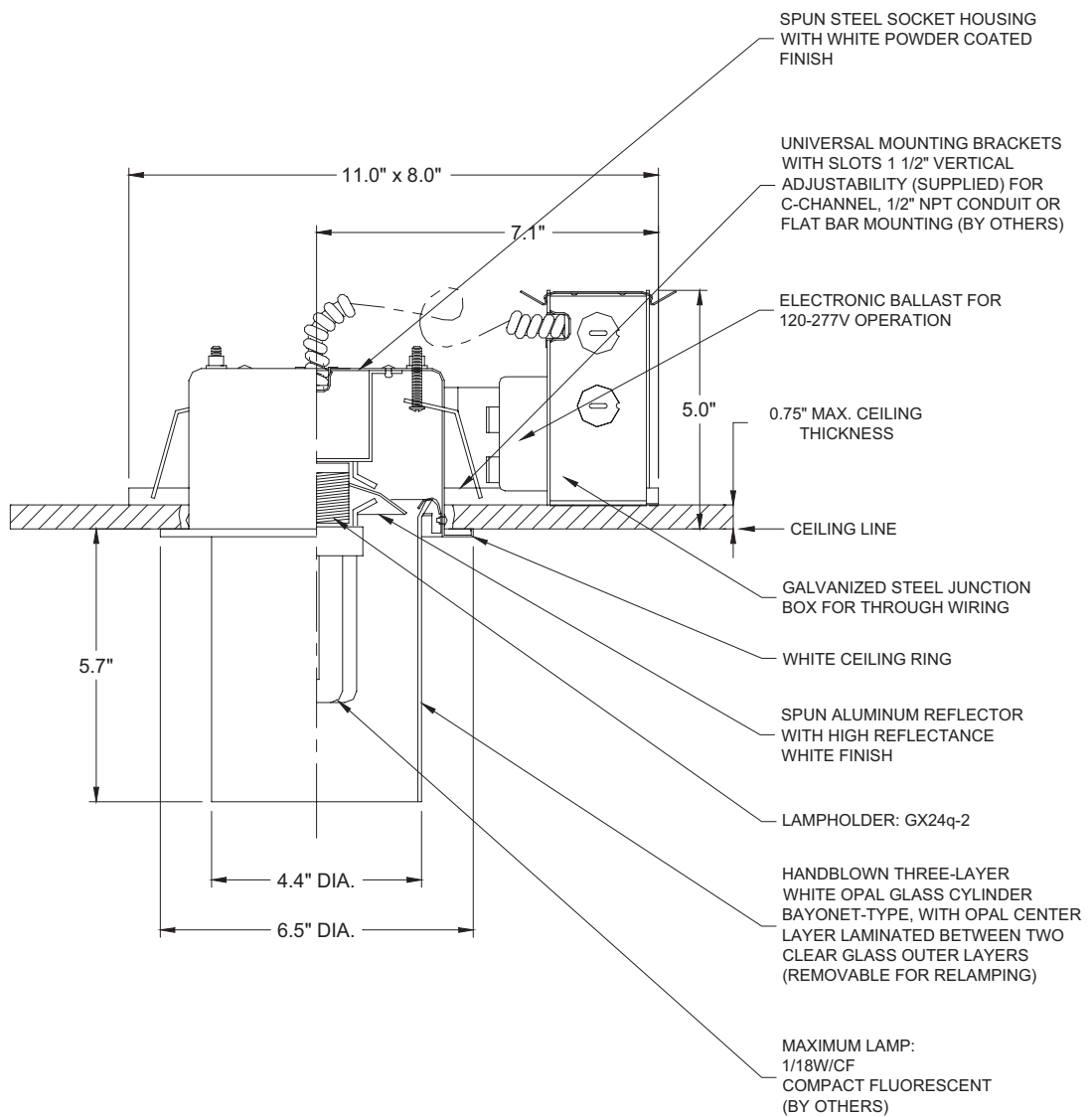
Design: C. J. Nørgaard Pedersen
and P. Hougaard Nielsen

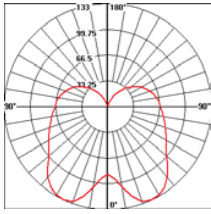
Type:

Project:

Catalog Number:

- NOTES:
1. SUITABLE FOR ACCESSIBLE NON-ACCESSIBLE CEILING TYPES
2. CEILING CUTOUT = 5.5" DIAMETER





Photometric Report: BAL-1-18W-GX24Q-2.IES
 Report No.: L3453
 Poulsen Report No.: BAL-1-18W-GX24Q-2.IES
 Luminaire: Ballerup Ceiling, Opal, Compact Fluorescent
 Lamp: 1/18W/GX24Q-2
 Efficiency: 86.6%
 Description: All data shown are per 1000 lumens. This report can be used for calculation on all versions listed below. Use only actual lumen data when calculating.

Vertical Angle	Candela
0	88
5	93
10	105
25	133
40	120
55	92
70	79
85	70
90	67
120	50
150	16
180	0.1

Zone	Lumens	% Lamp	% Fixture
0-30	104	10.4	12
0-40	184	18.4	21.2
0-60	351	35.1	50.4
0-90	590	59	68.1
90-120	190	19	21.9
90-130	230	23	26.6
90-150	271	27.1	31.3
90-180	276	27.6	31.9
0-180	866	86.6	100.0

Coefficients of Utilization - Zonal Cavity Method
 Effective Floor Cavity Reflectance 20%

Ceiling Reflectance (%)	80				70				50				30				10				0
	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
Wall Reflectance (%)																					
Room Cavity Ratio																					
0	97	97	97	97	91	91	91	91	81	81	81	72	72	72	63	63	63	59	59	59	59
1	85	79	75	70	79	75	70	66	66	62	59	58	55	53	50	48	46	46	44	42	42
2	76	68	61	55	71	63	57	52	56	51	47	49	45	41	42	39	37	33	33	33	33
3	68	58	51	44	64	55	48	42	48	43	38	42	38	34	37	33	30	27	27	27	27
4	62	51	43	37	58	48	41	35	42	36	32	37	32	28	32	28	25	22	22	22	22
5	57	45	37	31	53	43	35	30	38	31	27	33	28	24	29	25	21	19	19	19	19
6	52	40	32	27	49	38	31	25	34	28	23	30	25	21	26	22	18	16	16	16	16
7	48	36	29	23	45	34	27	22	30	24	20	27	22	18	23	19	16	14	14	14	14
8	45	33	25	20	42	31	24	19	28	22	18	24	19	16	21	17	14	12	12	12	12
9	42	30	23	18	39	28	22	17	25	20	16	22	18	14	20	16	13	11	11	11	11
10	39	27	21	16	36	26	20	15	23	18	14	21	16	13	18	14	11	10	10	10	10

Design

C. J. Nørgaard Pedersen & P. Hougaard Nielsen

Concept

Ballerup creates symmetrical down light illumination. The vertical three layer opal glass cylinder provides both the ceiling and the rest of the space with soft, diffuse illumination, with the majority of light directed downward.

Finish

White, powder coated. White opal glass.

Material

Diffuser: Handblown white opal glass. Housing: Spun steel.

Mounting

Semi-recessed: Mounting frame with two vertically adjustable brackets spaced equally at 180° to be installed prior to closing the ceiling. Ceiling types: Accessible and non-accessible ceilings. Ceiling cutout: 5.5" diameter.

Weight

Max. 10 lbs.

Label

cUL, Damp location. IBEW.

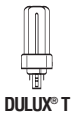
Product code	Light source	Voltage	Finish	Options
BAL	1/18W/CF GX24q-2 1/100W/A-19/CL medium	120-277V 120/277V 120V 277V	WHT	EMPK LUTRON DIMMING

Specification notes:

- a. CF variants provided with one 120-277V electronic ballast.
- b. Incandescent variants only available in 120V.
- c. EMPK (emergency power pack) is available in dual tap 120/277V with remote mounted test switch.
- d. LUTRON dimming 120V or 277V is digital dimming.

Info notes:

- i. The comparable EU version has the following classification: Ingress Protection Code: IP20.



DULUX® D/E 4-PIN ECOLOGIC® COMPACT FLUORESCENT LAMPS

Nominal Wattage	Bulb	MOL		Base	Product Number	Ordering Abbreviation	NEMA Generic Designation	Pkg Qty	Avg Rated Life (hrs)	CCT (K)	CRI	Approx Lumens		Symbols & Footnotes
		(in)	(mm)									Initial @25°C/77°F	Mean @35°C/95°F	
26	T (T4)	5.2	124	GX24Q-3	20767	CF26DT/E/827/ECO	CFTR26W/GX24Q/827	50	12000	2700	82	1800	1548	1,2,5,6,7,12,20
					20995	CF26DT/E/835/ECO/BL/1	CFTR26W/GX24Q/835	50	12000	3500	82	1800	1548	1,2,5,6,7,12,20
32	T (T4)	5.8	147	GX24Q-3	20768	CF32DT/E/827/ECO	CFTR32W/GX24Q/827	50	12000	2700	82	2400	2064	1,2,5,6,7,12,18,20

DULUX T/E/IN AMALGAM, 4-PIN ECOLOGIC COMPACT FLUORESCENT LAMPS

For electronic ballast for high and low temperature applications. Lamps have End-of-Lamp Life (EOL) Protection

Nominal Wattage	Bulb	MOL		Base	Product Number	Ordering Abbreviation	NEMA Generic Designation	Pkg Qty	Avg Rated Life (hrs)	CCT (K)	CRI	Approx Lumens		Symbols & Footnotes
		(in)	(mm)									Initial @25°C/77°F	Mean @35°C/95°F	
18	T (T4)	4.4	111	GX24Q-2	20875	CF18DT/E/IN/827/ECO	CFTR18W/GX24Q/827	50	12000	2700	82	1164	1001	1,2,5,6,7,12,20,21
					20876	CF18DT/E/IN/830/ECO	CFTR18W/GX24Q/830	50	12000	3000	82	1164	1001	1,2,5,6,7,12,20,21
					20877	CF18DT/E/IN/835/ECO	CFTR18W/GX24Q/835	50	12000	3500	82	1164	1001	1,2,5,6,7,12,20,21
					20878	CF18DT/E/IN/841/ECO	CFTR18W/GX24Q/841	50	12000	4100	82	1164	1001	1,2,5,6,7,12,20,21
26	T (T4)	5.0	126	GX24Q-3	20879	CF26DT/E/IN/827/ECO	CFTR26W/GX24Q/827	50	12000	2700	82	1746	1501	1,2,5,6,7,12,20,21
					20880	CF26DT/E/IN/830/ECO	CFTR26W/GX24Q/830	50	12000	3000	82	1746	1501	1,2,5,6,7,12,20,21
					20881	CF26DT/E/IN/835/ECO	CFTR26W/GX24Q/835	50	12000	3500	82	1746	1501	1,2,5,6,7,12,20,21
					20882	CF26DT/E/IN/841/ECO	CFTR26W/GX24Q/841	50	12000	4100	82	1746	1501	1,2,5,6,7,12,20,21
32	T (T4)	5.6	142	GX24Q-3	20883	CF32DT/E/IN/827/ECO	CFTR32W/GX24Q/827	50	12000	2700	82	2328	2002	1,2,5,6,7,12,18,20,21
					20884	CF32DT/E/IN/830/ECO	CFTR32W/GX24Q/830	50	12000	3000	82	2328	2002	1,2,5,6,7,12,18,20,21
					20885	CF32DT/E/IN/835/ECO	CFTR32W/GX24Q/835	50	12000	3500	82	2328	2002	1,2,5,6,7,12,18,20,21
					20886	CF32DT/E/IN/841/ECO	CFTR32W/GX24Q/841	50	12000	4100	82	2328	2002	1,2,5,6,7,12,18,20,21
42	T (T4)	6.5	163	GX24Q-4	20887	CF42DT/E/IN/827/ECO	CFTR42W/GX24Q/827	50	12000	2700	82	3104	2670	1,2,5,6,7,12,18,20,21
					20888	CF42DT/E/IN/830/ECO	CFTR42W/GX24Q/830	50	12000	3000	82	3104	2670	1,2,5,6,7,12,18,20,21
					20871	CF42DT/E/IN/835/ECO	CFTR42W/GX24Q/835	50	12000	3500	82	3104	2670	1,2,5,6,7,12,18,20,21
					20890	CF42DT/E/IN/841/ECO	CFTR42W/GX24Q/841	50	12000	4100	82	3104	2670	1,2,5,6,7,12,18,20,21
57	T (T4)	7.76	197	GX24Q-5	20895	CF57DT/E/IN/827/ECO	CFTR57W/GX24Q/827	50	12000	2700	82	4171	3587	1,2,5,6,12,18,20,21
					20896	CF57DT/E/IN/830/ECO	CFTR57W/GX24Q/830	50	12000	3000	82	4171	3587	1,2,5,6,12,18,20,21
					20897	CF57DT/E/IN/835/ECO	CFTR57W/GX24Q/835	50	12000	3500	82	4171	3587	1,2,5,6,12,18,20,21

COMPACT FLUORESCENT

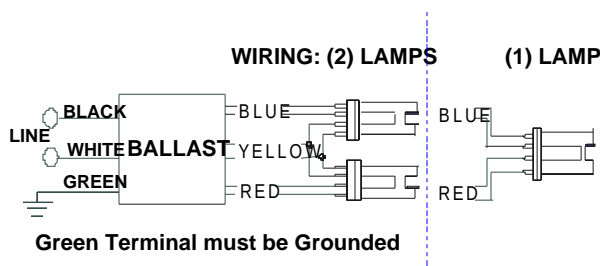
RCF-2S18-H1-LD-QS

Brand Name	AMBISTAR - HPF
Ballast Type	Electronic
Starting Method	Rapid Start
Lamp Connection	Series
Input Voltage	120
Input Frequency	60 HZ
Status	Active

Electrical Specifications

Lamp Type	Num. of Lamps	Rated Lamp Watts	Min. Start Temp (°F/C)	Input Current (Amps)	Input Power (ANSI Watts)	Ballast Factor	MAX THD %	Power Factor	MAX Lamp Current Crest Factor	B.E.F.
CFQ18W/G24Q	1	18	0/-18	0.16	19	1.00	10	0.98	1.7	5.26
CFQ18W/G24Q	2	18	0/-18	0.30	35	0.95	10	0.98	1.7	2.71
CFTR18W/GX24Q	1	18	0/-18	0.17	20	1.05	10	0.98	1.7	5.25
* CFTR18W/GX24Q	2	18	0/-18	0.33	39	1.05	10	0.98	1.7	2.69

Wiring Diagram

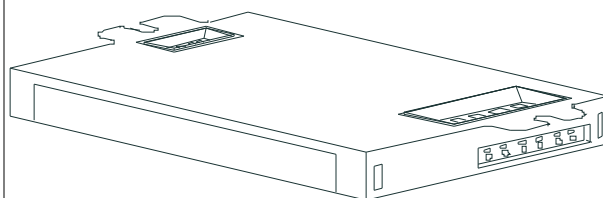


The wiring diagram that appears above is for the lamp type denoted by the asterisk (*)

Standard Lead Length (inches)

	in.	cm.		in.	cm.
Black	0	0	Yellow/Blue		0
White	0	0	Blue/White		0
Blue	0	0	Brown		0
Red	0	0	Orange		0
Yellow	0	0	Orange/Black		0
Gray		0	Black/White		0
Violet		0	Red/White		0

Enclosure



Enclosure Dimensions

OverAll (L)	Width (W)	Height (H)	Mounting (M)
4.98 "	2.4 "	1.0 "	4.6 "
4 49/50	2 2/5	1	4 3/5
12.6 cm	6.1 cm	2.5 cm	11.7 cm

Revised 09/10/2007



Data is based upon tests performed by Philips Lighting Electronics N.A. in a controlled environment and is representative of relative performance. Actual performance can vary depending on operating conditions. Specifications are subject to change without notice. All specifications are nominal unless otherwise noted.

PHILIPS LIGHTING ELECTRONICS N.A.

10275 WEST HIGGINS ROAD · ROSEMONT, IL 60018

Tel: 800-322-2086 · Fax: 888-423-1882 · www.philips.com/advance

Customer Support/Technical Service: 800-372-3331 · OEM Support: 866-915-5886

RCF-2S18-H1-LD-QS	
Brand Name	AMBISTAR - HPF
Ballast Type	Electronic
Starting Method	Rapid Start
Lamp Connection	Series
Input Voltage	120
Input Frequency	60 HZ
Status	Active

Electrical Specifications

Notes:

Section I - Physical Characteristics

- 1.1 Ballast shall be physically interchangeable with standard electromagnetic or standard electronic ballasts, where applicable.
- 1.2 Ballast shall be provided with integral leads or poke-in wire trap connectors color coded per ANSI C82.11.

Section II - Performance Requirements

- 2.1 Ballast shall be Rapid Start.
- 2.2 Ballast shall contain auto restart circuitry in order to restart lamps without resetting power
- 2.3 Ballast shall operate from 60 Hz input source of 120V with sustained variations of +/- 10% (voltage and frequency) with no damage to the ballast.
- 2.4 Ballast shall be high frequency electronic type and operate lamps at a frequency above 42 kHz to avoid interference with infrared devices and eliminate visible flicker.
- 2.5 Ballast shall have a Power Factor greater than 0.98 for primary lamp.
- 2.6 Ballast shall have a minimum ballast factor for primary lamp as follows: 0.85 for linear lamps or 1.0 for CFL lamps.
- 2.7 Ballast shall provide for a Lamp Current Crest Factor of 1.7 or less in accordance with lamp manufacturer recommendations.
- 2.8 Ballast input current shall have Total Harmonic Distortion (THD) of less than 20% when operated at nominal line voltage with primary lamp.
- 2.9 Ballast shall have a Class A sound rating.
- 2.10 Ballast shall have a minimum starting temperature for primary lamp as follows: 0°F/-18°C for CFL lamps or 50°F/10°C for standard T12 lamps and 60°F/16°C for energy-saving T12 lamps.
- 2.11 Ballast shall provide Lamp EOL Protection Circuit for CFL lamps.
- 2.12 Ballast shall tolerate sustained open circuit and short circuit output conditions without damage.

Section III - Regulatory Requirements

- 3.1 Ballast shall not contain any Polychlorinated Biphenyl (PCB).
- 3.2 Ballast shall be Underwriters Laboratories (UL) listed, Class P and Type 1 Outdoor; and Canadian Standards Association (CSA) certified where applicable.
- 3.3 Ballast for CFL lamps shall be rated for use in air-handling spaces.
- 3.4 Ballast shall comply with ANSI C62.41 Category A for Transient protection.
- 3.5 Ballast shall comply with ANSI C82.11 where applicable.
- 3.6 Ballast shall comply with the requirements of the Federal Communications Commission (FCC) rules and regulations, Title 47 CFR part 18, Consumer (Class B) for EMI/RFI (conducted and radiated).

Section IV - Other

- 4.1 Ballast shall be manufactured in a factory certified to ISO 9002 Quality System Standards.
- 4.2 Ballast shall carry a three-year warranty from date of manufacture against defects in material or workmanship, including replacement, for operation at a maximum case temperature of 70°C for RELB models or 85°C for RCF models.
- 4.3 Manufacturer shall have a fifteen-year history of producing electronic ballasts for the North American market.
- 4.4 Ballast shall meet the ballast-controlled performance requirements in the ENERGY STAR Program Requirements for Residential Lite Fixtures.

Revised 09/10/2007



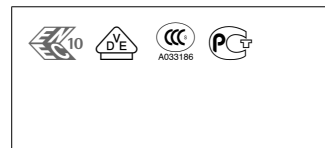
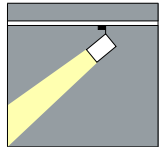
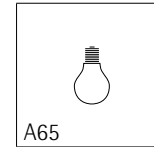
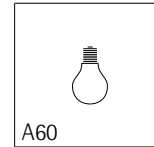
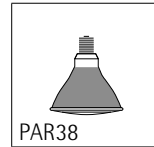
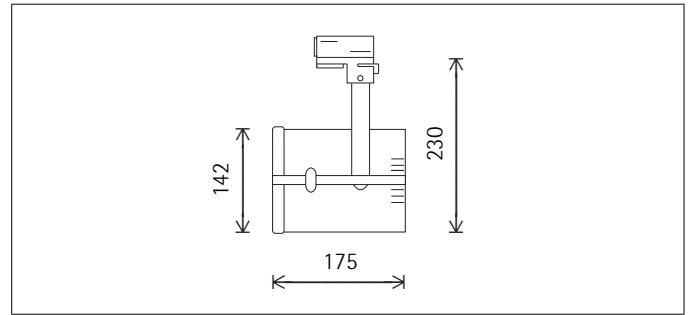
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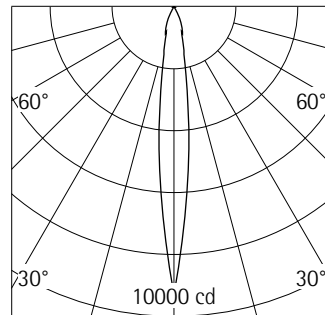
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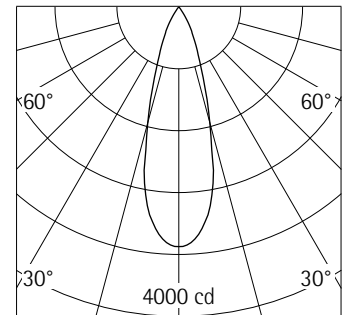
77460.000 Black
 PAR38 120W 230V E27 12°
 PAR38 120W 230V E27 30°
 A60 100W 230V E27 1380lm
 A65 150W/m 230V E27 2220lm

Product description
 Housing: cast aluminium, powder-coated. 0°-90° tilt. Lateral guides for accessories. Bracket on 3-circuit adapter rotatable through 360°. ERCO 3-circuit adapter: plastic. A60 100W/m or A65 150W/m with reflector 70555.000. Weight 1.50kg



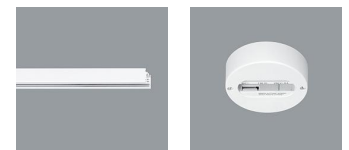
PAR38 120W 230V E27 12°

h(m)	E(lx)	D(m)
		12°
1	9300	0.21
2	2325	0.42
3	1033	0.63
4	581	0.84
5	372	1.05



PAR38 120W 230V E27 30°

h(m)	E(lx)	D(m)
		30°
1	3100	0.54
2	775	1.07
3	344	1.61
4	194	2.14
5	124	2.68



Mounting
 ERCO 3-circuit track
 Hi-trac 3-circuit track
 Monopoll 3-circuit track
 1-circuit singlet

Planning data

Cleaning (a)	1				2				3			
	P	C	N	D	P	C	N	D	P	C	N	D
Ambient conditions												
LMF	0.96	0.94	0.90	0.86	0.93	0.91	0.86	0.81	0.92	0.90	0.84	0.79
RSMF	0.96	0.92	0.87	0.81	0.96	0.92	0.87	0.81	0.96	0.92	0.87	0.81

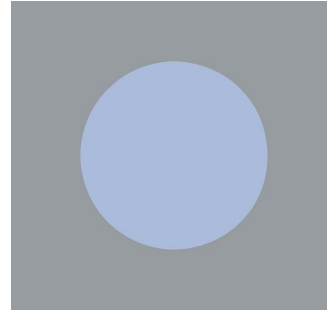
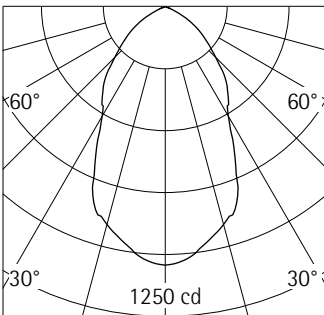
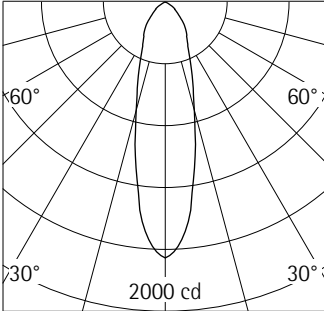
Hours of operation (h)	1000
LLMF	0.93
LSF	1

- MF LMFxRSMFxLLMFxLSF
- MF Maintainance Factor
- LMF Lumiaire Maintenance Factor
- RSMF Room Surface Maintenance Factor
- LLMF Lamp Lumens Maintenance Factor
- LSF Lamp Survival Factor
- P Room pure
- C Room clean
- N Room normal
- D Room dirty

Accessories



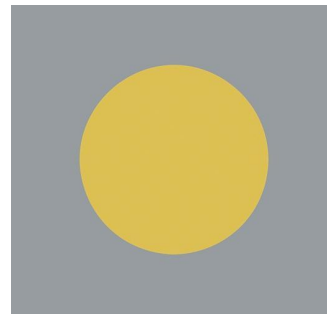
70555.000
Reflector
for A60 100W or A65 150W.
Aluminium, silver anodised.



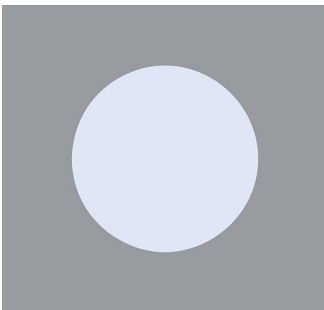
74489.000
Daylight conversion filter
Only in conjunction with:
70525.000
70530.000



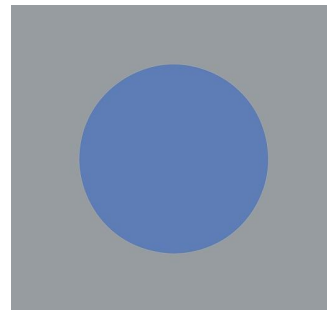
74455.000
Interference colour filter
Magenta
Only in conjunction with:
70525.000
70530.000



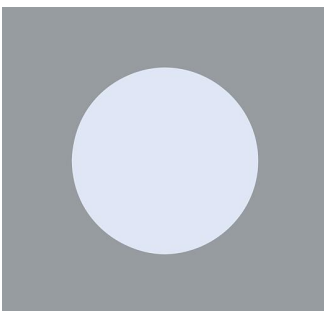
74456.000
Interference colour filter
Amber
Only in conjunction with:
70525.000
70530.000



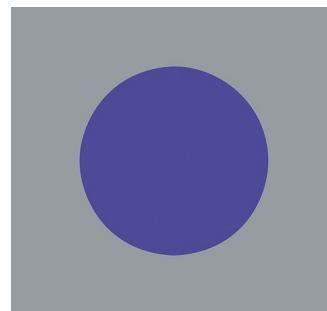
70688.000
UV filter
Only in conjunction with:
70525.000
70530.000



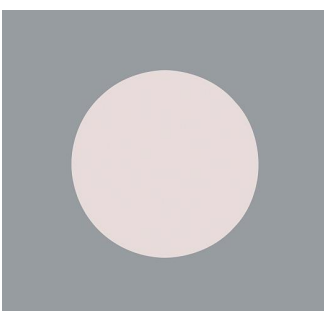
74457.000
Interference colour filter
Sky blue
Only in conjunction with:
70525.000
70530.000



70689.000
IR filter
Only in conjunction with:
70525.000
70530.000



74458.000
Interference colour filter
Night blue
Only in conjunction with:
70525.000
70530.000



74488.000
Skintone filter
Only in conjunction with:
70525.000
70530.000

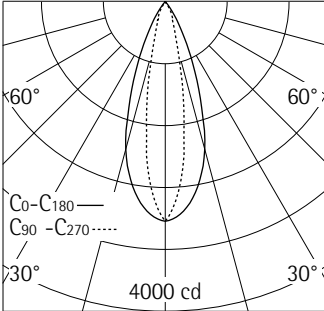
Accessories



70515.000
Sculpture attachment
Black
Metal/cast aluminium, powder-coated. Sculpture lens. Only with PAR38 Spot.



70525.000
Filter holder
Black
with barn doors. Metal/cast aluminium, powder-coated.

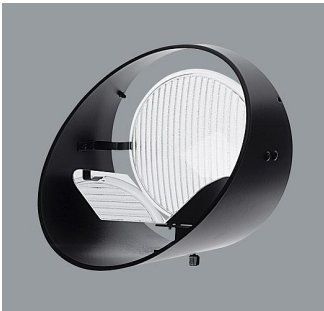


PAR38 120W 230V E27 12°

h(m)	E(lx)	D(m)	
		C0	C90
		38°	19°
1	2837	0.69	0.33
2	709	1.38	0.67
3	315	2.07	1.00
4	177	2.75	1.34
5	113	3.44	1.67



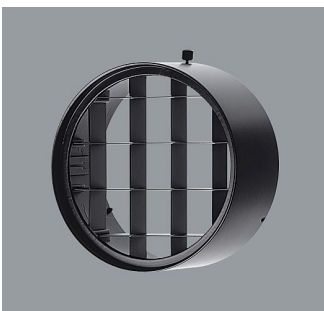
70530.000
Filter holder
Black
Metal/cast aluminium, powder-coated.



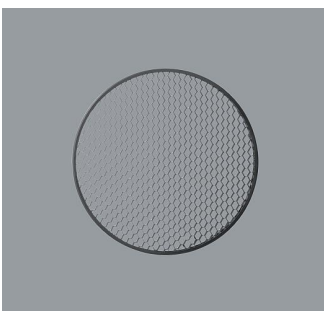
70500.000
Lens wallwasher attachment
Black
Metal/cast aluminium, powder-coated. Spread lens with reflector, aluminium, silver anodised. Only with PAR38 Flood.



70505.000
Multigroove baffle
Black
Cast aluminium, powder-coated.



70520.000
Anti-dazzle screen
Black
Metal/cast aluminium, powder-coated.



70557.000
Honeycomb anti-dazzle screen
Metal, black.
Only in conjunction with:
70525.000
70530.000



PAR38



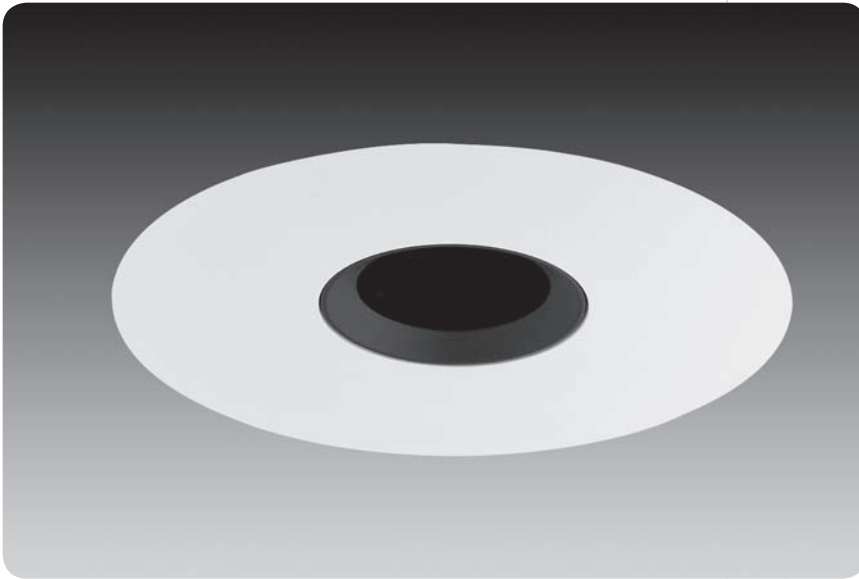
PAR38 Med Side Prong

CAPSYLITE® PAR38

Suitable for use in unshielded fixtures.

Watts	Bulb	Base	Product Number	Symbols & Footnotes	Ordering Abbreviation	Volts	Pkg Qty	Beam Type	Class & Filament	Avg Rated Life(hrs)	Lumens CCT	CBCP	Beam Angle	MOL (in)
75	PAR38	E26 Med Skt	14517	★ 43,72,118,137,181	75PAR38/HAL/WFL50	130	15	WFL	C,CC-8	2500	1060 2900	1300	50	5.31
@ 120 volts, approximate 66 watts, 805 lumens, 5000 hours														
90	PAR38	E26 Med Skt	14586	★ 43,72,118	90PAR38/HAL/SP9	120	15	SP	C,CC-8	2500	1310 2925	19000	9	5.31
			15539	★ 43,72,118	90PAR38/HAL/SP	120	6	SP	C,CC-8	2500	1310 2925	19000	9	5.31
			14587	★ 43,72,118,137,187	90PAR38/HAL/SP9	130	15	SP	C,CC-8	2500	1310 2925	19000	9	5.31
@ 120 volts, approximate 79 watts, 1000 lumens, 5000 hours														
			14580	★ 43,72,118	90PAR38/HAL/WSP12	120	15	WSP	C,CC-8	2500	1310 2925	14300	12	5.31
			14578	★ 43,72,118,137,187	90PAR38/HAL/WSP12	130	15	WSP	C,CC-8	2500	1310 2925	14300	12	5.31
@ 120 volts, approximate 79 watts, 1000 lumens, 5000 hours														
			14601	★ 43,72,118,137,187	90PAR38/HAL/NFL25	130	15	NFL	C,CC-8	2500	1310 2925	4700	25	5.31
@ 120 volts, approximate 79 watts, 1000 lumens, 5000 hours														
			14579	★ 43,72,118	90PAR38/HAL/FL30	120	15	FL	C,CC-8	2500	1310 2925	3500	30	5.31
			15545	★ 43,72,118	90PAR38/HAL/FL	120	6	FL	C,CC-8	2500	1310 2925	3500	30	5.31
			14577	★ 43,72,118,137,187	90PAR38/HAL/FL30	130	15	FL	C,CC-8	2500	1310 2925	3500	30	5.31
@ 120 volts, approximate 79 watts, 1000 lumens, 5000 hours														
			14647	★ 43,72,118,137,187	90PAR38/HAL/FL/CVP	130	6	FL	C,CC-8	2500	1310 2925	3500	30	5.31
@ 120 volts, approximate 79 watts, 1000 lumens, 5000 hours														
			14602	★ 43,72,118,137,187	90PAR38/HAL/WFL50	130	15	WFL	C,CC-8	2500	1310 2925	1600	50	5.31
@ 120 volts, approximate 79 watts, 1000 lumens, 5000 hours														
		Med Side Prong	14630	★ 43,72,118	90PAR38/HAL/3WSP12	120	15	WSP	C,CC-8	2500	1310 2925	14300	12	5.31
			14632	★ 43,72,118	90PAR38/HAL/3FL30	120	15	FL	C,CC-8	2500	1310 2925	3500	30	5.31
100	PAR38	E26 Med Skt	15522	★ 43,72,118	100PAR38/HAL/SP9	120	6	SP	C,CC-8	2500	1500 2950	22000	9	5.31
			15585	★ 43,72,118	100PAR38/HAL/FL30	120	6	FL	C,CC-8	2500	1500 2950	4000	30	5.31
106	PAR38	E26 Med Skt	15003	★ 43,72,118	106PAR38/HAL/SP10	120	15	SP	C,CC-8	2000	1800 2975	22500	10	5.31
			15001	★ 43,72,118	106PAR38/HAL/WFL50	120	15	WFL	C,CC-8	2000	1800 2975	2000	50	5.31
120	PAR38	E26 Med Skt	14856	★ 43,72,118	120PAR38/HAL/SP10	120	15	SP	C,CC-8	3000	1800 2950	22500	10	5.31
			14873	★ 43,72,118	120PAR38/HAL/SP	120	6	SP	C,CC-8	3000	1800 2950	22500	10	5.31
			14874	★ 43,72,118,137,197	120PAR38/HAL/SP10	130	15	SP	C,CC-8	3000	1800 2950	22500	10	5.31
@ 120 volts, approximate 105 watts, 1370 lumens, 6000 hours														
			14855	★ 43,72,118	120PAR38/HAL/FL30	120	15	FL	C,CC-8	3000	1800 2950	4600	30	5.31

downlight – pinhole
id®



Patent Pending

features

Downlight pinhole offers a parabolic 50 degree cutoff in a simple straight down aiming position.

Perfect Fit™ installation process provides seamless integration in plaster, drywall and acoustical tiles, while maintaining optics in any ceiling thickness.

Trim provides for easy relamping.

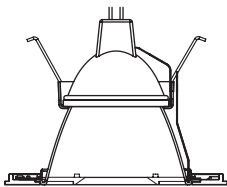
Smart Lock™ ring allows quick removal and re-assembly of trim components for field painting.

Standard white finish is field paintable.

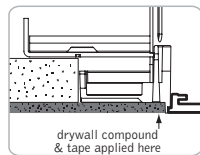
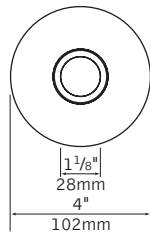
Interchangeable lamp and trim mechanisms allow for maximum flexibility, even after luminaire is installed.

trim assembly

trim

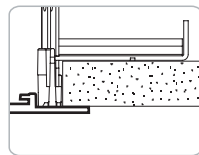
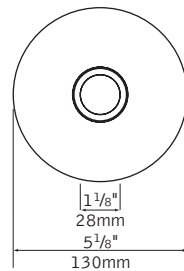


flush trim
(drywall only)



ceiling cutout dimensions:
6 3/16"

overlap trim



ceiling cutout dimensions:
4 11/16"

trim option

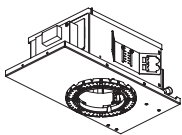


trim without
black bevel

housing types

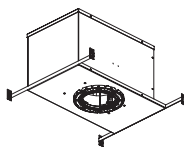
T

14" x 7.625" x 5" h



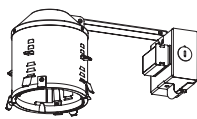
IC (air-tight)

16.5" x 10" x 9" h



RT

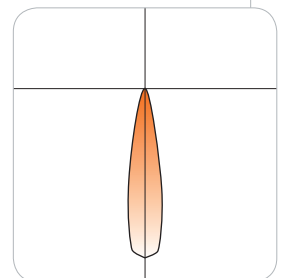
11.64" x 6.59" x 5.58" h



overlap faceplate only

performance

Downlight Pinhole with Black Bevel
Q71MR16/C/NSP15
4027 cd @ 0° (0° tilt)



Visit focalpointlights.com for complete photometric data.

december 2008

fixture:

project:

housing specifications

lamp

Halogen MR16 lamp provides numerous beam options from 10° to 40°.

construction

(T)Thermally protected housing for new construction applications without direct contact with insulation. Insulation to be kept 3" away from housing. Unit is enclosed in 20ga. black painted CRS housing, which eliminates stray light into the plenum, on a 20ga. CRS frame. Housing ships standard with butterfly brackets which mount to ½ emt or channel and vertically adjust 2". Bar hangers are an option and must be specified when ordering T-rated housing. Transformer is accessible from below ceiling. Unit maybe relamped from above. Fixture will not exceed 7.5lbs.

(IC) Insulated ceiling housing for new construction applications with direct insulation contact. Unit is constructed of double wall 18ga. aluminum housing on a 20ga. CRS frame. Housing ships standard with locking bar hangers. Transformers and thermal protectors are accessible from below ceiling. Housing is gasketed and complies with ASTM E-283, air-tight energy codes. Fixture will not exceed 11lbs.

(RT)Remodel, thermally protected housing for remodel construction applications without direct contact with insulation. Insulation to be kept 3" away from housing. Unit is 20ga. black painted CRS with contoured top and hinging J-box arm. Housing locks into finished ceiling via 4 removable spring clips. J-box and transformers are accessible by removing housing from ceiling. Fixture will not exceed 4.5lbs.

electrical

Porcelain bi-pin socket with quick connection. Acoustically isolated transformer, replaceable from below, mounted outside of housing to ensure cool operation and minimize hum. Transformers available in either electronic or magnetic 120V or 277V. For residential dimming applications, toroidal magnetic transformer is available. Large junction box with pryouts. UL listed for thru branch wiring, four #12 90°C conductors for T housing and two #14 90°C conductors for RT and IC housing.

installation

Adjustable throat allows infinite adjustment for ½" to 1½" thick ceilings. Shipped in ½" ceiling position. For thicker ceilings consult factory. Ceiling thickness adjustment sleeve locks with supplied ⅜" hex driver. Sleeve allows fine tuning of the housing for a perfect fit. Comes with laser/string alignment guides. Housing ships with dust cover.

trim specifications

aesthetics

Diminutive black knife edge baffle minimizes brightness. Truncated Specular black reflector cone above ensures glare free optics. Reflector is .040" spun aluminum. Matte white finish may be used as a primer coat for field painting. Smart Lock™ ring allows disassembly for custom field painting.

optics

50° cutoff to the lamp and the lamp image.

construction

Torsion springs pull trim tight to the ceiling. Auto Memory for relamping, keeps lamp in a straight down aiming position. Trim stays captive to housing during relamping via torsion springs. Tempered soft focus lens supplied as standard. Lamp tray can hold up to two accessories, up to ¼" thick. No visible fasteners within the trim. Mechanical light traps eliminate light leaks. Warp free die-cast aluminum faceplate, .040" thick flange on overlap versions. Installation clip allows Downlight Pinhole to be used in basic housing. Removable clips slide and lock into place to dedicate fixture to downlight use only.

labels

UL listed, Damp label standard. No visible labels when trim is installed.

housing ordering

housing series FD4

Halogen Housing FD4

lamp MR

MR16 Lamp MR

transformer type _____

Electronic Dimming 120V, 11.7V E1

Electronic Dimming 277V, 11.7V E2

Magnetic Dimming 120V, 11.7V M1
(T housing only)

Magnetic Dimming 277V, 11.7V M2
(T housing only)

Toroidal Dimming 120V M1T
(IC & RT housings only)

faceplate type _____

Round Flush RF
(T & IC housings only)

Round Overlap RO

housing type _____

New Construction T Rated T
(71W max)

New Construction IC Rated IC
(50W max)

Remodel T Rated RT
(50W max, overlap faceplate only)

factory options _____

Bar Hangers BH
(T housing only)

Wattage Restriction Label WRXX
(XX=wattage)

Chicago Plenum CP
(T housing only)

trim ordering

trim aperture D1

1½" Aperture D1

faceplate type _____

Round Flush RF
(T & IC housing only) (drywall only)

Round Overlap RO

optic _____

Pinhole with Black Bevel PINF

Pinhole without Black Bevel PINXF

faceplate finish _____

White WH

Black BK

Titanium Silver TS

Aluminum Raw AL

lens accessories _____

(soft focus lens supplied as standard)

Hex Louver HL

Linear Spread Lens LSL

Prismatic Spread Lens PSL

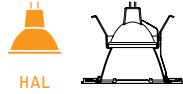
Sand Blasted Lens SBL

Clear Lens CL

UV Lens UVL

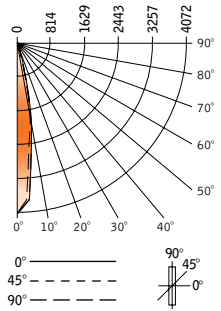
a complete unit consists of
two line items, housing and trim
example: FD4-MR-E1-RF-IC
D1-RF-PINF-WH

rnd downlight – pinhole
id®



Luminaire: 71W MR16 accent pinhole, narrow spot distribution with micropismatic lens
 Filename: D1RXPINHA71NS15_0.ies
 Catalog #: D1-RX-PINF-WH
 Efficiency: 48% (0° tilt) , 37% (30° tilt)
 Photometric Report #: 13547.0

CANDLEPOWER DISTRIBUTION - 0° TILT



Vertical Angle	Horizontal Angle			
	0°	22.5°	45°	67.5° 90°
0°	4072	4072	4072	4072 4072
5°	3691	3702	3744	3698 3670
15°	645	770	797	792 636
25°	81	112	107	77 47
35°	10	14	13	8 6
45°	2	3	2	0 0
55°	0	0	0	0 0
65°	0	0	0	0 0
75°	0	0	0	0 0
85°	0	0	0	0 0
90°	0	0	0	0 0

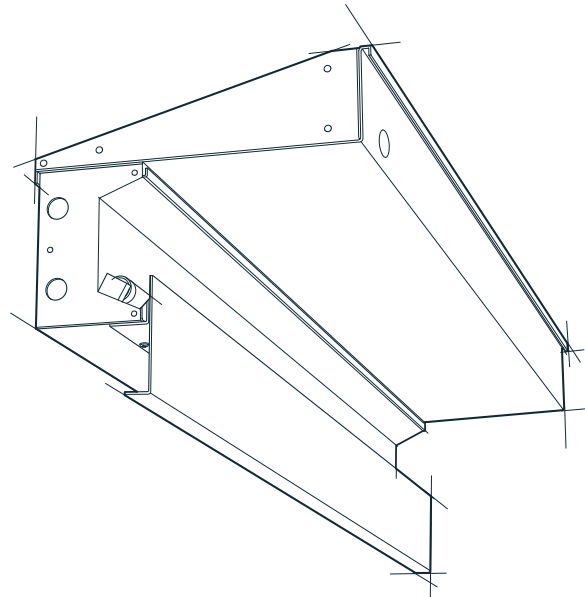
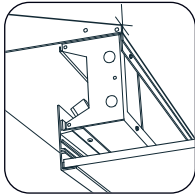
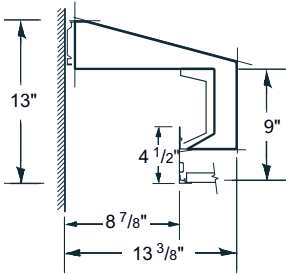
FOOTCANDLE VALUES

0° aiming angle - horizontal surface

D	C	FC	L	W
6'	0	114	1.6'	1.6'
8'	0	64	2.1'	2.1'
10'	0	41	2.6'	2.6'
12'	0	28	3.2'	3.2'
14'	0	21	3.7'	3.7'

Footcandle results based on AGI32; off the shelf lamp in fixture, with soft focus lens; Reflectances=0/0/0; LLL=1

Go to www.focalpointlights.com for additional photometric data.



series	lamp rows	nominal length	reflector system	voltage	ceiling system	options
P-59						
	1T8	R__* * row length - advise factory of row and pattern dimensions	W* white PR parabolic reflector * standard	120 277 347 120-277	X1 exposed T-bar X3B* hard ceiling * standard	EML EMH DM RSE 10THD B__ FH QC C2 CX

Applications Retail, lobbies, corridors, hospitality, bathrooms.

Features A one-lamp prefabricated cove system offering an indirect wall wash effect to help eliminate socket shadows. Using no louvers, the fixture illuminates walls while giving the ceiling the appearance of floating.

Construction The housing, available in 2-, 3-, 4-, 6- or 8-foot standard lengths, is made of 20-gauge steel. Trim flange is 1/16"-thick extruded aluminum.

Finish The standard housing and trim color is textured matte white (TMW) using polyester powder paint.

Electrical T8 fixtures have instant-start electronic ballasts with less than 20% THD. Fixtures are U.L. Damp labeled (non-emergency) and I.B.E.W. manufactured. Maximum ballast size available: 2 5/8" width x 1 1/2" height.

Mounting Fixture is to be recess-mounted in either exposed T-bar or hard ceiling application(s).

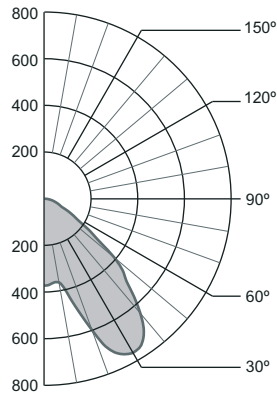
Options **EML**: emergency battery (T8=600-700 lumens); **EMH**: emergency battery (T8=1100-1400 lumens); **DM**: dimming (consult factory); **RSE**: rapid-start electronic; **10THD**: ballast with < 10% total harmonic distortion; **B__**: specific ballast, specify manufacturer and catalog number (consult factory); **FH**: fixture fusing (slow blow); **QC**: quick-connect circuit assemblies; **C2**: 90° corner; **CX**: special connectors (consult factory).

P-59 Cove & Perimeter

photometric data

P-59-1T8-04-W

Report # LSI17285 D=100.0% I=0.0%
Lamp Lumens: 3000 Input Watts: 32



Candlepower Summary

Vertical Angle	Horizontal Angle					Output Lumens
	0°	22.5°	45°	67.5°	90°	
0	372	372	372	372	372	
5	371	367	368	362	364	18
10	368	360	360	370	364	
15	361	352	374	475	452	59
20	352	349	456	617	601	
25	339	361	558	730	729	126
30	324	399	666	759	761	
35	306	436	690	729	737	184
40	285	474	673	633	638	
45	261	490	609	491	496	189
50	235	460	498	389	388	
55	207	419	375	235	232	140
60	177	349	269	139	141	
65	145	253	146	79	80	77
70	114	173	85	59	61	
75	81	76	49	40	43	31
80	49	32	31	24	27	
85	18	12	15	9	12	8
90	0	0	0	0	0	

Zonal Lumen Summary

Zone	% Lamp	% Luminaire
0-90	43.24	100.00
90-180	0.00	0.00

Efficiency = 43.2%

Luminance Summary (cd/m²)

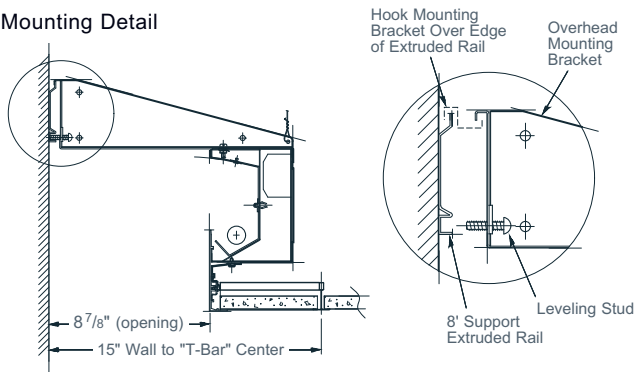
Angle	0°	45°	90°
45	1342	3142	2558
55	1312	2386	1475
65	1247	1263	694
75	1138	690	604
85	751	607	520

Coefficients of Utilization (%)

Floor	effective floor cavity reflectance = .20										
	Ceiling		80		70		50		50		
Wall	70	50	30	10	70	50	30	10	50	30	10
RCR 0	51	51	51	51	50	50	50	50	48	48	48
1	48	46	44	43	46	45	43	42	43	42	41
2	44	40	38	36	43	40	37	35	38	36	34
3	40	36	33	30	39	35	32	30	34	31	29
4	37	32	28	26	36	31	28	25	30	27	25
5	34	28	24	22	33	28	24	22	27	24	21
6	31	25	21	19	30	25	21	19	24	21	18
7	28	22	19	16	28	22	19	16	21	18	16
8	26	20	16	14	25	20	16	14	19	16	14
9	24	18	14	12	23	18	14	12	17	14	12
10	22	16	13	10	21	16	13	10	15	12	10

installation

Mounting Detail



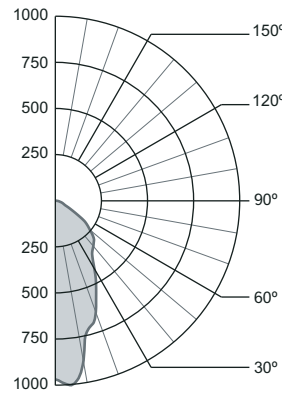
Mounting Detail



photometric data

P-59-1T8-04-PR

Report # LSI17286 D=100.0% I=0.0%
Lamp Lumens: 3000 Input Watts: 32



Candlepower Summary

Vertical Angle	Horizontal Angle					Output Lumens
	0°	22.5°	45°	67.5°	90°	
0	968	968	968	968	968	
5	968	997	1011	993	1003	47
10	960	989	958	848	880	
15	943	934	777	711	712	115
20	909	827	703	640	641	
25	862	690	639	525	523	146
30	803	632	534	430	422	
35	733	582	445	349	347	149
40	655	488	351	317	320	
45	570	402	301	293	296	137
50	483	324	271	242	243	
55	396	240	236	192	192	106
60	312	196	179	107	107	
65	228	159	109	56	59	60
70	150	110	52	44	45	
75	75	52	36	30	32	24
80	35	22	22	17	20	
85	14	8	10	5	9	5
90	0	0	0	0	0	

Zonal Lumen Summary

Zone	% Lamp	% Luminaire
0-90	40.54	100.00
90-180	0.00	0.00

Efficiency = 40.5%

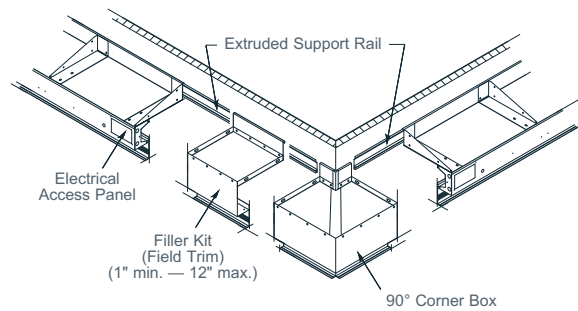
Luminance Summary (cd/m²)

Angle	0°	45°	90°
45	2931	1552	1527
55	2510	1500	1222
65	1961	937	510
75	1053	503	452
85	584	398	366

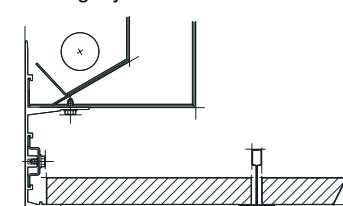
Coefficients of Utilization (%)

Floor	effective floor cavity reflectance = .20										
	Ceiling		80		70		50		50		
Wall	70	50	30	10	70	50	30	10	50	30	10
RCR 0	48	48	48	48	47	47	47	47	45	45	45
1	45	44	42	41	44	43	41	40	41	40	39
2	42	39	37	35	41	38	36	35	37	35	34
3	39	35	33	31	38	35	32	30	34	32	30
4	36	32	29	27	35	32	29	27	31	28	26
5	33	29	26	23	33	29	26	23	28	25	23
6	31	26	23	21	30	26	23	21	25	23	21
7	29	24	21	19	28	24	21	19	23	21	19
8	27	22	19	17	26	22	19	17	21	19	17
9	25	20	17	15	25	20	17	15	19	17	15
10	23	19	16	14	23	18	16	14	18	15	14

Corner Detail



Ceiling System (x1)



In an effort to continually provide the highest quality products, Prudential reserves the right to change design specifications and/or materials, without notice.

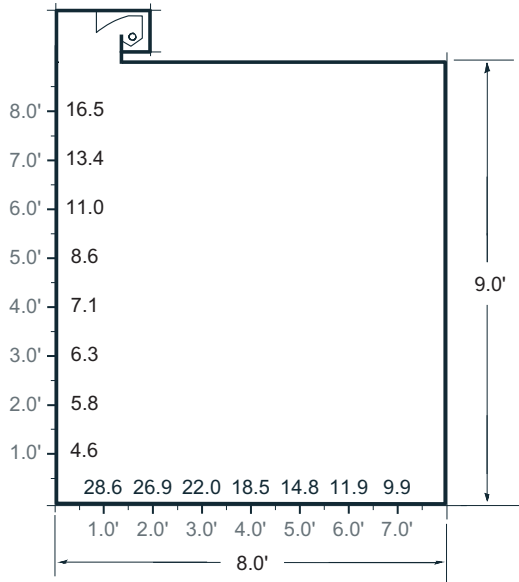
perimeter application

8' x 20' x 9' corridor layout

Reflectances used: 80/50/20

Average Illuminance/Horizontal Grid (0" A.F.F.)

Average Illuminance/Vertical Grid (Wall Surface)



20' Single Fixture – P-59-1T8-PR		Vertical Footcandles	
Average Illuminance maintained (LLF = .70)	Max FC	Max : Min	1' A.F.F.
9.9 FC	19.4	4.2 : 1	4.6

20' Single Fixture – P-59-1T8-W		Vertical Footcandles	
Average Illuminance maintained (LLF = .70)	Max FC	Max : Min	1' A.F.F.
12.1 FC	50.1	12.5 : 1	4.0

20' Single Fixture – P-59-1T8-PR		Horizontal Footcandles	
Average Illuminance maintained (LLF = .70) (0" A.F.F.)	Max FC	Max : Min (0" A.F.F.)	Watts/ Square Foot
15.7 FC	28.6	2.9 : 1	.92

20' Single Fixture – P-59-1T8-W		Horizontal Footcandles	
Average Illuminance maintained (LLF = .70) (0" A.F.F.)	Max FC	Max : Min (0" A.F.F.)	Watts/ Square Foot
11.5 FC	14.0	2.2 : 1	.92



F32T8/TL830 ALTO TG 1LP

Product family description
Outstanding performance and reliability.

Features/Benefits

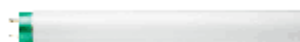
- Keeps broken glass contained
- Coating will not yellow, crack, or flake
- Better for the environment
- Low mercury
- Energy efficient
- Long life
- Coating guaranteed to last the average rated life of the lamp.

Applications

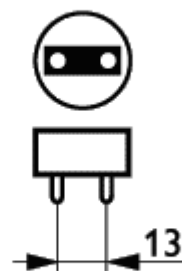
- Food service and food processing

Product data	
Product Number	165415
Full product name	F32T8/TL830 ALTO TG 1LP
Ordering Code	F32T8/TL830/ALTO TG
Pack type	1 Lamp
Pieces per Sku	1
Skus/Case	25
Pack UPC	046677165413
EAN2US	
Case Bar Code	50046677165418
Successor Product number	
Base	Medium Bi-Pin [Medium Bi-Pin Fluorescent]
Base Information	Green Base
Bulb	T8
Packing Type	1LP [1 Lamp]
Packing Configuration	25
Life with 3h/day use [years]	7an

Product data	
Type	F32T8
Feature	ALTO®
Ordering Code	F32T8/TL830/ALTO TG
Pack UPC	046677165413
Case Bar Code	50046677165418
Energy Saving	Energy Saving
Rated Avg Life [12-Hr Prog St]	36000 hr
Rated Avg Life [12-Hr Inst St]	30000 hr
Rated Avg Life [3-Hr Prog St]	30000 hr
Rated Avg Life [3-Hr Inst St]	24000 hr
Watts	32W
Mercury (Hg) Content	3.5 mg
Color Code	TL830 [CCT of 3000K]
Color Rendering Index	85 Ra8
Color Designation	TL830
Color Description	Soft White
Color Temperature	3000 K
Initial Lumens	2950 Lm
Design Mean Lumens	2800 Lm
Nominal Length [inch]	48
Special Note	TuffGuard™ [TuffGuard Coated]
Product Number	165415



F-T8-UVV Med Bipin/GB



Base Medium Bi-Pin

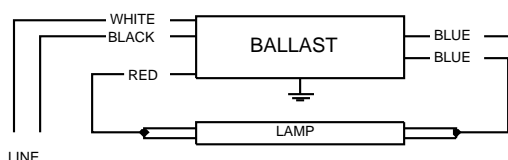
REL-2P32-SC

Brand Name	STANDARD ELEC
Ballast Type	Electronic
Starting Method	Instant Start
Lamp Connection	Parallel
Input Voltage	120
Input Frequency	60 HZ
Status	Active

Electrical Specifications

Lamp Type	Num. of Lamps	Rated Lamp Watts	Min. Start Temp (°F/C)	Input Current (Amps)	Input Power (ANSI Watts)	Ballast Factor	MAX THD %	Power Factor	MAX Lamp Current Crest Factor	B.E.F.
F17T8	2	17	0/-18	0.31	34	0.92	30	0.91	1.7	2.71
F25T8	1	25	0/-18	0.29	30	1.04	30	0.90	1.7	3.47
F25T8	2	25	0/-18	0.40	46	0.90	25	0.98	1.7	1.96
* F32T8	1	32	0/-18	0.34	38	1.10	25	0.98	1.5	2.89
F32T8	2	32	0/-18	0.49	58	0.88	20	0.99	1.7	1.52
F32T8/ES (30W)	1	30	60/16	0.31	35	1.10	25	0.93	1.7	3.14
F32T8/ES (30W)	2	30	60/16	0.46	54	0.87	20	0.98	1.7	1.61

Wiring Diagram



Diag. 68

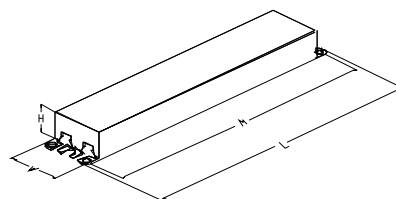
Insulate unused blue lead for 1000V

The wiring diagram that appears above is for the lamp type denoted by the asterisk (*)

Standard Lead Length (inches)

	in.	cm.		in.	cm.
Black	25L	63.5	Yellow/Blue		0
White	25L	63.5	Blue/White		0
Blue	31R	78.7	Brown		0
Red	37L	94	Orange		0
Yellow		0	Orange/Black		0
Gray		0	Black/White		0
Violet		0	Red/White		0

Enclosure



Enclosure Dimensions

OverAll (L)	Width (W)	Height (H)	Mounting (M)
9.50 "	1.7 "	1.18 "	8.90 "
9 1/2	1 7/10	1 9/50	8 9/10
24.1 cm	4.3 cm	3 cm	22.6 cm

Revised 08/21/2002



Data is based upon tests performed by Philips Lighting Electronics N.A. in a controlled environment and is representative of relative performance. Actual performance can vary depending on operating conditions. Specifications are subject to change without notice. All specifications are nominal unless otherwise noted.

PHILIPS LIGHTING ELECTRONICS N.A.

10275 WEST HIGGINS ROAD · ROSEMONT, IL 60018

Tel: 800-322-2086 · Fax: 888-423-1882 · www.philips.com/advance

Customer Support/Technical Service: 800-372-3331 · OEM Support: 866-915-5886

REL-2P32-SC	
Brand Name	STANDARD ELEC
Ballast Type	Electronic
Starting Method	Instant Start
Lamp Connection	Parallel
Input Voltage	120
Input Frequency	60 HZ
Status	Active

Electrical Specifications

Notes:

Section I - Physical Characteristics

- 1.1 Ballast shall be physically interchangeable with standard electromagnetic or standard electronic ballasts, where applicable.
- 1.2 Ballast shall be provided with integral leads color-coded per ANSI C82.11.

Section II - Performance Requirements

- 2.1 Ballast shall be _____ (Instant or Rapid) Start.
- 2.2 Ballast shall provide Independent Lamp Operation (ILO) for Instant Start ballasts allowing remaining lamp(s) to maintain full light output when one or more lamps fail.
- 2.3 Ballast shall contain auto restart circuitry in order to restart lamps without resetting power.
- 2.4 Ballast shall operate from 60 Hz input source of 120V, 277V or 347V as applicable with sustained variations of +/- 10% (voltage and frequency) with no damage to the ballast.
- 2.5 Ballast shall be high frequency electronic type and operate lamps at a frequency between 20 kHz and 30 kHz or above 42 kHz to avoid interference with infrared devices and eliminate visible flicker.
- 2.6 Ballast shall have a Power Factor greater than 0.98 for primary lamp.
- 2.7 Ballast shall have a minimum ballast factor for primary lamp application as follows: 0.75 for Low Watt, 0.85 for Normal Light Output, and 1.20 for High Light.
- 2.8 Ballast shall provide for a Lamp Current Crest Factor of 1.7 or less in accordance with lamp manufacturer recommendations.
- 2.9 Ballast input current shall have Total Harmonic Distortion (THD) of less than 20% for Standard models (with the exception of the VEL-3P32-HL-SC which has a THD of <10%) and THD of less than 10% for Centium models when operated at nominal line voltage with primary lamp.
- 2.10 Ballast shall have a Class A sound rating for all 4-foot lamps and smaller.
- 2.11 Ballast shall have a minimum starting temperature of _____ [-18C (0F) for standard T8 lamps, 10C (50F) for T8/HO, standard T12, Slimline T12 and Long Twin Tube lamps, 0C (32F) for Slimline T8, -29C (-20F) for T12/HO lamps,] for primary lamp application. Ballast shall have a minimum starting temperature of 60F (16C) for energy-saving T8 and T12 lamps.
- 2.12 Ballast shall tolerate sustained open circuit and short circuit output conditions without damage.

Section III - Regulatory Requirements

- 3.1 Ballast shall not contain any Polychlorinated Biphenyl (PCB).
- 3.2 Ballast shall be Underwriters Laboratories (UL) listed, Class P and Type 1 Outdoor; and Canadian Standards Association (CSA) certified where applicable.
- 3.3 Ballast shall comply with ANSI C62.41 Category A for Transient protection.
- 3.4 Ballast shall comply with ANSI C82.11 where applicable.
- 3.5 Ballast shall comply with the requirements of the Federal Communications Commission (FCC) rules and regulations, Title 47 CFR part 18, Non-Consumer (Class A) for EMI/RFI (conducted and radiated).

Section IV - Other

- 4.1 Ballast shall be manufactured in a factory certified to ISO 9002 Quality System Standards.
- 4.2 Ballast shall carry a five-year warranty from date of manufacture against defects in material or workmanship, including replacement, for operation at a maximum case temperature of 70C.
- 4.3 Manufacturer shall have a fifteen-year history of producing electronic ballasts for the North American market.

NOTE: The use of Optanium (IOP) and ICN-2P32-N models is recommended to reduce striation in energy-saving T8 lamps (25W, 28W or 30W).

Remote or tandem wiring of energy-saving T8 lamps (25W, 28W or 30W) is only recommended for Optanium (IOP) models.

Revised 08/21/2002



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DL51XM

RECESSED DOWNLIGHT
ROUND FIXED DEEP CONE CFL

DL51XM

Online Quick Product Page Reference: DLCAT51XM

DESCRIPTION

A Aiming

Fixed vertical lampholder

B Special Features

47% fixture efficiency with clear specular reflector; for use with CFL; deeply regressed lamp; rolled-edge baffle minimizes glare; aluminum deep cone reflector with 50° cut-off angle

C Effects Devices

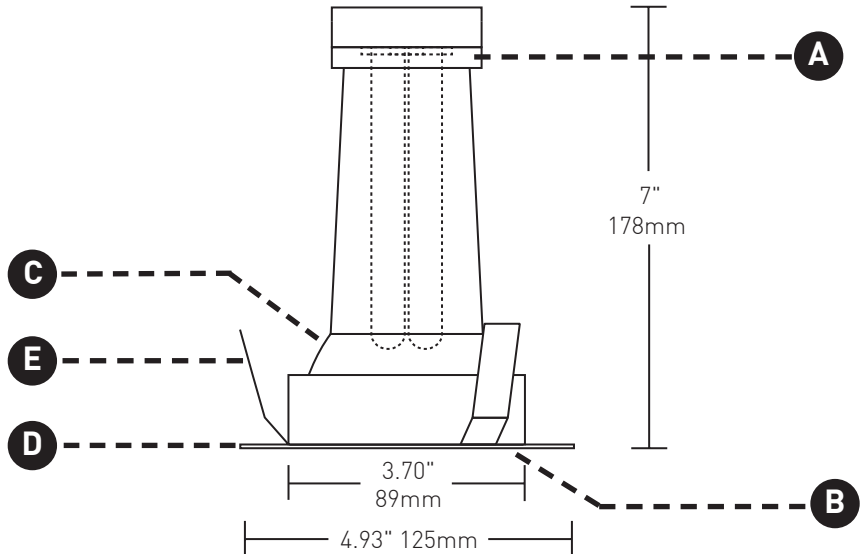
Reflector may be finished in clear stippled, clear specular or black specular

D Trim Plate

Thickness measures 0.055"; install as flange overlay

E Retention

Torsion spring clips accommodate varying ceiling thicknesses and ensure snug fit of trim against ceiling



TECHNICAL

CONSTRUCTION

Trim: Steel and aluminum; painted finishes are granulated powdercoat

LAMP

18W Compact fluorescent (CFL)

To ensure optimal results, it is recommended to specify lamps supplied by Lucifer Lighting* (see page 2)

HOUSING

See housing specifications (page 2)

LISTING

ETL listed for dry/damp locations

WARRANTY

Manufacturer's one year warranty guarantees product(s) listed to be free from defects in material workmanship under normal use and service. Warranty is conditional upon use of manufacturer supplied transformer or ballast.

ORDERING INFORMATION (downlight)

Example: DL51XM-W-CR-CFL

DL51XM			
SERIES	TRIM PLATE FINISH	REFLECTOR FINISH	LIGHT SOURCE
DL51XM	W Matte White B Matte Black C Polished Chrome IG Industrial Gray SS Brushed Stainless Steel	SR Clear Stippled CR Clear Specular BR Black Specular	CFL Compact Fluorescent

Example: 120-18-CF-27

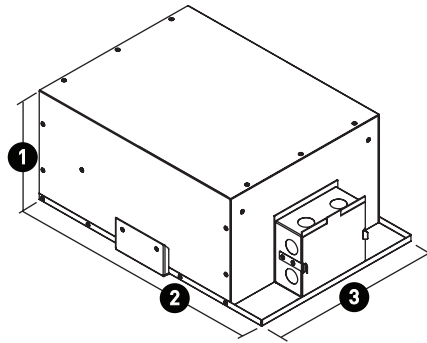
*	
LAMP	
* Optional (see page 2)	

UNIVERSAL HOUSINGS

DL51XM

IC

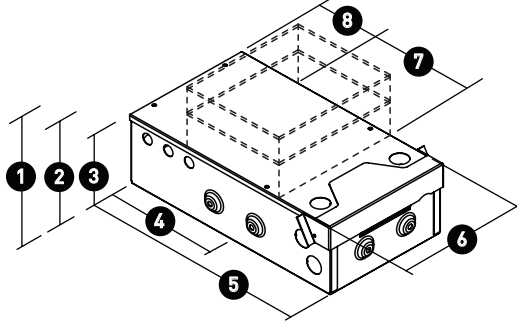
For use with recessed downlights in IC accessible and non-accessible ceilings up to 1" thick. Transformer compartment and all splice connections may be serviced from room side. Certified Chicago Plenum and ASTM E283 Airtight. Hanging bars are included and can be fitted to all sides of the housing.



- 1 7" / 177mm
- 2 16.3" / 413mm
- 3 10.9" / 276mm

NON-IC

For use with recessed downlights in non-IC, non-accessible ceilings up to 1" thick. Transformer compartment and all splice connections serviceable from room side. Hanging bars are included and can be fitted to all sides of the housing for installation in spaces as narrow as 9".



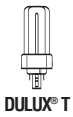
- 1 7" / 177mm (CFL)
- 2 5.04" / 128mm (HID)
- 3 3.7" / 94mm (HAL)
- 4 6.25" / 159mm
- 5 12" / 305mm
- 6 6.8" / 172mm
- 7 6.3" / 160mm
- 8 3.25" / 83mm

ORDERING INFORMATION (housing)

Example: DH-IC-XF-CFL-18-UNI					
HOUSING	RATING	SERIES	LIGHT SOURCE	MAX WATTS	POWER SUPPLY (primary)
DH	IC, Airtight, CCEA NIC Non-IC	XF X Series Flange Overlay	CFL Compact Fluorescent	18 W	UNI Universal

ORDERING INFORMATION (lamps)*

120-18-CF-27 18W 2700° Compact Fluorescent



DULUX® D/E 4-PIN ECOLOGIC® COMPACT FLUORESCENT LAMPS

Nominal Wattage	Bulb	MOL		Base	Product Number	Ordering Abbreviation	NEMA Generic Designation	Pkg Qty	Avg Rated Life (hrs)	CCT (K)	CRI	Approx Lumens		Symbols & Footnotes
		(in)	(mm)									Initial @25°C/77°F	Mean @35°C/95°F	
26	T (T4)	5.2	124	GX24Q-3	20767	CF26DT/E/827/ECO	CFTR26W/GX24Q/827	50	12000	2700	82	1800	1548	1,2,5,6,7,12,20
					20995	CF26DT/E/835/ECO/BL/1	CFTR26W/GX24Q/835	50	12000	3500	82	1800	1548	1,2,5,6,7,12,20
32	T (T4)	5.8	147	GX24Q-3	20768	CF32DT/E/827/ECO	CFTR32W/GX24Q/827	50	12000	2700	82	2400	2064	1,2,5,6,7,12,18,20

DULUX T/E/IN AMALGAM, 4-PIN ECOLOGIC COMPACT FLUORESCENT LAMPS

For electronic ballast for high and low temperature applications. Lamps have End-of-Lamp Life (EOL) Protection

Nominal Wattage	Bulb	MOL		Base	Product Number	Ordering Abbreviation	NEMA Generic Designation	Pkg Qty	Avg Rated Life (hrs)	CCT (K)	CRI	Approx Lumens		Symbols & Footnotes
		(in)	(mm)									Initial @25°C/77°F	Mean @35°C/95°F	
18	T (T4)	4.4	111	GX24Q-2	20875	CF18DT/E/IN/827/ECO	CFTR18W/GX24Q/827	50	12000	2700	82	1164	1001	1,2,5,6,7,12,20,21
					20876	CF18DT/E/IN/830/ECO	CFTR18W/GX24Q/830	50	12000	3000	82	1164	1001	1,2,5,6,7,12,20,21
					20877	CF18DT/E/IN/835/ECO	CFTR18W/GX24Q/835	50	12000	3500	82	1164	1001	1,2,5,6,7,12,20,21
					20878	CF18DT/E/IN/841/ECO	CFTR18W/GX24Q/841	50	12000	4100	82	1164	1001	1,2,5,6,7,12,20,21
26	T (T4)	5.0	126	GX24Q-3	20879	CF26DT/E/IN/827/ECO	CFTR26W/GX24Q/827	50	12000	2700	82	1746	1501	1,2,5,6,7,12,20,21
					20880	CF26DT/E/IN/830/ECO	CFTR26W/GX24Q/830	50	12000	3000	82	1746	1501	1,2,5,6,7,12,20,21
					20881	CF26DT/E/IN/835/ECO	CFTR26W/GX24Q/835	50	12000	3500	82	1746	1501	1,2,5,6,7,12,20,21
					20882	CF26DT/E/IN/841/ECO	CFTR26W/GX24Q/841	50	12000	4100	82	1746	1501	1,2,5,6,7,12,20,21
32	T (T4)	5.6	142	GX24Q-3	20883	CF32DT/E/IN/827/ECO	CFTR32W/GX24Q/827	50	12000	2700	82	2328	2002	1,2,5,6,7,12,18,20,21
					20884	CF32DT/E/IN/830/ECO	CFTR32W/GX24Q/830	50	12000	3000	82	2328	2002	1,2,5,6,7,12,18,20,21
					20885	CF32DT/E/IN/835/ECO	CFTR32W/GX24Q/835	50	12000	3500	82	2328	2002	1,2,5,6,7,12,18,20,21
					20886	CF32DT/E/IN/841/ECO	CFTR32W/GX24Q/841	50	12000	4100	82	2328	2002	1,2,5,6,7,12,18,20,21
42	T (T4)	6.5	163	GX24Q-4	20887	CF42DT/E/IN/827/ECO	CFTR42W/GX24Q/827	50	12000	2700	82	3104	2670	1,2,5,6,7,12,18,20,21
					20888	CF42DT/E/IN/830/ECO	CFTR42W/GX24Q/830	50	12000	3000	82	3104	2670	1,2,5,6,7,12,18,20,21
					20871	CF42DT/E/IN/835/ECO	CFTR42W/GX24Q/835	50	12000	3500	82	3104	2670	1,2,5,6,7,12,18,20,21
					20890	CF42DT/E/IN/841/ECO	CFTR42W/GX24Q/841	50	12000	4100	82	3104	2670	1,2,5,6,7,12,18,20,21
57	T (T4)	7.76	197	GX24Q-5	20895	CF57DT/E/IN/827/ECO	CFTR57W/GX24Q/827	50	12000	2700	82	4171	3587	1,2,5,6,12,18,20,21
					20896	CF57DT/E/IN/830/ECO	CFTR57W/GX24Q/830	50	12000	3000	82	4171	3587	1,2,5,6,12,18,20,21
					20897	CF57DT/E/IN/835/ECO	CFTR57W/GX24Q/835	50	12000	3500	82	4171	3587	1,2,5,6,12,18,20,21

COMPACT FLUORESCENT

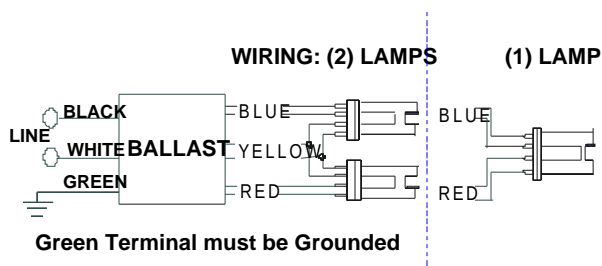
RCF-2S18-H1-LD-QS

Brand Name	AMBISTAR - HPF
Ballast Type	Electronic
Starting Method	Rapid Start
Lamp Connection	Series
Input Voltage	120
Input Frequency	60 HZ
Status	Active

Electrical Specifications

Lamp Type	Num. of Lamps	Rated Lamp Watts	Min. Start Temp (°F/C)	Input Current (Amps)	Input Power (ANSI Watts)	Ballast Factor	MAX THD %	Power Factor	MAX Lamp Current Crest Factor	B.E.F.
CFQ18W/G24Q	1	18	0/-18	0.16	19	1.00	10	0.98	1.7	5.26
CFQ18W/G24Q	2	18	0/-18	0.30	35	0.95	10	0.98	1.7	2.71
CFTR18W/GX24Q	1	18	0/-18	0.17	20	1.05	10	0.98	1.7	5.25
* CFTR18W/GX24Q	2	18	0/-18	0.33	39	1.05	10	0.98	1.7	2.69

Wiring Diagram

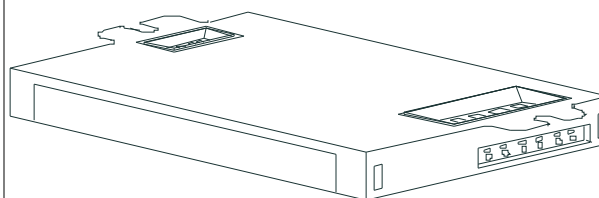


The wiring diagram that appears above is for the lamp type denoted by the asterisk (*)

Standard Lead Length (inches)

	in.	cm.		in.	cm.
Black	0	0	Yellow/Blue		0
White	0	0	Blue/White		0
Blue	0	0	Brown		0
Red	0	0	Orange		0
Yellow	0	0	Orange/Black		0
Gray		0	Black/White		0
Violet		0	Red/White		0

Enclosure



Enclosure Dimensions

OverAll (L)	Width (W)	Height (H)	Mounting (M)
4.98 "	2.4 "	1.0 "	4.6 "
4 49/50	2 2/5	1	4 3/5
12.6 cm	6.1 cm	2.5 cm	11.7 cm

Revised 09/10/2007



Data is based upon tests performed by Philips Lighting Electronics N.A. in a controlled environment and is representative of relative performance. Actual performance can vary depending on operating conditions. Specifications are subject to change without notice. All specifications are nominal unless otherwise noted.

PHILIPS LIGHTING ELECTRONICS N.A.

10275 WEST HIGGINS ROAD · ROSEMONT, IL 60018

Tel: 800-322-2086 · Fax: 888-423-1882 · www.philips.com/advance

Customer Support/Technical Service: 800-372-3331 · OEM Support: 866-915-5886

RCF-2S18-H1-LD-QS	
Brand Name	AMBISTAR - HPF
Ballast Type	Electronic
Starting Method	Rapid Start
Lamp Connection	Series
Input Voltage	120
Input Frequency	60 HZ
Status	Active

Electrical Specifications

Notes:

Section I - Physical Characteristics

- 1.1 Ballast shall be physically interchangeable with standard electromagnetic or standard electronic ballasts, where applicable.
- 1.2 Ballast shall be provided with integral leads or poke-in wire trap connectors color coded per ANSI C82.11.

Section II - Performance Requirements

- 2.1 Ballast shall be Rapid Start.
- 2.2 Ballast shall contain auto restart circuitry in order to restart lamps without resetting power
- 2.3 Ballast shall operate from 60 Hz input source of 120V with sustained variations of +/- 10% (voltage and frequency) with no damage to the ballast.
- 2.4 Ballast shall be high frequency electronic type and operate lamps at a frequency above 42 kHz to avoid interference with infrared devices and eliminate visible flicker.
- 2.5 Ballast shall have a Power Factor greater than 0.98 for primary lamp.
- 2.6 Ballast shall have a minimum ballast factor for primary lamp as follows: 0.85 for linear lamps or 1.0 for CFL lamps.
- 2.7 Ballast shall provide for a Lamp Current Crest Factor of 1.7 or less in accordance with lamp manufacturer recommendations.
- 2.8 Ballast input current shall have Total Harmonic Distortion (THD) of less than 20% when operated at nominal line voltage with primary lamp.
- 2.9 Ballast shall have a Class A sound rating.
- 2.10 Ballast shall have a minimum starting temperature for primary lamp as follows: 0°F/-18°C for CFL lamps or 50°F/10°C for standard T12 lamps and 60°F/16°C for energy-saving T12 lamps.
- 2.11 Ballast shall provide Lamp EOL Protection Circuit for CFL lamps.
- 2.12 Ballast shall tolerate sustained open circuit and short circuit output conditions without damage.

Section III - Regulatory Requirements

- 3.1 Ballast shall not contain any Polychlorinated Biphenyl (PCB).
- 3.2 Ballast shall be Underwriters Laboratories (UL) listed, Class P and Type 1 Outdoor; and Canadian Standards Association (CSA) certified where applicable.
- 3.3 Ballast for CFL lamps shall be rated for use in air-handling spaces.
- 3.4 Ballast shall comply with ANSI C62.41 Category A for Transient protection.
- 3.5 Ballast shall comply with ANSI C82.11 where applicable.
- 3.6 Ballast shall comply with the requirements of the Federal Communications Commission (FCC) rules and regulations, Title 47 CFR part 18, Consumer (Class B) for EMI/RFI (conducted and radiated).

Section IV - Other

- 4.1 Ballast shall be manufactured in a factory certified to ISO 9002 Quality System Standards.
- 4.2 Ballast shall carry a three-year warranty from date of manufacture against defects in material or workmanship, including replacement, for operation at a maximum case temperature of 70°C for RELB models or 85°C for RCF models.
- 4.3 Manufacturer shall have a fifteen-year history of producing electronic ballasts for the North American market.
- 4.4 Ballast shall meet the ballast-controlled performance requirements in the ENERGY STAR Program Requirements for Residential Lite Fixtures.

Revised 09/10/2007



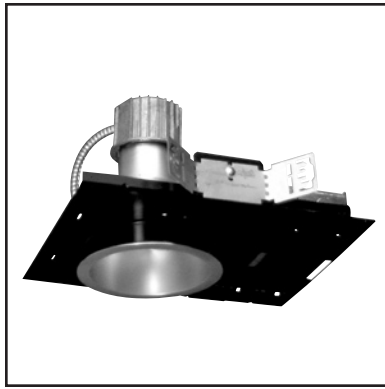
Data is based upon tests performed by Philips Lighting Electronics N.A. in a controlled environment and is representative of relative performance. Actual performance can vary depending on operating conditions. Specifications are subject to change without notice. All specifications are nominal unless otherwise noted.

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6" Vertical Quad Open & Wall Wash Downlights

CFQ613 CFQ618 CFQ626

One 13W, 18W, 26W Quad Tube
2-Pin Lamp
Non-IC Rated
120V, 277V or 347V

DATE: _____ TYPE: _____

FIRM NAME: _____

PROJECT: _____

Architektür

Ceiling Cutout: 6 1/4"
Maximum Ceiling Thickness: 1 1/4"
For conversion to millimeters,
multiply inches by 25.4
Not to Scale

Featuring **VirtualSource** Reflectors

APPLICATIONS:

The CFQ6 series offers vertical lamped compact fluorescent downlight and wall wash fixtures that provide superior brightness and glare control. This series is ideal for a wide variety of low to medium height ceiling applications including commercial, retail, and hospitality. The CFQ6 series is compatible with the Signos6 family of architectural elements.

HOUSING:

One-piece painted 18-gauge cold rolled steel platform. Prewired J-box with snap-on cover for easy access. Ballast and socket wire connections made with Mate-N-Lock connectors. Vented at lamp tip and socket for maximum light output. Same housing accommodates downlight and wall wash downlight reflectors. Diecast aluminum heat sink with patented twist and lock mechanism that ensures accurate and stable lamp location.

REFLECTOR:

High purity aluminum Alzak Virtual Source® iridescence suppressed reflector. Self-trim standard. Painted white self-trim available. Baffled units standard with painted white self-trim. Optical system provides excellent glare and brightness control for visual comfort.

BALLAST:

One (1) 13W, 18W, or 26W compact fluorescent encased and potted Class 'P' magnetic ballast. HPF standard. 120V or 277V. Contact factory for 347V. Accessible from below ceiling.

LAMP:

One (1) 13W (GX23-2 base), 18W (G24d-2 base), or 26W (G24d-3 base) 2-pin quad tube compact fluorescent lamp. Lamp furnished by others.

SOCKET:

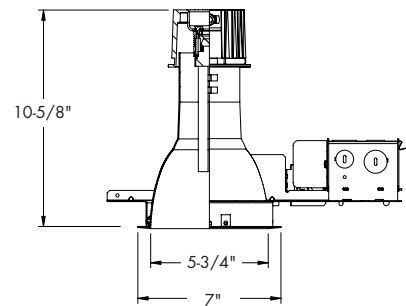
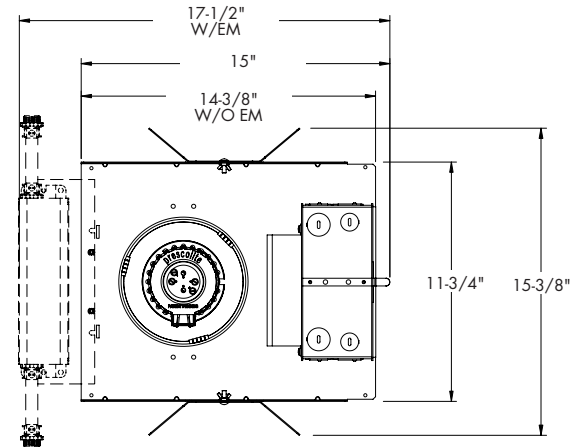
One (1) injection molded socket (vented). Adjusts to three positions, accommodating various lamp sizes and ensuring proper lamp position.

INSTALLATION:

Universal adjustable mounting brackets accommodate 1 1/2" or 3/4" lathing channel or 1/2" EMT (by others), or Prescolite 24" bar hangers (B24 or B6).

LABELS:

UL, CSA listed for damp locations
Approved for through wiring
Non-type I.C.



CATALOG NUMBER:

EXAMPLE: CFQ613120V STF602MFC B6

HOUSINGS	HOUSING OPTIONS	HOUSING OPTIONS	REFLECTORS	REFLECTOR COLOR	REFLECTOR OPTIONS	ACCESSORIES
<input type="checkbox"/> CFQ613 (120V, 277V) 6", (1) 13W Quad tube, HPF magnetic ballast <input type="checkbox"/> CFQ618 (120V, 277V) 6", (1) 18W Quad tube, HPF magnetic ballast <input type="checkbox"/> CFQ626 (120V, 277V) 6", (1) 26W Quad tube, HPF magnetic ballast	<input type="checkbox"/> 347V (Contact factory) <input type="checkbox"/> CP Chicago Plenum. Fixture construction and/or specifications may vary. Refer to Chicago Plenum specification sheets on www.prescolite.com for details.	<input type="checkbox"/> EM Emergency battery pack with integral switch and indicator light <input type="checkbox"/> FSDFA Fuse kit installed at factory <input type="checkbox"/> RIF1 Radio interference filter (single circuit)	<input type="checkbox"/> STF602 6" Alzak reflector <hr/> REFLECTOR FINISH <input type="checkbox"/> Blank Specular <input type="checkbox"/> SS Semi-Specular <input type="checkbox"/> MFC American Matte™	<input type="checkbox"/> Blank Clear Alzak <input type="checkbox"/> CG Champagne Gold Alzak <input type="checkbox"/> BL Black Alzak <input type="checkbox"/> WE Wheat Alzak <input type="checkbox"/> LW Light Wheat Alzak <input type="checkbox"/> PW Pewter Alzak	<input type="checkbox"/> WT Painted white self-flange <input type="checkbox"/> BC¹ Painted black cone <input type="checkbox"/> WC¹ Painted white cone <input type="checkbox"/> BB Painted black baffle <input type="checkbox"/> WB Painted white baffle <input type="checkbox"/> WW Wall wash reflector <input type="checkbox"/> TRG Trim Ring Gasket (factory installed)	<input type="checkbox"/> B24 Set of two (2) 24" bar hangers for T-bar ceilings <input type="checkbox"/> B6 Set of two (2) bar hangers for ceiling joists up to 24" centers <input type="checkbox"/> FSDFI Fuse kit for field installation <input type="checkbox"/> SCA6D_ Sloped ceiling adapter (see note on back page) <input type="checkbox"/> Signos6 Architectural glass elements Refer to specification sheets ARCH-SIG-001 through -004

¹Not available with MFC or Semi-specular finish.

In a continuing effort to offer the best product possible we reserve the right to change, without notice, specifications or materials that in our opinion will not alter the function of the product.
Web: **www.prescolite.com** • Tech Support: **(888) 777-4832**

PHOTOMETRIC DATA

Architektür - 6" Vertical Quad Open & Wall Wash Downlights - CFQ Series

BALLAST DATA	13W Quad		18W Quad		26W Quad	
	120V	277V	120V	277V	120V	277V
Total System Watts	17W	19W	24W	22W	32W	30W
Input Current (Amps)	0.32	0.16	0.42	0.17	0.56	0.23
Power Factor	95%	96%	95%	96%	95%	94%

LUMINANCE DATA IN CANDELA/SQ. METER	
Angle in Vertical	Average
0°	
45°	20748
55°	17009
65°	10433
75°	18
85°	0

LAMP DATA

	13W Quad	18W Quad	26W Quad
Rated Watts	13W Quad	18W Quad	26W Quad
Rated Lumens	860	1250	1800
Efficacy (LPW)	67	69	69
Rated Life	10,000 hours	10,000 hours	10,000 hours
CRI	82	82	82
Minimum Starting Temp.	32° F	15° F	15° F

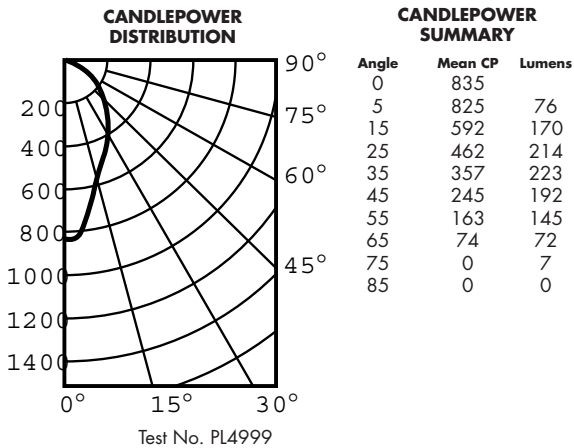
AVERAGE INITIAL FOOTCANDLES

Multiple Units (Square Array)
Ceiling 80% Wall 50% Floor 20%

26W Quad			
SPACING	RCR1	RCR3	RCR7
7.0	24	19	13
8.0	18	15	10
9.0	14	11	8
10.0	11	9	6
11.0	9	8	5

CFQ626-STF602 with Clear Alzak Reflector Lower Position

Lamp: One 26W Quad
Spacing Criteria: .7
Efficiency: 61.1%



COEFFICIENTS OF UTILIZATION Zonal Cavity Method

Room Cavity Ratio	% Effective Floor Cavity Reflectance										
	80%		70%		50%		30%		10%		
	20% Effective Floor Cavity Reflectance										
	% Wall Reflectance										
	70	50	30	10	70	50	30	10	50	30	10
1	.69	.67	.65	.63	.67	.65	.64	.62	.63	.61	.60
2	.64	.61	.58	.55	.63	.60	.57	.55	.58	.56	.54
3	.60	.55	.52	.49	.59	.55	.51	.49	.53	.50	.48
4	.56	.51	.47	.44	.55	.50	.47	.43	.49	.45	.43
5	.53	.47	.42	.39	.51	.46	.42	.39	.45	.41	.38
6	.49	.43	.38	.35	.48	.42	.38	.35	.41	.37	.35
7	.46	.39	.34	.31	.45	.38	.34	.31	.38	.34	.31
8	.43	.36	.31	.28	.42	.35	.31	.28	.35	.31	.28
9	.40	.33	.29	.26	.39	.33	.29	.26	.32	.28	.25
10	.38	.31	.26	.23	.37	.30	.26	.23	.30	.26	.23

CFQ626-STF602

Test No. PL4999

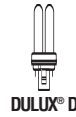
NOTES

☉ Denotes a Virtual Source reflector.

Refer to www.prescolite.com for additional photometric tests (IES Files).

When ordering a sloped ceiling adapter, specify the degree of slope in 5° increments, max. of 35°. For a more precise degree or wet ceiling applications, please contact factory. Sloped ceiling adapter and housing must be installed at the same time.





DULUX S/E 4-PIN COMPACT FLUORESCENT LAMPS

for Dimming and Electronic Ballast. Lamps have End-of-lamp Life (EOL) Protection

Nominal Wattage	Bulb	MOL		Base	Product Number	Ordering Abbreviation	NEMA Generic Designation	Pkg Qty	Avg Rated Life (hrs)	CCT (K)	CRI	Approx Lumens @25°C/77°F		Symbols & Footnotes
		(in)	(mm)									Initial	Mean	
5	S (T4)	3.4	85	2G7	20311	CF5DS/E/827	CFT5W/2G7/827	50	10000	2700	82	230	198	1,2,5,12,16,20
					20315	CF5DS/E/841	CFT5W/2G7/841	50	10000	4100	82	230	198	1,2,5,12,16,20
7	S (T4)	4.5	115	2G7	20312	CF7DS/E/827	CFT7W/2G7/827	50	10000	2700	82	400	344	1,2,5,12,16,20
					20316	CF7DS/E/841	CFT7W/2G7/841	50	10000	4100	82	400	344	1,2,5,12,16,20
9	S (T4)	5.7	145	2G7	20313	CF9DS/E/827	CFT9W/2G7/827	50	10000	2700	82	580	499	1,2,5,12,20
					20317	CF9DS/E/841	CFT9W/2G7/841	50	10000	4100	82	580	499	1,2,5,12,20
13	S (T4)	6.2	157	2GX7	20314	CF13DS/E/827	CFT13W/2GX7/827	50	10000	2700	82	800	688	1,2,5,12,20
					20284	CF13DS/E/830	CFT13W/2GX7/830	50	10000	3000	82	800	688	1,2,5,12,20
					20318	CF13DS/E/841	CFT13W/2GX7/841	50	10000	4100	82	800	688	1,2,5,12,20

DULUX D PREHEAT 2-PIN ECOLOGIC® COMPACT FLUORESCENT LAMPS

With starter in Lamp Base for Magnetic Ballast

Nominal Wattage	Bulb	MOL		Base	Product Number	Ordering Abbreviation	NEMA Generic Designation	Pkg Qty	Avg Rated Life (hrs)	CCT (K)	CRI	Approx Lumens @25°C/77°F		Symbols & Footnotes
		(in)	(mm)									Initial	Mean	
9	D (T4)	4.3	110	G23-2	20537	CF9DD/827/RP/ECO	CFQ9W/G23/827	10	10000	2700	82	525	452	1,4,6,11,12,20,22
					20689	CF9DD/827/ECO	CFQ9W/G23/827	50	10000	2700	82	525	452	1,4,6,11,12,20,22
					20783	CF9DD/830/ECO	CFQ9W/G23/830	50	10000	3000	82	525	452	1,4,6,11,12,20,22
					20690	CF9DD/835/ECO	CFQ9W/G23/835	50	10000	3500	82	525	452	1,4,6,11,12,20,22
13	D (T4)	4.6	118	GX23-2	20691	CF13DD/827/ECO	CFQ13W/GX23/827	50	10000	2700	82	780	671	1,4,6,11,12,20,22
					20705	CF13DD/830/ECO	CFQ13W/GX23/830	50	10000	3000	82	780	671	1,4,6,11,12,20,22
					20692	CF13DD/835/ECO	CFQ13W/GX23/835	50	10000	3500	82	780	671	1,4,6,11,12,20,22
					20708	CF13DD/841/ECO	CFQ13W/GX23/841	50	10000	4100	82	780	671	1,4,6,11,12,20,22
18	D (T4)	6.0	153	G24D-2	20676	CF18DD/827/ECO	CFQ18W/G24D/827	50	10000	2700	82	1150	989	1,4,6,11,12,20,22
					20709	CF18DD/830/ECO	CFQ18W/G24D/830	50	10000	3000	82	1150	989	1,4,6,11,12,20,22
					20677	CF18DD/835/ECO	CFQ18W/G24D/835	50	10000	3500	82	1150	989	1,4,6,11,12,20,22
					20678	CF18DD/841/ECO	CFQ18W/G24D/841	50	10000	4100	82	1150	989	1,4,6,11,12,20,22
26	D (T4)	6.8	173	G24D-3	20679	CF26DD/827/ECO	CFQ26W/G24D/827	50	10000	2700	82	1710	1470	1,4,6,11,12,20,22
					20710	CF26DD/830/ECO	CFQ26W/G24D/830	50	10000	3000	82	1710	1470	1,4,6,11,12,20,22
					20680	CF26DD/835/ECO	CFQ26W/G24D/835	50	10000	3500	82	1710	1470	1,4,6,11,12,20,22
					20681	CF26DD/841/ECO	CFQ26W/G24D/841	50	10000	4100	82	1710	1470	1,4,6,11,12,20,22

COMPACT FLUORESCENT

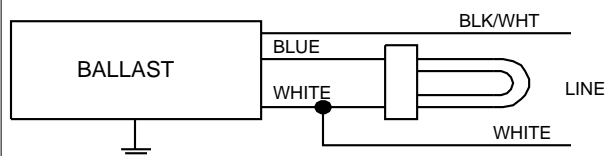
H-1B13-TP-BLS

Brand Name	COMPACT-HPF
Ballast Type	Magnetic
Starting Method	Pre-Heat
Lamp Connection	Series
Input Voltage	120
Input Frequency	60 HZ
Status	Active

Electrical Specifications

Lamp Type	Num. of Lamps	Rated Lamp Watts	Min. Start Temp (°F/C)	Input Current (Amps)	Starting Current (Amps)	Open Circuit (Amps)	Input Power (Watts)	Ballast Factor	MAX THD %	Power Factor
* CFQ13W/GX23	1	13	32/00	0.14	0.36	0.22	16	0.91	25	0.95
CFT13W/GX23	1	13	32/00	0.13	0.36	0.22	16	0.89	25	1.01

Wiring Diagram



Diag. 47

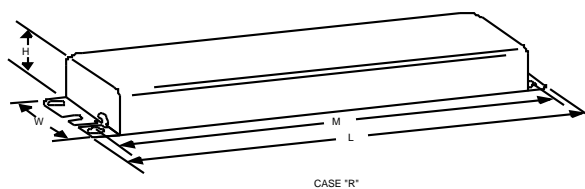
The wiring diagram that appears above is for the lamp type denoted by the asterisk (*)

Standard Lead Length (inches)

	in.	cm.
Black		
White	7	
Blue	7	
Red		
Yellow		
Gray		
Violet		

	in.	cm.
Yellow/Blue		
Blue/White		
Brown		
Orange		
Orange/Black		
Black/White	7	
Red/White		

Enclosure



Enclosure Dimensions

OverAll (L)	Width (std)/(TP)	Height (H)	Mounting (M)
4.25 "	2.00 "	1.4375 "	3.5625 "
4 1/4	2	1 7/16	3 9/16
10.8 cm	5.1 cm / 0 cm	3.7 cm	9 cm

Revised 09/21/1999



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Customer Support/Technical Service: 800-372-3331 · OEM Support: 866-915-5886

DESCRIPTION

Low brightness 7 3/8" aperture reflector for use with 42W Triple tube 4-pin lamps. The precisely formed non-imaging reflector ensures 45° cutoff to lamp and lamp image and the one piece design eliminates light leaks at the ceiling. Standard features include low iridescent finish on all reflector colors (to eliminate "rainbowing") and one electronic preheat rapid start ballast. Venting ensures maximum lamp life and lumen output. Optics offer unparalleled performance in glare free lighting with a smooth beam devoid of hot spots; its performance rivals that of larger aperture twin tube and quad tube units. Medium beam, wide beam reflectors and open wall wash trims are interchangeable within the same housing.

SPECIFICATION FEATURES

A...Reflector

Low iridescent Alzak® finishes in specular clear, haze, straw and wheat, .050" thick aluminum, in a one piece spun macrofocal parabolic contour. Positive reflector mounting

pulls trim tight to ceiling. Other finish options available upon request.

B...Trim Ring Options

High impact polymer with satin white finish, metal trim, rimless trim or self flanged reflector.

C...Socket Cap

One piece vented and finned die cast aluminum cap for maximum thermal performance.

D...Housing Mounting Frame

One piece precision die cast aluminum 1 1/2" deep collar accommodates varying dimensions of ceiling materials.

E...Universal Mounting Bracket

Accepts 1/2" EMT, C Channel, T bar fasteners, and bar hangers. Adjusts 5" vertically from above or below ceiling.

F...Conduit Fittings

Die cast screw tight connectors.

G...Junction Box

Listed for eight #12AWG (four in, four out) 90°C conductors feed through branch wiring. 1/2" and two 3/4" pry outs. Positioned to allow straight conduit runs. Access to junction box by removing reflector.

H...Socket

4 pin G24q4 base with fatigue free stainless steel lamp spring ensures positive lamp retention.

I...Electronic Ballast

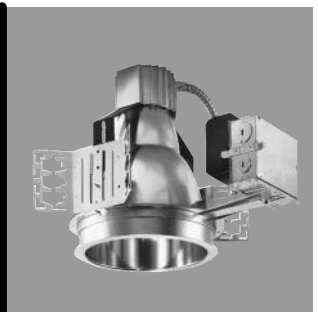
Thermally protected, fused, encased and potted electronic ballast provides full light output and rated lamp life. Provides flicker free and noise free operation and starting.

Labels

U.L. listed, C.S.A. certified, standard damp label, IBEW union made.

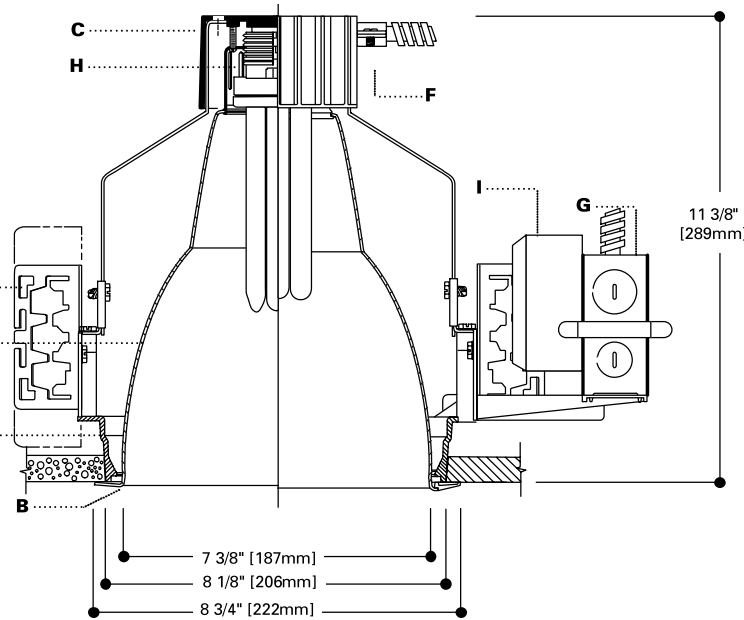
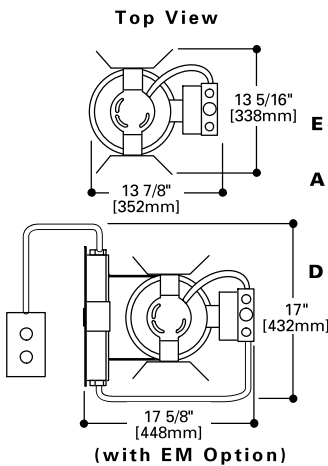
Options & Accessories

TRM=Metal Trim Rings to replace polymer trim ring
TRR=Rimless Trim Rings for minimal flange appearance in plaster ceilings



C7042-7400

42W Triple Compact Fluorescent
7 3/8" MEDIUM BEAM OPEN REFLECTOR



42W Triple 4-pin

Ballast: Electronic
120V Input Watts: 51
Line Amps: 0.30
277 Input Watts: 51
Line Amps: 0.13
Power Factor: >.99
THD: <10%
Min. Starting Temp: -10°C (15°F)
Sound Rating: A

Luminaire Efficacy Rating:
C7042-7400=32.63

NOTES:

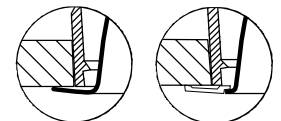
Accessories should be ordered separately.
For additional options please consult your Cooper Lighting Representative.
Alzak is a registered trademark of Aluminum Company of America.

ORDERING INFORMATION

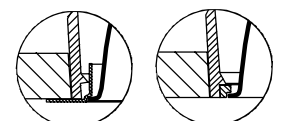
SAMPLE NUMBER: C7042E-7400LI

Complete unit consists of housing, ballast and trim.

Housing	Ballast	Trims	Color	Accessories
C7042				
<p>C7042 C7042CP *Chicago Plenum (supplied with gasketed wiring enclosure to comply with Chicago electrical code for air return plenums)</p>	<p>E, EEM*, ECP*=120V through 277V Electronic 3E=347V Electronic 1D, 1DCP*=120V Dimming 2D, 2DCP*=277V Dimming DLS1=120V to 277V Digital Lighting System (See DLS Section for details) *EM=Emergency Module Option *CP=Chicago Plenum Option</p>	<p>7400=Reflector with Polymer Trim 7401=Self Flanged Reflector</p>	<p>LI=Specular Clear, Low Iridescent H=Haze S=Straw WH=Wheat</p>	<p>Trim Rings TRM8-P=White TRM8-MB=Black TRR8=Rimless Slope Ceiling Adapter HSA-7-XX=Specify Slope 1 1/2" C-Channel Bar Hangers HB26=26" Long HB50=50" Long</p>
D=Lutron Hi-Lume® (or 100% compatible) ballast.				



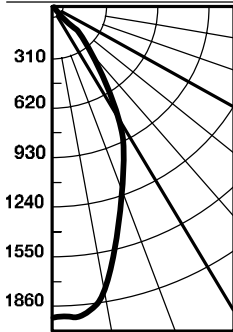
Self Flanged Reflector Polymer Trim Ring



Metal Trim Ring Rimless Trim Ring

PHOTOMETRICS

Candlepower Distribution



Test No. H23274
C7042-7000LI
Medium Beam Reflector
 Lamp=42W TTT
 Lumens=3200
 Spacing
 Criterion=0.8
 Efficiency=48.9%

Candlepower

Deg.	CD
0	1876
5	1902
15	1418
25	975
35	630
45	130
55	7
65	0
75	0
85	0
90	0

Average Luminance

Deg.	CD/SQ M
45	6668
55	443
65	86
75	0
85	0

Cone of Light

Distance to Illuminated Plane	Initial Nadir Footcandles	Beam Diameter
5'6"	62	4'0"
6'6"	44	5'0"
8'0"	29	6'0"
10'0"	19	7'6"
12'0"	13	9'0"
14'0"	10	10'6"

Beam diameter is to 50% of maximum footcandles, rounded to the nearest half-foot.

Footcandle values are initial, apply appropriate light loss factors where necessary.

Reflector Multiplier:
 Haze=.95
 Straw=.9
 Wheat=.9

EM Multiplier (in emergency mode)
 EM=.27

Zonal Lumen Summary

Zone	Lumens	%Lamp	%Luminaire
0-30	1023	32.0	65.4
0-40	1421	44.4	90.8
0-60	1562	48.8	99.8
0-90	1565	48.9	100.0
90-180	0	0.0	0.0
0-180	1565	48.9	100.0

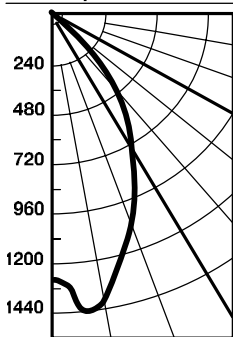
Coefficient of Utilization

rc	80%				70%			50%		30%		10%		0%	
	rw	70	50	30	10	50	30	10	50	10	50	10	50	10	0
RCR															
0	58	58	58	58	57	57	57	54	54	52	52	50	50	49	
1	56	55	54	53	54	53	52	52	50	50	49	48	47	46	
2	54	51	50	48	51	49	48	49	47	48	46	46	45	44	
3	51	49	46	45	48	46	44	47	44	46	43	44	42	42	
4	49	46	44	42	45	43	42	44	41	43	41	43	40	39	
5	47	43	41	39	43	41	39	42	38	41	38	41	38	37	
6	45	41	38	37	41	38	37	40	36	39	36	39	36	35	
7	43	39	36	34	38	36	34	38	34	37	34	37	34	33	
8	41	36	34	32	36	34	32	36	32	35	32	35	32	31	
9	39	34	32	30	34	32	30	34	30	33	30	33	29	29	
10	37	32	30	28	32	30	28	32	28	31	28	31	28	27	

rc=Ceiling reflectance, rw=Wall reflectance, RCR=Room cavity ratio

CU Data Based on 20% Effective Floor Cavity Reflectance.

Candlepower Distribution



Test No. H23275
C7042-7000LI
Medium Beam Reflector
 Lamp=42W PLT
 Lumens=3200
 Spacing
 Criterion=1.0
 Efficiency=41.8%

Candlepower

Deg.	CD
0	1296
5	1443
15	1283
25	917
35	574
45	40
55	6
65	1
75	0
85	0
90	0

Average Luminance

Deg.	CD/SQ M
45	2052
55	379
65	89
75	0
85	0

Cone of Light

Distance to Illuminated Plane	Initial Nadir Footcandles	Beam Diameter
5'6"	43	5'6"
6'6"	31	6'6"
8'0"	20	8'0"
10'0"	13	9'6"
12'0"	9	11'6"
14'0"	7	13'6"

Beam diameter is to 50% of maximum footcandles, rounded to the nearest half-foot.

Footcandle values are initial, apply appropriate light loss factors where necessary.

Reflector Multiplier:
 Haze=.95
 Straw=.9
 Wheat=.9

EM Multiplier (in emergency mode)
 EM=.27

Zonal Lumen Summary

Zone	Lumens	%Lamp	%Luminaire
0-30	920	28.7	68.7
0-40	1270	39.7	94.8
0-60	1336	41.7	99.7
0-90	1339	41.8	100.0
90-180	0	0.0	0.0
0-180	1339	41.8	100.0

Coefficient of Utilization

rc	80%				70%			50%		30%		10%		0%	
	rw	70	50	30	10	50	30	10	50	10	50	10	50	10	0
RCR															
0	50	50	50	50	49	49	49	46	46	45	45	43	43	42	
1	48	47	46	45	46	45	44	44	43	43	42	41	41	40	
2	46	44	43	42	44	42	41	42	40	41	39	40	39	38	
3	44	42	40	39	41	40	38	40	38	39	37	38	37	36	
4	42	40	38	36	39	37	36	38	36	38	35	37	35	34	
5	40	37	35	34	37	35	34	36	33	36	33	35	33	32	
6	39	36	34	32	35	33	32	35	32	34	31	34	31	31	
7	37	34	31	30	33	31	30	33	30	32	30	32	29	29	
8	35	32	30	28	32	30	28	31	28	31	28	30	28	27	
9	34	30	28	26	30	28	26	29	26	29	26	29	26	26	
10	32	28	26	25	28	26	25	28	25	28	25	27	25	24	

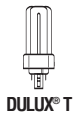
rc=Ceiling reflectance, rw=Wall reflectance, RCR=Room cavity ratio

CU Data Based on 20% Effective Floor Cavity Reflectance.

Note: Specifications and Dimensions subject to change without notice.

Visit our website at www.cooperlighting.com





DULUX® D/E 4-PIN ECOLOGIC® COMPACT FLUORESCENT LAMPS

Nominal Wattage	Bulb	MOL		Base	Product Number	Ordering Abbreviation	NEMA Generic Designation	Pkg Qty	Avg Rated Life (hrs)	CCT (K)	CRI	Approx Lumens		Symbols & Footnotes
		(in)	(mm)									Initial @25°C/77°F	Mean @35°C/95°F	
26	T (T4)	5.2	124	GX24Q-3	20767	CF26DT/E/827/ECO	CFTR26W/GX24Q/827	50	12000	2700	82	1800	1548	1,2,5,6, 7,12,20
					20995	CF26DT/E/835/ECO/BL/1	CFTR26W/GX24Q/835	50	12000	3500	82	1800	1548	1,2,5,6, 7,12,20
32	T (T4)	5.8	147	GX24Q-3	20768	CF32DT/E/827/ECO	CFTR32W/GX24Q/827	50	12000	2700	82	2400	2064	1,2,5,6, 7,12,18,20

DULUX T/E/IN AMALGAM, 4-PIN ECOLOGIC COMPACT FLUORESCENT LAMPS

For electronic ballast for high and low temperature applications. Lamps have End-of-Lamp Life (EOL) Protection

Nominal Wattage	Bulb	MOL		Base	Product Number	Ordering Abbreviation	NEMA Generic Designation	Pkg Qty	Avg Rated Life (hrs)	CCT (K)	CRI	Approx Lumens		Symbols & Footnotes
		(in)	(mm)									Initial @25°C/77°F	Mean @35°C/95°F	
18	T (T4)	4.4	111	GX24Q-2	20875	CF18DT/E/IN/827/ECO	CFTR18W/GX24Q/827	50	12000	2700	82	1164	1001	1,2,5,6, 7,12,20,21
					20876	CF18DT/E/IN/830/ECO	CFTR18W/GX24Q/830	50	12000	3000	82	1164	1001	1,2,5,6, 7,12,20,21
					20877	CF18DT/E/IN/835/ECO	CFTR18W/GX24Q/835	50	12000	3500	82	1164	1001	1,2,5,6, 7,12,20,21
					20878	CF18DT/E/IN/841/ECO	CFTR18W/GX24Q/841	50	12000	4100	82	1164	1001	1,2,5,6, 7,12,20,21
26	T (T4)	5.0	126	GX24Q-3	20879	CF26DT/E/IN/827/ECO	CFTR26W/GX24Q/827	50	12000	2700	82	1746	1501	1,2,5,6, 7,12,20,21
					20880	CF26DT/E/IN/830/ECO	CFTR26W/GX24Q/830	50	12000	3000	82	1746	1501	1,2,5,6, 7,12,20,21
					20881	CF26DT/E/IN/835/ECO	CFTR26W/GX24Q/835	50	12000	3500	82	1746	1501	1,2,5,6, 7,12,20,21
					20882	CF26DT/E/IN/841/ECO	CFTR26W/GX24Q/841	50	12000	4100	82	1746	1501	1,2,5,6, 7,12,20,21
32	T (T4)	5.6	142	GX24Q-3	20883	CF32DT/E/IN/827/ECO	CFTR32W/GX24Q/827	50	12000	2700	82	2328	2002	1,2,5,6, 7,12,18,20,21
					20884	CF32DT/E/IN/830/ECO	CFTR32W/GX24Q/830	50	12000	3000	82	2328	2002	1,2,5,6, 7,12,18,20,21
					20885	CF32DT/E/IN/835/ECO	CFTR32W/GX24Q/835	50	12000	3500	82	2328	2002	1,2,5,6, 7,12,18,20,21
					20886	CF32DT/E/IN/841/ECO	CFTR32W/GX24Q/841	50	12000	4100	82	2328	2002	1,2,5,6, 7,12,18,20,21
42	T (T4)	6.5	163	GX24Q-4	20887	CF42DT/E/IN/827/ECO	CFTR42W/GX24Q/827	50	12000	2700	82	3104	2670	1,2,5,6, 7,12,18,20,21
					20888	CF42DT/E/IN/830/ECO	CFTR42W/GX24Q/830	50	12000	3000	82	3104	2670	1,2,5,6, 7,12,18,20,21
					20871	CF42DT/E/IN/835/ECO	CFTR42W/GX24Q/835	50	12000	3500	82	3104	2670	1,2,5,6, 7,12,18,20,21
					20890	CF42DT/E/IN/841/ECO	CFTR42W/GX24Q/841	50	12000	4100	82	3104	2670	1,2,5,6, 7,12,18,20,21
57	T (T4)	7.76	197	GX24Q-5	20895	CF57DT/E/IN/827/ECO	CFTR57W/GX24Q/827	50	12000	2700	82	4171	3587	1,2,5,6, 12,18,20,21
					20896	CF57DT/E/IN/830/ECO	CFTR57W/GX24Q/830	50	12000	3000	82	4171	3587	1,2,5,6, 12,18,20,21
					20897	CF57DT/E/IN/835/ECO	CFTR57W/GX24Q/835	50	12000	3500	82	4171	3587	1,2,5,6, 12,18,20,21

COMPACT FLUORESCENT

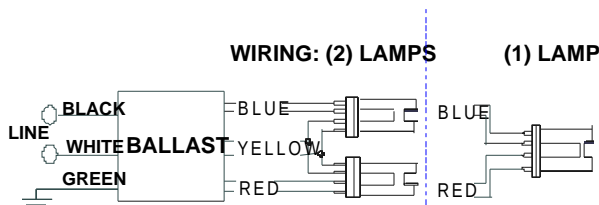
RCF-2S26-H1-LD-QS

Brand Name	AMBISTAR - HPF
Ballast Type	Electronic
Starting Method	Rapid Start
Lamp Connection	Series
Input Voltage	120
Input Frequency	60
Status	Active

Electrical Specifications

Lamp Type	Num. of Lamps	Rated Lamp Watts	Min. Start Temp (°F/C)	Input Current (Amps)	Input Power (ANSI Watts)	Ballast Factor	MAX THD %	Power Factor	MAX Lamp Current Crest Factor	B.E.F.
CFQ26W/G24Q	1	26	0/-18	0.23	27	1.00	10	0.98	1.7	3.70
CFQ26W/G24Q	2	26	0/-18	0.43	51	1.00	10	0.98	1.7	1.96
* CFTR26W/GX24Q	1	26	0/-18	0.24	29	1.10	10	0.98	1.7	3.79
CFTR26W/GX24Q	2	26	0/-18	0.45	54	1.00	10	0.98	1.7	1.85
CFTR32W/GX24Q	1	32	0/-18	0.31	36	0.98	10	0.98	1.7	2.72
CFTR42W/GX24Q	1	42	0/-18	0.38	46	0.98	10	0.98	1.7	2.13

Wiring Diagram



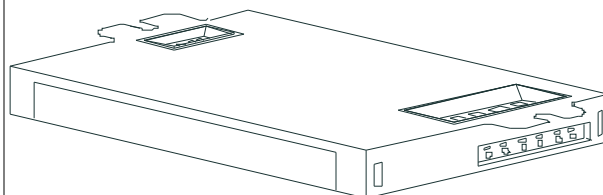
Green Terminal must be Grounded

The wiring diagram that appears above is for the lamp type denoted by the asterisk (*)

Standard Lead Length (inches)

	in.	cm.		in.	cm.
Black	0	0	Yellow/Blue		0
White	0	0	Blue/White		0
Blue	0	0	Brown		0
Red	0	0	Orange		0
Yellow	0	0	Orange/Black		0
Gray		0	Black/White		0
Violet		0	Red/White		0

Enclosure



Enclosure Dimensions

OverAll (L)	Width (W)	Height (H)	Mounting (M)
4.98 "	2.4 "	1.0 "	4.6 "
4 49/50	2 2/5	1	4 3/5
12.6 cm	6.1 cm	2.5 cm	11.7 cm

Revised 09/10/2007



Data is based upon tests performed by Philips Lighting Electronics N.A. in a controlled environment and is representative of relative performance. Actual performance can vary depending on operating conditions. Specifications are subject to change without notice. All specifications are nominal unless otherwise noted.

PHILIPS LIGHTING ELECTRONICS N.A.

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Customer Support/Technical Service: 800-372-3331 · OEM Support: 866-915-5886

RCF-2S26-H1-LD-QS	
Brand Name	AMBISTAR - HPF
Ballast Type	Electronic
Starting Method	Rapid Start
Lamp Connection	Series
Input Voltage	120
Input Frequency	60
Status	Active

Electrical Specifications

Notes:

Section I - Physical Characteristics

- 1.1 Ballast shall be physically interchangeable with standard electromagnetic or standard electronic ballasts, where applicable.
- 1.2 Ballast shall be provided with integral leads or poke-in wire trap connectors color coded per ANSI C82.11.

Section II - Performance Requirements

- 2.1 Ballast shall be Rapid Start.
- 2.2 Ballast shall contain auto restart circuitry in order to restart lamps without resetting power
- 2.3 Ballast shall operate from 60 Hz input source of 120V with sustained variations of +/- 10% (voltage and frequency) with no damage to the ballast.
- 2.4 Ballast shall be high frequency electronic type and operate lamps at a frequency above 42 kHz to avoid interference with infrared devices and eliminate visible flicker.
- 2.5 Ballast shall have a Power Factor greater than 0.98 for primary lamp.
- 2.6 Ballast shall have a minimum ballast factor for primary lamp as follows: 0.85 for linear lamps or 1.0 for CFL lamps.
- 2.7 Ballast shall provide for a Lamp Current Crest Factor of 1.7 or less in accordance with lamp manufacturer recommendations.
- 2.8 Ballast input current shall have Total Harmonic Distortion (THD) of less than 20% when operated at nominal line voltage with primary lamp.
- 2.9 Ballast shall have a Class A sound rating.
- 2.10 Ballast shall have a minimum starting temperature for primary lamp as follows: 0°F/-18°C for CFL lamps or 50°F/10°C for standard T12 lamps and 60°F/16°C for energy-saving T12 lamps.
- 2.11 Ballast shall provide Lamp EOL Protection Circuit for CFL lamps.
- 2.12 Ballast shall tolerate sustained open circuit and short circuit output conditions without damage.

Section III - Regulatory Requirements

- 3.1 Ballast shall not contain any Polychlorinated Biphenyl (PCB).
- 3.2 Ballast shall be Underwriters Laboratories (UL) listed, Class P and Type 1 Outdoor; and Canadian Standards Association (CSA) certified where applicable.
- 3.3 Ballast for CFL lamps shall be rated for use in air-handling spaces.
- 3.4 Ballast shall comply with ANSI C62.41 Category A for Transient protection.
- 3.5 Ballast shall comply with ANSI C82.11 where applicable.
- 3.6 Ballast shall comply with the requirements of the Federal Communications Commission (FCC) rules and regulations, Title 47 CFR part 18, Consumer (Class B) for EMI/RFI (conducted and radiated).

Section IV - Other

- 4.1 Ballast shall be manufactured in a factory certified to ISO 9002 Quality System Standards.
- 4.2 Ballast shall carry a three-year warranty from date of manufacture against defects in material or workmanship, including replacement, for operation at a maximum case temperature of 70°C for RELB models or 85°C for RCF models.
- 4.3 Manufacturer shall have a fifteen-year history of producing electronic ballasts for the North American market.
- 4.4 Ballast shall meet the ballast-controlled performance requirements in the ENERGY STAR Program Requirements for Residential Lite Fixtures.

Revised 09/10/2007



Data is based upon tests performed by Philips Lighting Electronics N.A. in a controlled environment and is representative of relative performance. Actual performance can vary depending on operating conditions. Specifications are subject to change without notice. All specifications are nominal unless otherwise noted.

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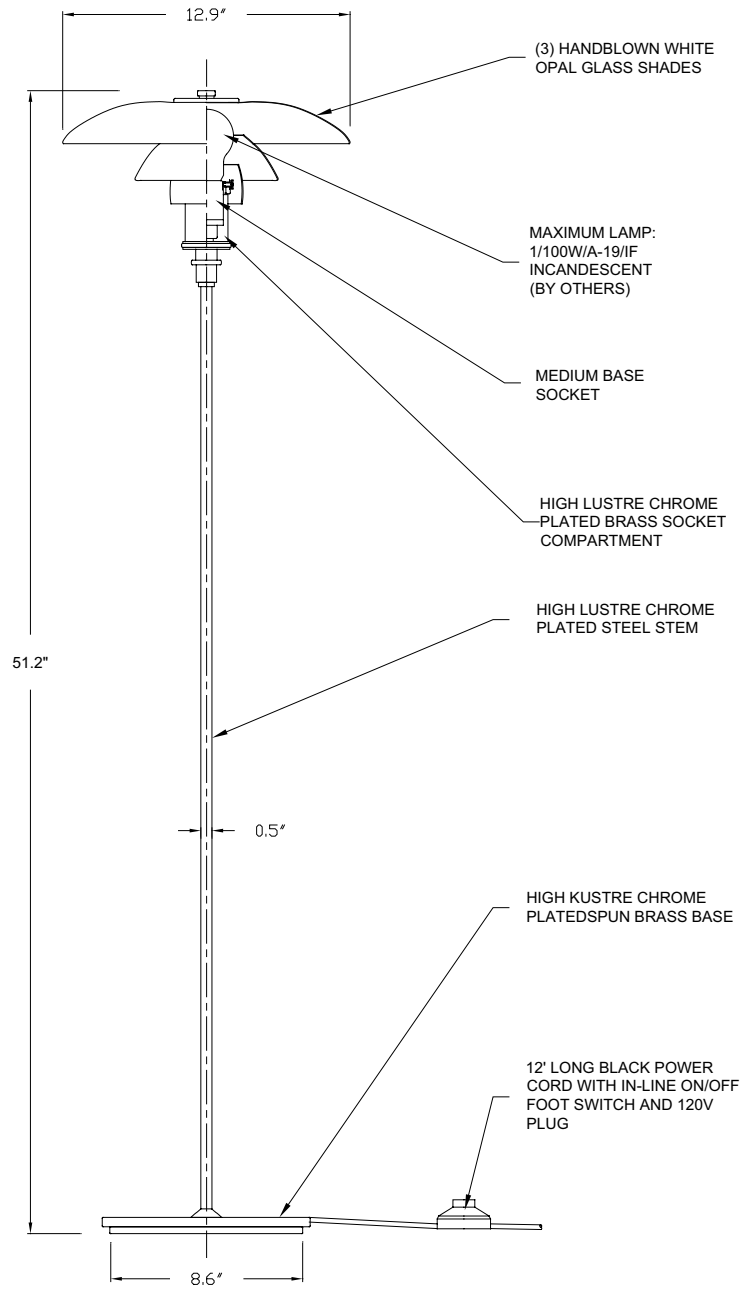
Customer Support/Technical Service: 800-372-3331 · OEM Support: 866-915-5886

PH 3½-2½ Floor

incandescent

Design: Poul Henningsen

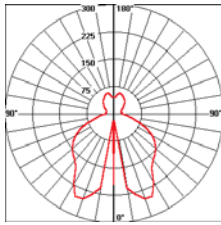
Type:
Project:
Catalog Number:



PH 3½-2½ Floor

incandescent

table & floor



Photometric Report: PH31/2-21/2-F-1-100W-A19-IF.IES
 Report No.: LP0380
 Poulsen Report No.: PH31/2-21/2-F-1-100W-A19-IF.IES
 Luminaire: PH 31/2-21/2 Floor
 Lamp: 1/100W/A19/IF
 Efficiency: 55.1%
 Description: All data shown are per 1750 lumens. This report can be used for calculation on all versions. Use only actual lumen data when calculating.

Candlepower Distribution

Vertical Angle	Candela
0	196
5	20
10	208
25	252
35	183
45	159
55	138
65	102
75	57
90	24
120	28
150	53
180	44

Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixture
0-30	197	11.3	20.4
0-40	315	18.0	32.6
0-60	561	32.1	58.1
0-90	758	43.3	78.5
90-120	69	3.9	7.2
90-130	98	5.6	10.2
90-150	161	9.2	16.7
90-180	207	11.8	21.5
0-180	965	55.1	100.0

Coefficients of Utilization - Zonal Cavity Method

Effective Floor Cavity Reflectance 20%

Ceiling Reflectance (%)	80				70				50			30			10			0
	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
Room Cavity Ratio																		
0	63	63	63	63	60	60	60	60	55	55	55	50	50	50	45	45	45	43
1	57	54	51	49	54	52	49	47	47	45	44	43	41	40	39	38	37	35
2	51	47	43	40	49	45	41	38	41	38	36	37	35	33	34	32	31	29
3	47	41	36	33	44	39	35	32	36	32	30	33	30	28	30	28	26	24
4	43	26	31	27	40	34	20	27	32	28	25	29	26	23	26	24	22	20
5	39	32	27	23	37	30	26	23	28	24	21	26	23	20	24	21	19	17
6	36	29	24	20	34	28	23	20	25	22	19	23	20	18	21	19	17	15
7	33	26	21	18	32	25	21	17	23	19	16	21	18	16	20	17	15	13
8	31	24	19	16	29	23	18	15	21	17	15	19	16	14	20	17	15	12
9	29	22	17	14	27	21	17	14	19	16	13	18	15	12	17	14	14	11
10	27	20	16	13	26	19	15	12	18	14	12	17	13	11	15	13	11	10

Design

Poul Henningsen

Concept

PH 3½-2½ Floor provides soft illumination. The PH 3½-2½ Floor is based on the principle of a reflecting multi-shade system, producing a harmonious and glare free illumination. The shades are drawn over a logarithmic spiral, with the center of the light source placed in the spiral's focal point.

Finish

White opal glass. High lustre chrome plated.

Material

Base: High lustre chrome plated, spun brass. Shades: Handblown white opal glass. Top plate: High lustre chrome plated, spun brass. Stem: High lustre chrome plated, steel.

Mounting

Cord type: Black. Cord length: 12'. Switch: In-line on/off foot switch provided.

Weight

Max. 16.5 lbs.

Label

cUL, Dry location. IBEW.

Product code	Light source	Voltage	Finish
PH3½-2½-F	1/100W/A-19/IF medium	120V	GLASS

Info notes:

- I. All handblown opal glass shades are sandblasted on the underside for uniform light distribution.
- II. The comparable EU version has the following classification: Ingress Protection Code: IP20.



K19



PAR38 Side Prong



R20



A19

GENERAL PURPOSE LAMPS

Watts	Bulb	Base	Product Number	Symbols & Footnotes	Ordering Abbreviation	Volts	Pkg Qty	Description	Class & Filament	Avg Rated Life(hrs)	Lumens Beam Angle CBCP	LCL (in)	MOL (in)
75	K19	Med	12583	●	75K19/DR	120	24	Inside Frost Directional Reflector	C, CC-6	1150	855lm		4.13
	PAR38	Med Side Prong	13850	★	75PAR/3FL	120	12	Compact Flood	C, CC-6	2000	1040lm 1800 cd 30°		4.31
	R20	Med	14840	●	75R20/RP	120	6	Reflector Flood	C, CC-9	2000	500lm 500 cd 45°		3.94
	R30	Med	15146	●	75R30/BLACKLIGHT/RP	120	6	Blacklight	C, CC-6	1000			6.50
90	A19	Med	11396	●	100A/90/W/ES/4PK	120	48	Soft White Energy Saver	C, CC-8	750	1450	3.13	4.44
			11378	●	100A/90/SS	120	48	Standard Frost SuperSaver	C, CC-8	750	1480	3.13	4.44
			11382	●136,189	100A/90/SS	130	48	Standard Frost SuperSaver	C, CC-8	750	1480	3.13	4.44
			<i>@ 120_volts, approximate 79 watts, 1130 lumens, 1875 hours</i>										
	Med Brass		11386	108	100A/90/SSXL	120	48	Standard Frost SuperSaver XL	C, CC-8	2500	1220	3.13	4.44
			11390	108,136,186	100A/90/SSXL	130	48	Standard Frost SuperSaver XL	C, CC-8	2500	1230	3.13	4.44
			<i>@ 120_volts, approximate 79 watts, 940 lumens, 6250 hours</i>										
100	A19	Med	12948	●	100A/DAY/4/160/RP	120	160	Daylight	C, CC-8	750	1270	3.13	4.44
			12587	●	100A/DAY/RP/4/48	120	48	Daylight	C, CC-8	750	1270	3.13	4.44
			12952	●	100A/DAY/RP/2/24	120	24	Daylight	C, CC-8	750	1270	3.13	4.44
			12538	●103,136	100A/DAY/RP/4/48	130	48	Daylight	C, CC-8	750	1270	3.13	4.44
			<i>@ 120_volts, approximate 88 watts, 970 lumens, 1875 hours.</i>										
			16868	●	100A/DL/SW/PLUS/4PK/RP/160	120	160	Soft White Double Life	C, CC-8	1500	1560	3.13	4.44
			16864	●	100A/DL/SW/PLUS/4PK/RP	120	48	Soft White Double Life	C, CC-8	1500	1560	3.13	4.44
			11332	●108	100A/DL/SW/4PK/RP	120	48	Soft White Double Life	C, CC-8	1500	1530	3.13	4.44
			12480	●	100A/DL/SW/PLUS/2PK/RP	120	24	Soft White Double Life	C, CC-8	1500	1560	3.13	4.44
			12805	●108	100A/DL/SW/2PK/RP	120	24	Soft White Double Life	C, CC-8	1500	1530	3.13	4.44
			11660	●	100A/CL/DL/PLUS/2PK/RP	120	24	Clear Double Life	C, CC-8	1500	1590	3.13	4.44
			11176	●108	100A/CL/DL/RP	120	24	Clear Double Life	C, CC-8	1500	1550	3.13	4.44
			13002	●	100A/RS/2/RP	120	24	Inside Frost Rough Service	C, C-9	1000	1260	2.88	4.44
			12997	●	100A/RS/RP/1	120	12	Inside Frost Rough Service	C, C-9	1000	1260	2.88	4.44
			12998	●136,190	100A/RS/2/RP	130	24	Inside Frost Rough Service	C, C-9	1000	1260	2.88	4.44
			<i>@ 120_volts, approximate 88 watts, 960 lumens, 2500 hours</i>										
			12770	●	100A/W/4/RP	120	48	Soft White	C, CC-8	750	1690	3.13	4.44
			12752	●	100A/W/RP	120	24	Soft White	C, CC-8	750	1690	3.13	4.44
			12529	●	100A/CL	120	120	Clear	C, CC-8	750	1720	3.13	4.44
			11226	●	100A/CL/RP	120	24	Clear	C, CC-8	750	1720	3.13	4.44
			12531	●136,193	100A/CL	130	120	Clear	C, CC-8	750	1700	3.13	4.44
			<i>@ 120_volts, approximate 88 watts, 1290 lumens, 1875 hours</i>										
			12750	●	100A/4/RP	120	48	Standard Frost	C, CC-8	750	1710	3.13	4.44
			12735	●	100A/RP	120	24	Standard Frost	C, CC-8	750	1710	3.13	4.44
			11375	●136,193	100A	130	48	Standard Frost	C, CC-8	750	1700	3.13	4.44
			<i>@ 120_volts, approximate 88 watts, 1290 lumens, 1875 hours</i>										

metro™ 26



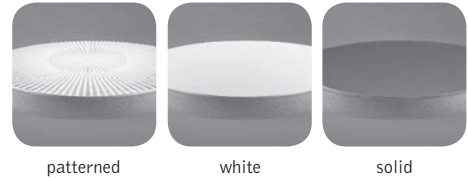
features

Low profile pendant mount fluorescent indirect with luminous acrylic diffuser.

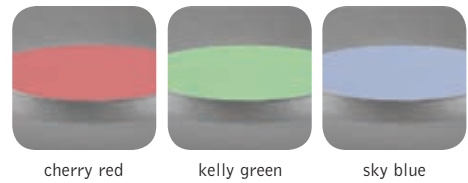
Suspension options include 3-point aircraft cable or single point stem with 45° swivel.

Metro™ makes an exceptional aesthetic statement in conference rooms, cafeterias, private or open offices, reception areas or other high-end applications.

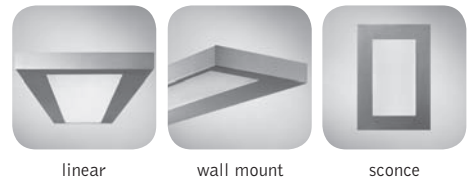
diffuser options



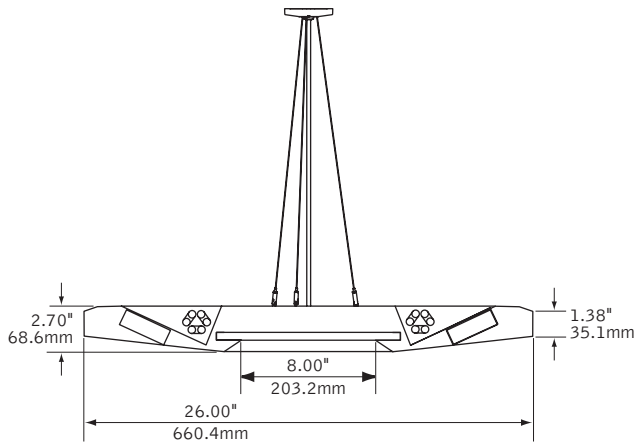
color options



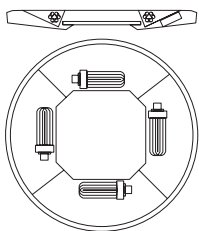
companion luminaire



dimensional data



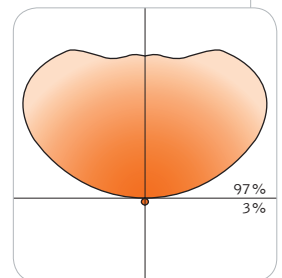
lampping options



26, 32 & 42W TRIPLE TUBE

performance

4-Lamp 42W Triple Tube
65% Efficiency
1917 cd @ 145°



Visit focalpointlights.com for complete photometric data.

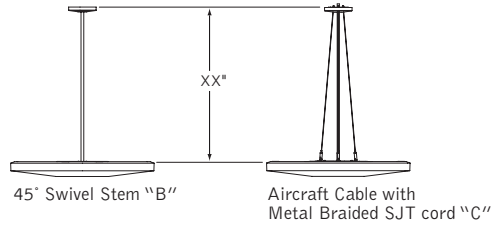
august 2005

fixture:

project:

suspension information

suspension length is determined from ceiling to top of luminaire.



specifications

construction

20 Ga. spun steel housing .036" min. thickness.
 8" Dia. opening reveals luminous acrylic diffuser.
 Canopy: 5" Dia. x .875"H, spun steel.
 Wiring compartment fabricated of 18Ga. C.R.S.
 Ballast is accessible by removing reflectors.

weight: 18 lbs.

optic

Four piece 24 Ga. Hammertone aluminum reflectors.
 8" Dia. x .375" thick luminous diffuser constructed of optical grade acrylic available as frosted white or with sunburst pattern.
 Solid housing option may also be specified.
 Optional red, green or blue color gel may be specified.

electrical

Luminaires are pre-wired for single circuit with thermally protected Class "P" electronic ballast.
 Factory installed decorative metal braided power cord is included.
 White SJT power cord supplied for 347V.
 Optional dimming ballasts available.
 Consult factory for dimming specifications and availability.
 UL and cUL listed.

Lamp:

Triple tube compact fluorescent, 4-pin, 26W/32W/42W (GX24q-3/4).

finish

Polyester powder coat applied over a 5-stage pre-treatment.

ordering

luminaire series	FMEP	FMEP
Metro	FMEP	
profile		26
26" Diameter	26	
shielding		
Patterned Acrylic	PA	
Frosted White Acrylic	WA	
Solid Housing	SD	
optional color gel (Available on PA or WA option)		
Cherry Red Gel	R	
Kelly Green Gel	G	
Sky Blue Gel	B	
(Leave blank for no color)		
lampping		
4 Lamp 26W Triple Tube, GX24q-3/4	426TT	
4 Lamp 32W Triple Tube, GX24q-3/4	432TT	
4 Lamp 42W Triple Tube, GX24q-3/4	442TT	
circuit		
Single Circuit	1C	
Dual Circuit	2C	
voltage		
120 Volt	120	
277 Volt	277	
347 Volt	347	
ballast		
Electronic Program start <10% THD	S	
Electronic Dimming Ballast* (Consult factory for dimming availability on 42w. Triple Tube)	D	
suspension		
24" Aircraft Cable	C24	
48" Aircraft Cable	C48	
96" Aircraft Cable	C96	
6" 45° Swivel Stem	B6	
12" 45° Swivel Stem	B12	
18" 45° Swivel Stem	B18	
24" 45° Swivel Stem	B24	
36" 45° Swivel Stem	B36	
48" 45° Swivel Stem (consult factory for other lengths)	B48	
factory options		
Emergency Battery Pack* (EM option not available with swivel stem.)	EM	
HLR/GLR Fuse	FU	
Include 3000K Lamp	L830	
Include 3500K Lamp	L835	
Include 4100K Lamp	L841	
finish		
Titanium Silver	TS	
Matte Satin White	WH	

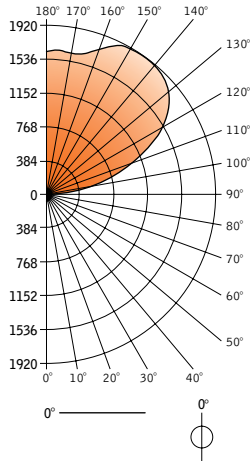
* for more information see Reference section.

metro™ 26



Filename: FMEP26442TT.IES
 Catalog #: FMEP-26-442TT-1C-120-S-C24-TS
 Efficiency: 65%
 Test #: 11885.1

CANDLEPOWER DISTRIBUTION



Spacing 1.4
 Criterion: 1.4

Vertical Angle	Horizontal Angle 0°	Zonal Lumens
0°	75	
5°	79	8
15°	77	22
25°	72	33
35°	66	41
45°	61	47
55°	50	44
65°	31	30
75°	13	13
85°	3	4
90°	30	
95°	236	258
105°	823	870
115°	1324	1315
125°	1684	1511
135°	1866	1445
145°	1917	1204
155°	1896	878
165°	1656	469
175°	1644	157
180°	1612	

LUMEN SUMMARY

Zone	Lumens	% Lamp	% Fixt
0°-30°	63	0.5	0.7
0°-90°	243	1.9	2.9
90°-130°	3953	30.9	47.3
90°-180°	8107	63.3	97.1
Total Luminaire	0°-180°		

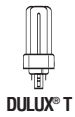
LUMINANCE DATA (CD/M²)

Vertical Angle	0°
45°	281
55°	282
65°	235
75°	159
85°	126

CO-EFFICIENTS OF UTILIZATION

Floor	80	70	50	30	10	00
Ceiling	70	50	10	50	10	00
Wall	63	63	63	63	63	63
RCR 0	57	54	52	50	49	47
1	52	47	43	40	44	41
2	47	41	37	33	40	36
3	43	36	32	28	37	31
4	39	32	28	24	34	28
5	36	29	24	21	31	25
6	33	26	21	18	29	23
7	31	24	19	16	26	20
8	29	22	17	14	25	19
9	27	20	15	13	23	17
10						

Numbers indicate percentage values of



DULUX® D/E 4-PIN ECOLOGIC® COMPACT FLUORESCENT LAMPS

Nominal Wattage	Bulb	MOL		Base	Product Number	Ordering Abbreviation	NEMA Generic Designation	Pkg Qty	Avg Rated Life (hrs)	CCT (K)	CRI	Approx Lumens		Symbols & Footnotes
		(in)	(mm)									Initial @25°C/77°F	Mean @35°C/95°F	
26	T (T4)	5.2	124	GX24Q-3	20767	CF26DT/E/827/ECO	CFTR26W/GX24Q/827	50	12000	2700	82	1800	1548	1,2,5,6, 7,12,20
					20995	CF26DT/E/835/ECO/BL/1	CFTR26W/GX24Q/835	50	12000	3500	82	1800	1548	1,2,5,6, 7,12,20
32	T (T4)	5.8	147	GX24Q-3	20768	CF32DT/E/827/ECO	CFTR32W/GX24Q/827	50	12000	2700	82	2400	2064	1,2,5,6, 7,12,18,20

DULUX T/E/IN AMALGAM, 4-PIN ECOLOGIC COMPACT FLUORESCENT LAMPS

For electronic ballast for high and low temperature applications. Lamps have End-of-Lamp Life (EOL) Protection

Nominal Wattage	Bulb	MOL		Base	Product Number	Ordering Abbreviation	NEMA Generic Designation	Pkg Qty	Avg Rated Life (hrs)	CCT (K)	CRI	Approx Lumens		Symbols & Footnotes
		(in)	(mm)									Initial @25°C/77°F	Mean @35°C/95°F	
18	T (T4)	4.4	111	GX24Q-2	20875	CF18DT/E/IN/827/ECO	CFTR18W/GX24Q/827	50	12000	2700	82	1164	1001	1,2,5,6, 7,12,20,21
					20876	CF18DT/E/IN/830/ECO	CFTR18W/GX24Q/830	50	12000	3000	82	1164	1001	1,2,5,6, 7,12,20,21
					20877	CF18DT/E/IN/835/ECO	CFTR18W/GX24Q/835	50	12000	3500	82	1164	1001	1,2,5,6, 7,12,20,21
					20878	CF18DT/E/IN/841/ECO	CFTR18W/GX24Q/841	50	12000	4100	82	1164	1001	1,2,5,6, 7,12,20,21
26	T (T4)	5.0	126	GX24Q-3	20879	CF26DT/E/IN/827/ECO	CFTR26W/GX24Q/827	50	12000	2700	82	1746	1501	1,2,5,6, 7,12,20,21
					20880	CF26DT/E/IN/830/ECO	CFTR26W/GX24Q/830	50	12000	3000	82	1746	1501	1,2,5,6, 7,12,20,21
					20881	CF26DT/E/IN/835/ECO	CFTR26W/GX24Q/835	50	12000	3500	82	1746	1501	1,2,5,6, 7,12,20,21
					20882	CF26DT/E/IN/841/ECO	CFTR26W/GX24Q/841	50	12000	4100	82	1746	1501	1,2,5,6, 7,12,20,21
32	T (T4)	5.6	142	GX24Q-3	20883	CF32DT/E/IN/827/ECO	CFTR32W/GX24Q/827	50	12000	2700	82	2328	2002	1,2,5,6, 7,12,18,20,21
					20884	CF32DT/E/IN/830/ECO	CFTR32W/GX24Q/830	50	12000	3000	82	2328	2002	1,2,5,6, 7,12,18,20,21
					20885	CF32DT/E/IN/835/ECO	CFTR32W/GX24Q/835	50	12000	3500	82	2328	2002	1,2,5,6, 7,12,18,20,21
					20886	CF32DT/E/IN/841/ECO	CFTR32W/GX24Q/841	50	12000	4100	82	2328	2002	1,2,5,6, 7,12,18,20,21
42	T (T4)	6.5	163	GX24Q-4	20887	CF42DT/E/IN/827/ECO	CFTR42W/GX24Q/827	50	12000	2700	82	3104	2670	1,2,5,6, 7,12,18,20,21
					20888	CF42DT/E/IN/830/ECO	CFTR42W/GX24Q/830	50	12000	3000	82	3104	2670	1,2,5,6, 7,12,18,20,21
					20871	CF42DT/E/IN/835/ECO	CFTR42W/GX24Q/835	50	12000	3500	82	3104	2670	1,2,5,6, 7,12,18,20,21
					20890	CF42DT/E/IN/841/ECO	CFTR42W/GX24Q/841	50	12000	4100	82	3104	2670	1,2,5,6, 7,12,18,20,21
57	T (T4)	7.76	197	GX24Q-5	20895	CF57DT/E/IN/827/ECO	CFTR57W/GX24Q/827	50	12000	2700	82	4171	3587	1,2,5,6, 12,18,20,21
					20896	CF57DT/E/IN/830/ECO	CFTR57W/GX24Q/830	50	12000	3000	82	4171	3587	1,2,5,6, 12,18,20,21
					20897	CF57DT/E/IN/835/ECO	CFTR57W/GX24Q/835	50	12000	3500	82	4171	3587	1,2,5,6, 12,18,20,21

COMPACT FLUORESCENT

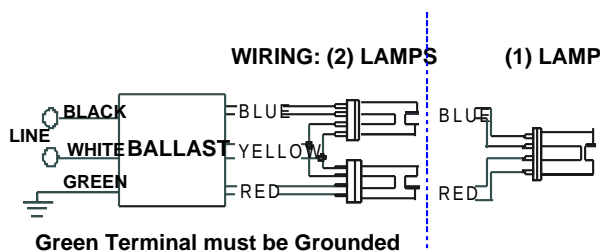
ICF-2S42-M2-BS@120

Brand Name	SMARTMATE
Ballast Type	Electronic
Starting Method	Programmed Start
Lamp Connection	Series
Input Voltage	120-277
Input Frequency	50/60 HZ
Status	Active

Electrical Specifications

Lamp Type	Num. of Lamps	Rated Lamp Watts	Min. Start Temp (°F/C)	Input Current (Amps)	Input Power (ANSI Watts)	Ballast Factor	MAX THD %	Power Factor	MAX Lamp Current Crest Factor	B.E.F.
* CFTR42W/GX24Q	2	42	0/-18	0.78	93	0.97	10	0.99	1.5	1.04

Wiring Diagram

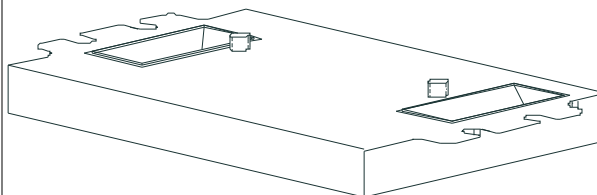


The wiring diagram that appears above is for the lamp type denoted by the asterisk (*)

Standard Lead Length (inches)

	in.	cm.		in.	cm.
Black	0	0	Yellow/Blue		0
White	0	0	Blue/White		0
Blue	0	0	Brown		0
Red	0	0	Orange		0
Yellow	0	0	Orange/Black		0
Gray		0	Black/White		0
Violet		0	Red/White		0

Enclosure



Enclosure Dimensions

OverAll (L)	Width (W)	Height (H)	Mounting (M)
4.98 "	3.00 "	1.29 "	2.00 "
4 49/50	3	1 29/100	2
12.6 cm	7.6 cm	3.3 cm	5.1 cm

Revised 02/12/2008



Data is based upon tests performed by Philips Lighting Electronics N.A. in a controlled environment and is representative of relative performance. Actual performance can vary depending on operating conditions. Specifications are subject to change without notice. All specifications are nominal unless otherwise noted.

PHILIPS LIGHTING ELECTRONICS N.A.

10275 WEST HIGGINS ROAD · ROSEMONT, IL 60018

Tel: 800-322-2086 · Fax: 888-423-1882 · www.philips.com/advance

Customer Support/Technical Service: 800-372-3331 · OEM Support: 866-915-5886

ICF-2S42-M2-BS@120	
Brand Name	SMARTMATE
Ballast Type	Electronic
Starting Method	Programmed Start
Lamp Connection	Series
Input Voltage	120-277
Input Frequency	50/60 HZ
Status	Active

Electrical Specifications

Notes:

Section I - Physical Characteristics

- 1.1 Ballast shall be physically interchangeable with standard electromagnetic or standard electronic ballasts, where applicable.
- 1.2 Ballast shall be available in a plastic/metal can or all metal can construction to meet all plenum requirements.
- 1.3 Ballast shall be provided with poke-in wire trap connectors color coded per ANSI C82.11.

Section II - Performance Requirements

- 2.1 Ballast shall be Programmed Start except for ballasts with -QS suffix, which shall be Rapid Start.
- 2.2 Ballast shall contain auto restart circuitry in order to restart lamps without resetting power.
- 2.3 Ballast shall operate from 50/60 Hz input source of 120V through 277V with sustained variations of +/- 10% (voltage and frequency) with no damage to the IntelliVolt ballast. RCF models shall operate from 60 Hz input source of 120V with sustained variations of +/- 10% (voltage and frequency) with no damage to the ballast.
- 2.4 Ballast shall be high frequency electronic type and operate lamps at a frequency above 42 kHz to avoid interference with infrared devices and eliminate visible flicker.
- 2.5 Ballast shall have a Power Factor greater than 0.98 for primary lamp.
- 2.6 Ballast shall have a minimum ballast factor of 1.00 for primary lamp application.
- 2.7 Ballast shall provide for a Lamp Current Crest Factor of 1.7 or less in accordance with lamp manufacturer recommendations.
- 2.8 Ballast input current shall have Total Harmonic Distortion (THD) of less than 10% when operated at nominal line voltage with primary lamp.
- 2.9 Ballast shall have a Class A sound rating.
- 2.10 Ballast shall have a minimum starting temperature of -18C (0F) for primary lamp. Ballasts for PL-H lamps shall have a minimum starting temperature of -30C (-20F) for primary lamp.
- 2.11 Ballast shall provide Lamp EOL Protection Circuit.
- 2.12 Ballast shall tolerate sustained open circuit and short circuit output conditions without damage.

Section III - Regulatory Requirements

- 3.1 Ballast shall not contain any Polychlorinated Biphenyl (PCB).
- 3.2 Ballast shall be Underwriters Laboratories (UL) listed, Class P and Type 1 Outdoor; and Canadian Standards Association (CSA) certified where applicable.
- 3.3 Ballast shall be rated for use in air-handling spaces.
- 3.4 Ballast shall comply with ANSI C62.41 Category A for Transient protection.
- 3.5 Ballast shall comply with ANSI C82.11 where applicable.
- 3.6 Ballast shall comply with the requirements of the Federal Communications Commission (FCC) rules and regulations, Title 47 CFR part 18, Non-Consumer (Class A) for EMI/RFI (conducted and radiated).

Section IV - Other

- 4.1 Ballast shall be manufactured in a factory certified to ISO 9002 Quality System Standards.
- 4.2 Ballast shall carry a five-year warranty from date of manufacture against defects in material or workmanship, including replacement, for operation at a maximum case temperature of 75C and three-years for a maximum case temperature of 85C (90C 3year warranty for ICF1H120-M4-XX, ICF2S42-90C-M2-XX and ICF2S70-M4-XX models).
- 4.3 Manufacturer shall have a fifteen-year history of producing electronic ballasts for the North American market.

Revised 02/12/2008



Data is based upon tests performed by Philips Lighting Electronics N.A. in a controlled environment and is representative of relative performance. Actual performance can vary depending on operating conditions. Specifications are subject to change without notice. All specifications are nominal unless otherwise noted.

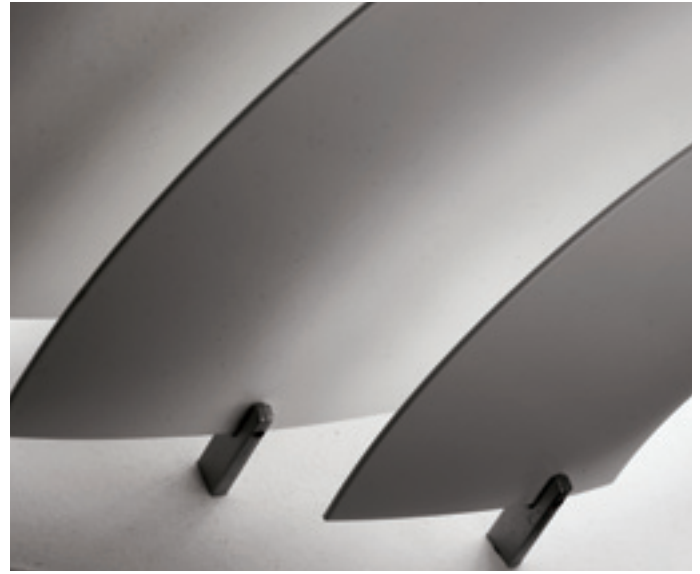
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wall



Weblink
132

Project page
370

Design
Kurt Nørregaard

Concept
Oslo Wall creates indirect illumination and produces a visually comfortable ambience as a result of light being emitted between the shades. The lighting characteristics make it ideal for accent illumination.

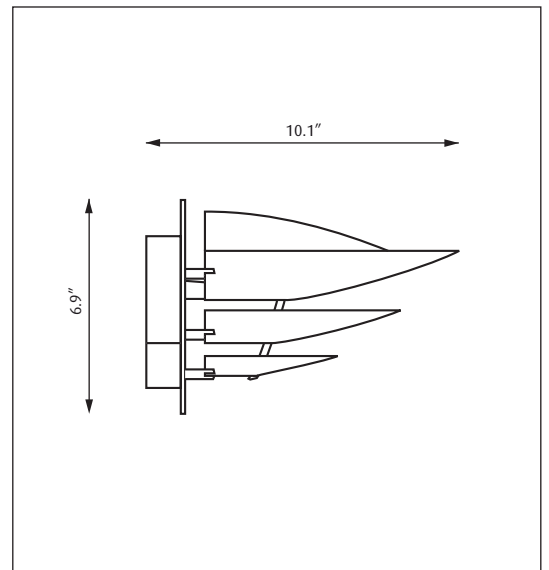
Finish
Aluminum, brushed and lacquered. White, wet painted.

Material
Shades: Spun aluminum. Diffuser: Frosted, vacuum formed acrylic. Back plate: Die cut steel. Legs: Die cast aluminum.

Mounting
Surface: Mounted directly to finished surface over a recessed 4" octagonal junction box.

Weight
Max. 7 lbs.

Label
cUL, Dry location. IBEW.



Product code	Light source	Voltage	Finish
OSW	1/26W/32W/42W/CF GX24q-3/4	120-277V	BR ALU WHT

Specification notes:
a. Provided with a universal wattage socket and 120-277V integral electronic ballast.

Info notes:
I. The comparable EU version has the following classification: Ingress Protection Code: IP20.



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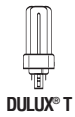
53

54

88

Excalibur Hotel & Spa
Las Vegas, Nevada, USA
Architect
Klai Juba Architects
Lighting Designer
Klai Juba Architects
Photo
Jacob Termansen





DULUX® D/E 4-PIN ECOLOGIC® COMPACT FLUORESCENT LAMPS

Nominal Wattage	Bulb	MOL		Base	Product Number	Ordering Abbreviation	NEMA Generic Designation	Pkg Qty	Avg Rated Life (hrs)	CCT (K)	CRI	Approx Lumens		Symbols & Footnotes
		(in)	(mm)									Initial @25°C/77°F	Mean @35°C/95°F	
26	T (T4)	5.2	124	GX24Q-3	20767	CF26DT/E/827/ECO	CFTR26W/GX24Q/827	50	12000	2700	82	1800	1548	1,2,5,6, 7,12,20
					20995	CF26DT/E/835/ECO/BL/1	CFTR26W/GX24Q/835	50	12000	3500	82	1800	1548	1,2,5,6, 7,12,20
32	T (T4)	5.8	147	GX24Q-3	20768	CF32DT/E/827/ECO	CFTR32W/GX24Q/827	50	12000	2700	82	2400	2064	1,2,5,6, 7,12,18,20

DULUX T/E/IN AMALGAM, 4-PIN ECOLOGIC COMPACT FLUORESCENT LAMPS

For electronic ballast for high and low temperature applications. Lamps have End-of-Lamp Life (EOL) Protection

Nominal Wattage	Bulb	MOL		Base	Product Number	Ordering Abbreviation	NEMA Generic Designation	Pkg Qty	Avg Rated Life (hrs)	CCT (K)	CRI	Approx Lumens		Symbols & Footnotes
		(in)	(mm)									Initial @25°C/77°F	Mean @35°C/95°F	
18	T (T4)	4.4	111	GX24Q-2	20875	CF18DT/E/IN/827/ECO	CFTR18W/GX24Q/827	50	12000	2700	82	1164	1001	1,2,5,6, 7,12,20,21
					20876	CF18DT/E/IN/830/ECO	CFTR18W/GX24Q/830	50	12000	3000	82	1164	1001	1,2,5,6, 7,12,20,21
					20877	CF18DT/E/IN/835/ECO	CFTR18W/GX24Q/835	50	12000	3500	82	1164	1001	1,2,5,6, 7,12,20,21
					20878	CF18DT/E/IN/841/ECO	CFTR18W/GX24Q/841	50	12000	4100	82	1164	1001	1,2,5,6, 7,12,20,21
26	T (T4)	5.0	126	GX24Q-3	20879	CF26DT/E/IN/827/ECO	CFTR26W/GX24Q/827	50	12000	2700	82	1746	1501	1,2,5,6, 7,12,20,21
					20880	CF26DT/E/IN/830/ECO	CFTR26W/GX24Q/830	50	12000	3000	82	1746	1501	1,2,5,6, 7,12,20,21
					20881	CF26DT/E/IN/835/ECO	CFTR26W/GX24Q/835	50	12000	3500	82	1746	1501	1,2,5,6, 7,12,20,21
					20882	CF26DT/E/IN/841/ECO	CFTR26W/GX24Q/841	50	12000	4100	82	1746	1501	1,2,5,6, 7,12,20,21
32	T (T4)	5.6	142	GX24Q-3	20883	CF32DT/E/IN/827/ECO	CFTR32W/GX24Q/827	50	12000	2700	82	2328	2002	1,2,5,6, 7,12,18,20,21
					20884	CF32DT/E/IN/830/ECO	CFTR32W/GX24Q/830	50	12000	3000	82	2328	2002	1,2,5,6, 7,12,18,20,21
					20885	CF32DT/E/IN/835/ECO	CFTR32W/GX24Q/835	50	12000	3500	82	2328	2002	1,2,5,6, 7,12,18,20,21
					20886	CF32DT/E/IN/841/ECO	CFTR32W/GX24Q/841	50	12000	4100	82	2328	2002	1,2,5,6, 7,12,18,20,21
42	T (T4)	6.5	163	GX24Q-4	20887	CF42DT/E/IN/827/ECO	CFTR42W/GX24Q/827	50	12000	2700	82	3104	2670	1,2,5,6, 7,12,18,20,21
					20888	CF42DT/E/IN/830/ECO	CFTR42W/GX24Q/830	50	12000	3000	82	3104	2670	1,2,5,6, 7,12,18,20,21
					20871	CF42DT/E/IN/835/ECO	CFTR42W/GX24Q/835	50	12000	3500	82	3104	2670	1,2,5,6, 7,12,18,20,21
					20890	CF42DT/E/IN/841/ECO	CFTR42W/GX24Q/841	50	12000	4100	82	3104	2670	1,2,5,6, 7,12,18,20,21
57	T (T4)	7.76	197	GX24Q-5	20895	CF57DT/E/IN/827/ECO	CFTR57W/GX24Q/827	50	12000	2700	82	4171	3587	1,2,5,6, 12,18,20,21
					20896	CF57DT/E/IN/830/ECO	CFTR57W/GX24Q/830	50	12000	3000	82	4171	3587	1,2,5,6, 12,18,20,21
					20897	CF57DT/E/IN/835/ECO	CFTR57W/GX24Q/835	50	12000	3500	82	4171	3587	1,2,5,6, 12,18,20,21

COMPACT FLUORESCENT

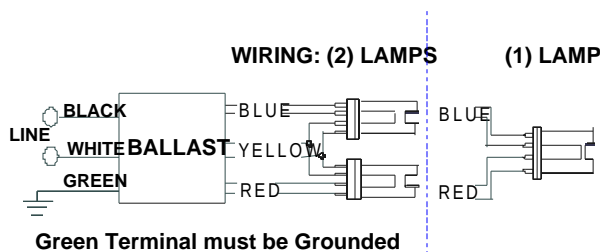
RCF-2S26-H1-LD-QS

Brand Name	AMBISTAR - HPF
Ballast Type	Electronic
Starting Method	Rapid Start
Lamp Connection	Series
Input Voltage	120
Input Frequency	60
Status	Active

Electrical Specifications

Lamp Type	Num. of Lamps	Rated Lamp Watts	Min. Start Temp (°F/C)	Input Current (Amps)	Input Power (ANSI Watts)	Ballast Factor	MAX THD %	Power Factor	MAX Lamp Current Crest Factor	B.E.F.
CFQ26W/G24Q	1	26	0/-18	0.23	27	1.00	10	0.98	1.7	3.70
CFQ26W/G24Q	2	26	0/-18	0.43	51	1.00	10	0.98	1.7	1.96
* CFTR26W/GX24Q	1	26	0/-18	0.24	29	1.10	10	0.98	1.7	3.79
CFTR26W/GX24Q	2	26	0/-18	0.45	54	1.00	10	0.98	1.7	1.85
CFTR32W/GX24Q	1	32	0/-18	0.31	36	0.98	10	0.98	1.7	2.72
CFTR42W/GX24Q	1	42	0/-18	0.38	46	0.98	10	0.98	1.7	2.13

Wiring Diagram

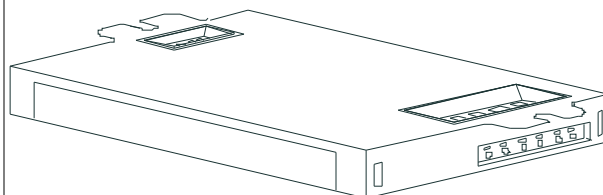


The wiring diagram that appears above is for the lamp type denoted by the asterisk (*)

Standard Lead Length (inches)

	in.	cm.		in.	cm.
Black	0	0	Yellow/Blue		0
White	0	0	Blue/White		0
Blue	0	0	Brown		0
Red	0	0	Orange		0
Yellow	0	0	Orange/Black		0
Gray		0	Black/White		0
Violet		0	Red/White		0

Enclosure



Enclosure Dimensions

OverAll (L)	Width (W)	Height (H)	Mounting (M)
4.98 "	2.4 "	1.0 "	4.6 "
4 49/50	2 2/5	1	4 3/5
12.6 cm	6.1 cm	2.5 cm	11.7 cm

Revised 09/10/2007



Data is based upon tests performed by Philips Lighting Electronics N.A. in a controlled environment and is representative of relative performance. Actual performance can vary depending on operating conditions. Specifications are subject to change without notice. All specifications are nominal unless otherwise noted.

PHILIPS LIGHTING ELECTRONICS N.A.

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Customer Support/Technical Service: 800-372-3331 · OEM Support: 866-915-5886

RCF-2S26-H1-LD-QS	
Brand Name	AMBISTAR - HPF
Ballast Type	Electronic
Starting Method	Rapid Start
Lamp Connection	Series
Input Voltage	120
Input Frequency	60
Status	Active

Electrical Specifications

Notes:

Section I - Physical Characteristics

- 1.1 Ballast shall be physically interchangeable with standard electromagnetic or standard electronic ballasts, where applicable.
- 1.2 Ballast shall be provided with integral leads or poke-in wire trap connectors color coded per ANSI C82.11.

Section II - Performance Requirements

- 2.1 Ballast shall be Rapid Start.
- 2.2 Ballast shall contain auto restart circuitry in order to restart lamps without resetting power
- 2.3 Ballast shall operate from 60 Hz input source of 120V with sustained variations of +/- 10% (voltage and frequency) with no damage to the ballast.
- 2.4 Ballast shall be high frequency electronic type and operate lamps at a frequency above 42 kHz to avoid interference with infrared devices and eliminate visible flicker.
- 2.5 Ballast shall have a Power Factor greater than 0.98 for primary lamp.
- 2.6 Ballast shall have a minimum ballast factor for primary lamp as follows: 0.85 for linear lamps or 1.0 for CFL lamps.
- 2.7 Ballast shall provide for a Lamp Current Crest Factor of 1.7 or less in accordance with lamp manufacturer recommendations.
- 2.8 Ballast input current shall have Total Harmonic Distortion (THD) of less than 20% when operated at nominal line voltage with primary lamp.
- 2.9 Ballast shall have a Class A sound rating.
- 2.10 Ballast shall have a minimum starting temperature for primary lamp as follows: 0°F/-18°C for CFL lamps or 50°F/10°C for standard T12 lamps and 60°F/16°C for energy-saving T12 lamps.
- 2.11 Ballast shall provide Lamp EOL Protection Circuit for CFL lamps.
- 2.12 Ballast shall tolerate sustained open circuit and short circuit output conditions without damage.

Section III - Regulatory Requirements

- 3.1 Ballast shall not contain any Polychlorinated Biphenyl (PCB).
- 3.2 Ballast shall be Underwriters Laboratories (UL) listed, Class P and Type 1 Outdoor; and Canadian Standards Association (CSA) certified where applicable.
- 3.3 Ballast for CFL lamps shall be rated for use in air-handling spaces.
- 3.4 Ballast shall comply with ANSI C62.41 Category A for Transient protection.
- 3.5 Ballast shall comply with ANSI C82.11 where applicable.
- 3.6 Ballast shall comply with the requirements of the Federal Communications Commission (FCC) rules and regulations, Title 47 CFR part 18, Consumer (Class B) for EMI/RFI (conducted and radiated).

Section IV - Other

- 4.1 Ballast shall be manufactured in a factory certified to ISO 9002 Quality System Standards.
- 4.2 Ballast shall carry a three-year warranty from date of manufacture against defects in material or workmanship, including replacement, for operation at a maximum case temperature of 70°C for RELB models or 85°C for RCF models.
- 4.3 Manufacturer shall have a fifteen-year history of producing electronic ballasts for the North American market.
- 4.4 Ballast shall meet the ballast-controlled performance requirements in the ENERGY STAR Program Requirements for Residential Lite Fixtures.

Revised 09/10/2007



Data is based upon tests performed by Philips Lighting Electronics N.A. in a controlled environment and is representative of relative performance. Actual performance can vary depending on operating conditions. Specifications are subject to change without notice. All specifications are nominal unless otherwise noted.

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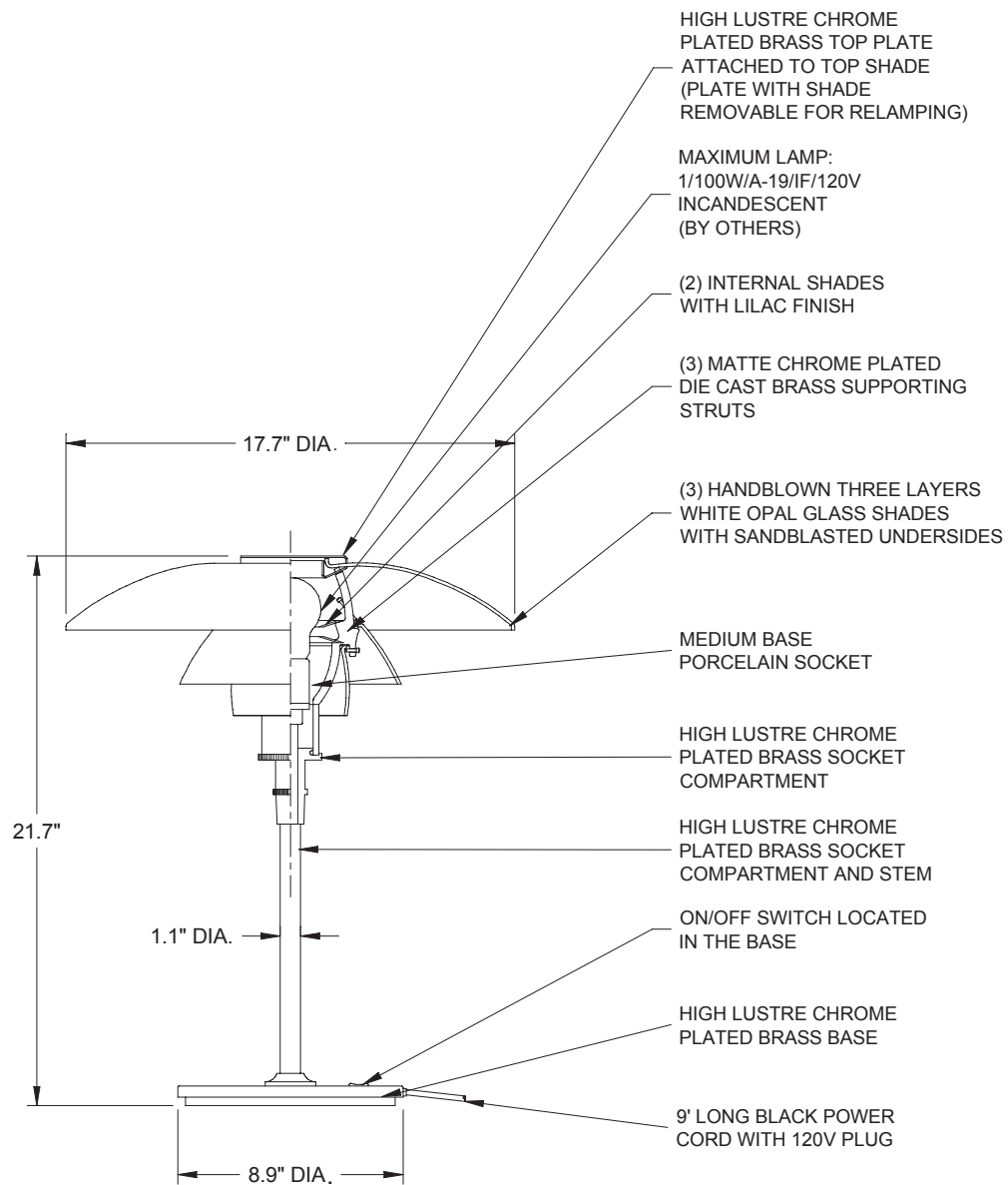
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PH 4½-3½ Glass Table

incandescent

Design: Poul Henningsen

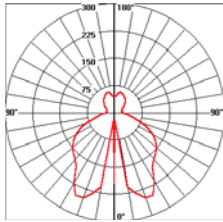
Type:
Project:
Catalog Number:



PH 4½-3½ Glass Table

table & floor

incandescent



Photometric Report: PH41/2-31/2-T-1-100W-A19-IF-IES
 Report No.: LP0380
 Poulsen Report No.: PH41/2-31/2-T-1-100W-A19-IF-IES
 Luminaire: PH 4 Glass Table and Floor
 Lamp: 1/100W/A19/IF
 Efficiency: 55.1%
 Description: All data shown are per 1750 lumens. This report can be used for calculation on all versions. Use only actual lumen data when calculating.

Vertical Angle	Candela
0	196
5	20
10	208
25	252
35	183
45	159
55	138
65	102
75	57
90	24
120	28
150	53
180	44

Zone	Lumens	% Lamp	% Fixture
0-30	197	11.3	20.4
0-40	315	18.0	32.6
0-60	561	32.1	58.1
0-90	758	43.3	78.5
90-120	69	3.9	7.2
90-130	98	5.6	10.2
90-150	161	9.2	16.7
90-180	207	11.8	21.5
0-180	965	55.1	100.0

Coefficients of Utilization - Zonal Cavity Method
 Effective Floor Cavity Reflectance 20%

Ceiling Reflectance (%)	80				70				50				30				10				0			
	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	
Wall Reflectance (%)																								
Room Cavity Ratio																								
0	63	63	63	63	60	60	60	60	55	55	55	50	50	50	45	45	45	43						
1	57	54	51	49	54	52	49	47	47	45	44	43	41	40	39	38	37	35						
2	51	47	43	40	49	45	41	38	41	38	36	37	35	33	34	32	31	29						
3	47	41	36	33	44	39	35	32	36	32	30	33	30	28	30	28	26	24						
4	43	26	31	27	40	34	20	27	32	28	25	29	26	23	26	24	22	20						
5	39	32	27	23	37	30	26	23	28	24	21	26	23	20	24	21	19	17						
6	36	29	24	20	34	28	23	20	25	22	19	23	20	18	21	19	17	15						
7	33	26	21	18	32	25	21	17	23	19	16	21	18	16	20	17	15	13						
8	31	24	19	16	29	23	18	15	21	17	15	19	16	14	20	17	15	12						
9	29	22	17	14	27	21	17	14	19	16	13	18	15	12	17	14	14	11						
10	27	20	16	13	26	19	15	12	18	14	12	17	13	11	15	13	11	10						

Design

Poul Henningsen

Concept

PH 4½-3½ Glass Table (1927) provides soft illumination. The PH 4½ family is based on the principle of a reflecting multi-shade system, producing a harmonious and glare free illumination. The shades are drawn over a logarithmic spiral, with the center of the light source placed in the spiral's focal point.

Finish

White opal glass. High lustre chrome plated.

Material

Base: High lustre chrome plated, spun brass. Shades: Handblown white opal glass. Anti-glare ring: Purple, spun aluminum. Top plate: High lustre chrome plated, spun brass. Stem: High lustre chrome plated, steel.

Mounting

Cord type: Black. Cord length: 9'. Switch: On/off switch located in the base.

Weight

Max. 22 lbs.

Label

cUL, Dry location. IBEW.

Product code	Light source	Voltage	Finish
PH4½-3½-T	1/100W/A-19/IF medium	120V	GLASS

Info notes:

- I. All handblown opal glass shades are sandblasted on the undersides for uniform light distribution.
- II. The comparable EU version has the following classification: Ingress Protection Code: IP20.



K19



PAR38 Side Prong



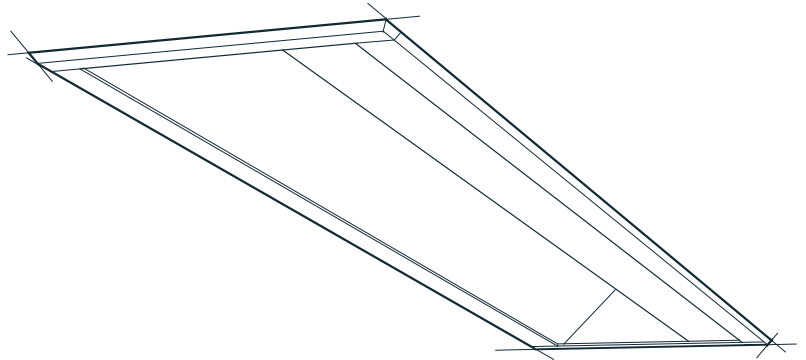
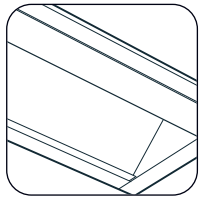
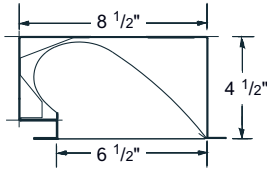
R20



A19

GENERAL PURPOSE LAMPS

Watts	Bulb	Base	Product Number	Symbols & Footnotes	Ordering Abbreviation	Volts	Pkg Qty	Description	Class & Filament	Avg Rated Life(hrs)	Lumens Beam Angle CBCP	LCL (in)	MOL (in)
75	K19	Med	12583	●	75K19/DR	120	24	Inside Frost Directional Reflector	C, CC-6	1150	855lm		4.13
	PAR38	Med Side Prong	13850	★	75PAR/3FL	120	12	Compact Flood	C, CC-6	2000	1040lm 1800 cd 30°		4.31
	R20	Med	14840	●	75R20/RP	120	6	Reflector Flood	C, CC-9	2000	500lm 500 cd 45°		3.94
	R30	Med	15146	●	75R30/BLACKLIGHT/RP	120	6	Blacklight	C, CC-6	1000			6.50
90	A19	Med	11396	●	100A/90/W/ES/4PK	120	48	Soft White Energy Saver	C, CC-8	750	1450	3.13	4.44
			11378	●	100A/90/SS	120	48	Standard Frost SuperSaver	C, CC-8	750	1480	3.13	4.44
			11382	●136,189	100A/90/SS	130	48	Standard Frost SuperSaver	C, CC-8	750	1480	3.13	4.44
			<i>@ 120_volts, approximate 79 watts, 1130 lumens, 1875 hours</i>										
	Med Brass		11386	●108	100A/90/SSXL	120	48	Standard Frost SuperSaver XL	C, CC-8	2500	1220	3.13	4.44
			11390	●108,136,186	100A/90/SSXL	130	48	Standard Frost SuperSaver XL	C, CC-8	2500	1230	3.13	4.44
			<i>@ 120_volts, approximate 79 watts, 940 lumens, 6250 hours</i>										
100	A19	Med	12948	●	100A/DAY/4/160/RP	120	160	Daylight	C, CC-8	750	1270	3.13	4.44
			12587	●	100A/DAY/RP/4/48	120	48	Daylight	C, CC-8	750	1270	3.13	4.44
			12952	●	100A/DAY/RP/2/24	120	24	Daylight	C, CC-8	750	1270	3.13	4.44
			12538	●103,136	100A/DAY/RP/4/48	130	48	Daylight	C, CC-8	750	1270	3.13	4.44
			<i>@ 120_volts, approximate 88 watts, 970 lumens, 1875 hours.</i>										
			16868	●	100A/DL/SW/PLUS/4PK/RP/160	120	160	Soft White Double Life	C, CC-8	1500	1560	3.13	4.44
			16864	●	100A/DL/SW/PLUS/4PK/RP	120	48	Soft White Double Life	C, CC-8	1500	1560	3.13	4.44
			11332	●108	100A/DL/SW/4PK/RP	120	48	Soft White Double Life	C, CC-8	1500	1530	3.13	4.44
			12480	●	100A/DL/SW/PLUS/2PK/RP	120	24	Soft White Double Life	C, CC-8	1500	1560	3.13	4.44
			12805	●108	100A/DL/SW/2PK/RP	120	24	Soft White Double Life	C, CC-8	1500	1530	3.13	4.44
			11660	●	100A/CL/DL/PLUS/2PK/RP	120	24	Clear Double Life	C, CC-8	1500	1590	3.13	4.44
			11176	●108	100A/CL/DL/RP	120	24	Clear Double Life	C, CC-8	1500	1550	3.13	4.44
			13002	●	100A/RS/2/RP	120	24	Inside Frost Rough Service	C, C-9	1000	1260	2.88	4.44
			12997	●	100A/RS/RP/1	120	12	Inside Frost Rough Service	C, C-9	1000	1260	2.88	4.44
			12998	●136,190	100A/RS/2/RP	130	24	Inside Frost Rough Service	C, C-9	1000	1260	2.88	4.44
			<i>@ 120_volts, approximate 88 watts, 960 lumens, 2500 hours</i>										
			12770	●	100A/W/4/RP	120	48	Soft White	C, CC-8	750	1690	3.13	4.44
			12752	●	100A/W/RP	120	24	Soft White	C, CC-8	750	1690	3.13	4.44
			12529	●	100A/CL	120	120	Clear	C, CC-8	750	1720	3.13	4.44
			11226	●	100A/CL/RP	120	24	Clear	C, CC-8	750	1720	3.13	4.44
			12531	●136,193	100A/CL	130	120	Clear	C, CC-8	750	1700	3.13	4.44
			<i>@ 120_volts, approximate 88 watts, 1290 lumens, 1875 hours</i>										
			12750	●	100A/4/RP	120	48	Standard Frost	C, CC-8	750	1710	3.13	4.44
			12735	●	100A/RP	120	24	Standard Frost	C, CC-8	750	1710	3.13	4.44
			11375	●136,193	100A	130	48	Standard Frost	C, CC-8	750	1700	3.13	4.44
			<i>@ 120_volts, approximate 88 watts, 1290 lumens, 1875 hours</i>										



ordering

series	lamp rows	nominal length	voltage	ceiling system	options
P-5900					
	1T8	02'	120	X1 exposed T-bar	EML*
	1T5	03'	277	X3B hard ceiling	EMH*
	1T5HO	04'	347*		DM
	1BX39w (3' only)	R_*	120-277		RSE†
	1BX_w*	*row length	*T8 & T5HO only		10THD†
	* biax, specify 40w, 50w or 55w				B_
					FH
					*consult factory for fixture lengths < 4'
					†T8 & biax only

Applications Retail displays, art galleries, corridors.

Features A recessed luminaire perfect for displaying art, merchandise or highlighting vertical surfaces. The specular reflector gives punch to the wall while concealing the lamp source.

Construction The housing, available in 2-, 3- or 4-foot standard lengths, and flange trim are made of die-formed, 20-gauge steel.

Finish The standard housing and trim color is gloss white (YGW) using polyester powder paint.

Electrical T8 and biax fixtures have instant-start electronic ballasts with less than 20% THD. T5/HO fixtures have programmed-start electronic ballasts with less than 10% THD. Fixtures are U.L. Damp

labeled (non-emergency) and I.B.E.W. manufactured. Maximum ballast size available: 2 3/8" width x 1 1/2" height.

Mounting Fixture is recess-mounted in either exposed T-bar or hard ceiling application(s).

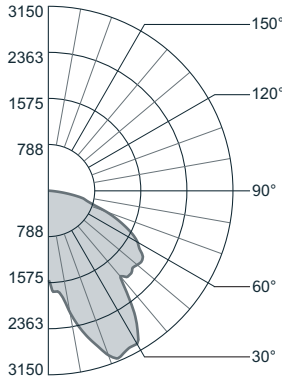
Options **EML:** emergency battery (T5/HO=600-700; T8=600-700 lumens; BX=600-700 lumens); **EMH:** emergency battery (T5/HO=1100-1400 lumens; T8=1100-1400 lumens; BX=1100-1200 lumens); **DM:** dimming (consult factory); **RSE:** rapid-start electronic (T8 & biax only); **10THD:** ballast with < 10% total harmonic distortion (T8 & biax only); **B_:** specific ballasts, specify manufacturer and catalog number (consult factory); **FH:** fixture fusing (slow blow).

P-5900 Wall Wash & Stack

photometric data

P-5900-1BX50W-04

Report # LSI16359 D=100.0% I=0.0%
Lamp Lumens: 8000 Input Watts: 98



Candlepower Summary

Vertical Angle	Horizontal Angle					Output Lumens
	0°	22.5°	45°	67.5°	90°	
0	1543	1543	1543	1543	1543	
5	1484	1704	1727	1738	1743	84
10	1471	1711	1748	1911	2145	
15	1441	1688	2075	2413	2619	293
20	1395	1675	2408	2779	3020	
25	1324	1767	2663	3066	3079	557
30	1231	1925	2852	2989	3047	
35	1119	2024	2758	2860	2571	732
40	995	2064	2639	2298	1925	
45	872	2061	2232	1872	2011	734
50	738	1982	1635	1885	1990	
55	601	1759	1580	1896	1980	720
60	467	1517	1467	1746	1764	
65	332	1144	1346	1533	1451	599
70	226	804	1102	1175	1049	
75	136	655	733	755	681	343
80	70	445	429	531	421	
85	38	203	148	187	74	91
90	0	0	0	0	0	

Zonal Lumen Summary

Zone	% Lamp	% Luminaire
0-90	56.39	100.00
90-180	0.00	0.00

Efficiency = 56.4%

Luminance Summary (cd/m²)

Angle	0°	45°	90°
45	6925	17792	16036
55	5884	15530	19459
65	4411	17952	19355
75	2950	15932	14833
85	2448	9549	4780

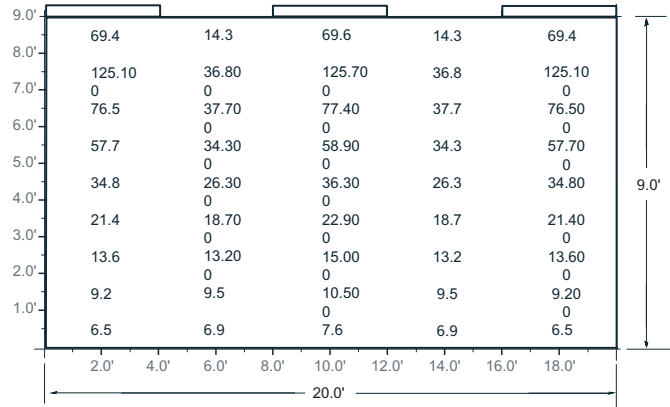
Coefficients of Utilization (%)

Floor Ceiling Wall	effective floor cavity reflectance = .20											
	80			70			50			30		
RCR 0	67	67	67	67	66	66	66	66	63	63	63	63
1	61	59	56	54	60	58	55	53	55	53	52	52
2	56	51	48	44	55	50	47	44	48	45	43	43
3	51	45	41	37	50	44	40	37	43	39	36	36
4	47	40	35	32	46	39	35	31	38	34	31	31
5	43	36	31	27	42	35	30	27	34	30	26	26
6	39	32	27	23	38	31	26	23	30	26	23	23
7	36	28	23	20	35	28	23	20	27	22	19	19
8	33	25	21	17	32	25	20	17	24	20	17	17
9	31	23	18	15	30	23	18	15	22	18	15	15
10	28	21	16	13	28	21	16	13	20	16	13	13

wall wash application

20' x 9' wall wash layout

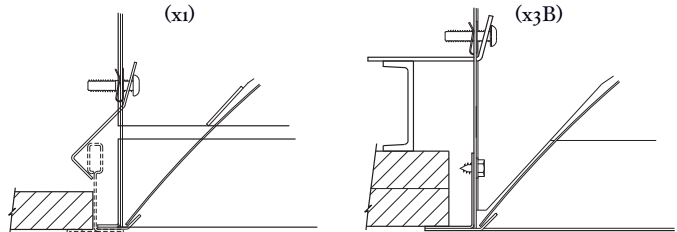
Fixture mounted 2' from wall
Average Illuminance/Vertical Grid (Wall Surface)



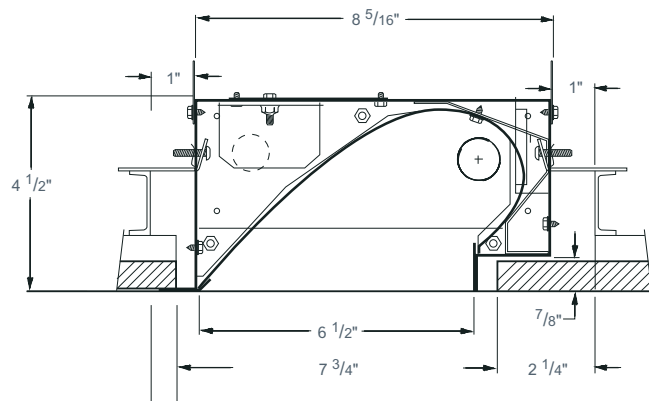
Individual Fixtures on 8' Centers – P-5900-1BX50W-04 Vertical Footcandles

Average Illuminance maintained (LLF = .70)	Max FC	Max : Min	FC's 1'A.F.F.
35.7 FC	125.7	19.2 : 1	8.8

Ceiling Systems

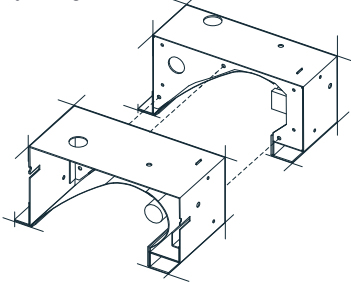


Ceiling Detail (x3B)

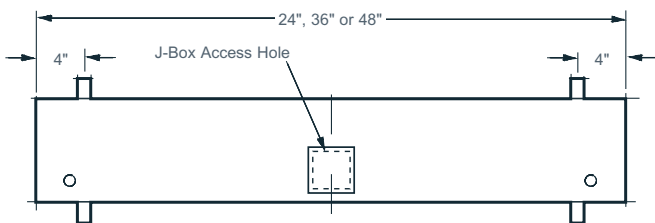


installation

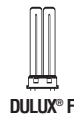
Adjoining Detail



Mounting Locations



In an effort to continually provide the highest quality products, Prudential reserves the right to change design specifications and/or materials, without notice.



DULUX® L HIGH LUMEN ECOLOGIC® COMPACT FLUORESCENT LAMPS

Nominal Wattage	Bulb	MOL		Base	Product Number	Ordering Abbreviation	NEMA Generic Designation	Pkg Qty	Avg Rated Life (hrs)	CCT (K)	CRI	Approx Lumens @25°C/77°F		Symbols & Footnotes
		(in)	(mm)									Initial	Mean	
50	L (T5)	22.6	573	2G11	20280	FT50DL/830/RS/ECO	FT50W/2G11/RS/830	10	14000	3000	82	4300	3655	1,2,5,12,20
55	L (T5)	21.1	535	2G11	20590	FT55DL/830/ECO	FT55W/2G11/830	10	12000	3000	82	4800	4128	1,2,5,12,17,20
					20726	FT55DL/930/ECO	FT55W/2G11/30	10	12000	3000	90	4800	4128	1,2,5,12,17,20
					20591	FT55DL/835/ECO	FT55W/2G11/835	10	12000	3500	82	4800	4128	1,2,5,12,17,20
					20592	FT55DL/841/ECO	FT55W/2G11/841	10	12000	4100	82	4800	4128	1,2,5,12,17,20
					20725	FT55DL/954/ECO	FT55W/2G11/50	10	12000	5400	90	4800	4128	1,2,5,12,17,20
80	L (T5)	22.6	4.5	2G11	20572	FT80DL/830/ECO	FT80W/2G11/830	10	12000	3000	82	6000	5160	1,2,5,12,17,20
			573	2G11	20622	FT80DL/835/ECO	FT80W/2G11/835	10	12000	3500	82	6000	5160	1,2,5,12,17,20
			4.5	2G11	20624	FT80DL/841/ECO	FT80W/2G11/841	10	12000	4100	82	6000	5160	1,2,5,12,17,20

DULUX F FLAT COMPACT FLUORESCENT LAMPS

Nominal Wattage	Bulb	MOL		Base	Product Number	Ordering Abbreviation	NEMA Generic Designation	Pkg Qty	Avg Rated Life (hrs)	CCT (K)	CRI	Approx Lumens @25°C/77°F		Symbols & Footnotes
		(in)	(mm)									Initial	Mean	
18	F (T5)	4.8	122	2G10	20551	CF18DF/830	CFM18W/2G10/830	10	10000	3000	82	1100	946	1,2,5,12,19,20
					20552	CF18DF/841	CFM18W/2G10/841	10	10000	4100	82	1100	946	1,2,5,12,19,20
24	F (T5)	6.7	171	2G10	20553	CF24DF/830	CFM24W/2G10/830	10	10000	3000	82	1700	1462	1,2,5,12,19,20
					20558	CF24DF/841	CFM24W/2G10/841	10	10000	4100	82	1700	1462	1,2,5,12,19,20
36	F (T5)	8.5	217	2G10	20559	CF36DF/830	CFM36W/2G10/830	10	10000	3000	82	2800	2408	1,2,5,12,19,20
					20560	CF36DF/841	CFM36W/2G10/841	10	10000	4100	82	2800	2408	1,2,5,12,19,20

DULUX EL SELF-BALLASTED COMPACT FLUORESCENT LAMPS

Mini Twist Compact Fluorescent Lamps

Nominal Wattage	Bulb	MOL		Base	Product Number	Ordering Abbreviation	Voltage	Pkg Qty	Avg Rated Life (hrs)	CCT (K)	CRI	Approx Lumens @25°C/77°F		Symbols & Footnotes
		(in)										Initial	Mean	
7	MINITWIST	4.4	Medium	2G10	29451	CF7EL/MINI/827	120	6	8000	2700	82	375	300	1,3,8,9,12,14,20
					29379	CF7EL/MINI/830	120	6	8000	3000	82	375	300	1,3,8,9,12,14,20
					29371	CF7EL/MINI/830/BL	120	6	8000	3000	82	375	300	1,3,8,9,12,14,20
		4.2	Medium	2G10	29697	CF7EL/SUPER/830/BL	120	6	10000	3000	82	375	300	1,3,8,9,12,14,20
11	MINITWIST	4.2	Medium	2G10	29766	CF11EL/SUPER/830/BL	120	6	10000	3000	82	600	480	1,3,8,9,12,14,20
					29378	CF11EL/MINI/830	120	6	8000	3000	82	600	480	1,3,8,9,12,14,20
					29364	CF11EL/MINI/830/BL	120	6	8000	3000	82	600	480	1,3,8,9,12,14,20
13	MINITWIST	4.6	Medium	2G10	29409	CF13EL/MINI/827	120	6	10000	2700	82	800	640	1,3,8,9,12,14,20

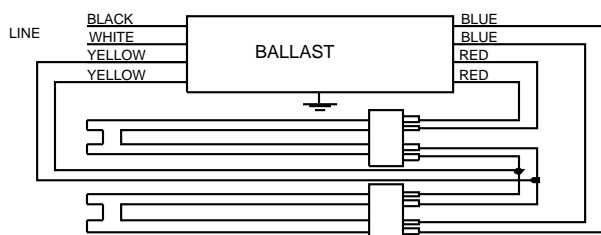
REL-2TTS50

Brand Name	STANDARD ELEC
Ballast Type	Electronic
Starting Method	Rapid Start
Lamp Connection	Series
Input Voltage	120
Input Frequency	60 HZ
Status	Active

Electrical Specifications

Lamp Type	Num. of Lamps	Rated Lamp Watts	Min. Start Temp (°F/C)	Input Current (Amps)	Input Power (ANSI Watts)	Ballast Factor	MAX THD %	Power Factor	MAX Lamp Current Crest Factor	B.E.F.
* FT50W/2G11/RS	2	50	50/10	0.90	106	0.98	20	0.98	1.7	0.92
FT55W/2G11	2	55	50/10	0.83	99	0.84	20	0.99	1.6	0.85

Wiring Diagram



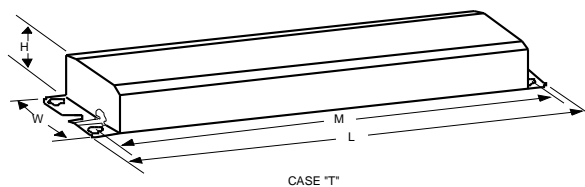
Diag. 94

The wiring diagram that appears above is for the lamp type denoted by the asterisk (*)

Standard Lead Length (inches)

	in.	cm.		in.	cm.
Black	12		Yellow/Blue		
White	12		Blue/White		
Blue	24		Brown		
Red	24		Orange		
Yellow	24		Orange/Black		
Gray			Black/White		
Violet			Red/White		

Enclosure



Enclosure Dimensions

OverAll (L)	Width (W)	Height (H)	Mounting (M)
9.50 "	2.375 "	1.5 "	8.90625 "
9 1/2	2 3/8	1 1/2	8 29/32
24.1 cm	6 cm	3.8 cm	22.6 cm

Revised 08/17/2006



Data is based upon tests performed by Philips Lighting Electronics N.A. in a controlled environment and is representative of relative performance. Actual performance can vary depending on operating conditions. Specifications are subject to change without notice. All specifications are nominal unless otherwise noted.

PHILIPS LIGHTING ELECTRONICS N.A.

10275 WEST HIGGINS ROAD · ROSEMONT, IL 60018

Tel: 800-322-2086 · Fax: 888-423-1882 · www.philips.com/advance

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REL-2TTS50	
Brand Name	STANDARD ELEC
Ballast Type	Electronic
Starting Method	Rapid Start
Lamp Connection	Series
Input Voltage	120
Input Frequency	60 HZ
Status	Active

Electrical Specifications

Notes:

Section I - Physical Characteristics

- 1.1 Ballast shall be physically interchangeable with standard electromagnetic or standard electronic ballasts, where applicable.
- 1.2 Ballast shall be provided with integral leads color-coded per ANSI C82.11.

Section II - Performance Requirements

- 2.1 Ballast shall be _____ (Instant or Rapid) Start.
- 2.2 Ballast shall provide Independent Lamp Operation (ILO) for Instant Start ballasts allowing remaining lamp(s) to maintain full light output when one or more lamps fail.
- 2.3 Ballast shall contain auto restart circuitry in order to restart lamps without resetting power.
- 2.4 Ballast shall operate from 60 Hz input source of 120V, 277V or 347V as applicable with sustained variations of +/- 10% (voltage and frequency) with no damage to the ballast.
- 2.5 Ballast shall be high frequency electronic type and operate lamps at a frequency between 20 kHz and 30 kHz or above 42 kHz to avoid interference with infrared devices and eliminate visible flicker.
- 2.6 Ballast shall have a Power Factor greater than 0.98 for primary lamp.
- 2.7 Ballast shall have a minimum ballast factor for primary lamp application as follows: 0.75 for Low Watt, 0.85 for Normal Light Output, and 1.20 for High Light.
- 2.8 Ballast shall provide for a Lamp Current Crest Factor of 1.7 or less in accordance with lamp manufacturer recommendations.
- 2.9 Ballast input current shall have Total Harmonic Distortion (THD) of less than 20% for Standard models (with the exception of the VEL-3P32-HL-SC which has a THD of <10%) and THD of less than 10% for Centium models when operated at nominal line voltage with primary lamp.
- 2.10 Ballast shall have a Class A sound rating for all 4-foot lamps and smaller.
- 2.11 Ballast shall have a minimum starting temperature of _____ [-18C (0F) for standard T8 lamps, 10C (50F) for T8/HO, standard T12, Slimline T12 and Long Twin Tube lamps, 0C (32F) for Slimline T8, -29C (-20F) for T12/HO lamps,] for primary lamp application. Ballast shall have a minimum starting temperature of 60F (16C) for energy-saving T8 and T12 lamps.
- 2.12 Ballast shall tolerate sustained open circuit and short circuit output conditions without damage.

Section III - Regulatory Requirements

- 3.1 Ballast shall not contain any Polychlorinated Biphenyl (PCB).
- 3.2 Ballast shall be Underwriters Laboratories (UL) listed, Class P and Type 1 Outdoor; and Canadian Standards Association (CSA) certified where applicable.
- 3.3 Ballast shall comply with ANSI C62.41 Category A for Transient protection.
- 3.4 Ballast shall comply with ANSI C82.11 where applicable.
- 3.5 Ballast shall comply with the requirements of the Federal Communications Commission (FCC) rules and regulations, Title 47 CFR part 18, Non-Consumer (Class A) for EMI/RFI (conducted and radiated).

Section IV - Other

- 4.1 Ballast shall be manufactured in a factory certified to ISO 9002 Quality System Standards.
- 4.2 Ballast shall carry a five-year warranty from date of manufacture against defects in material or workmanship, including replacement, for operation at a maximum case temperature of 70C.
- 4.3 Manufacturer shall have a fifteen-year history of producing electronic ballasts for the North American market.

NOTE: The use of Optanium (IOP) and ICN-2P32-N models is recommended to reduce striation in energy-saving T8 lamps (25W, 28W or 30W). Remote or tandem wiring of energy-saving T8 lamps (25W, 28W or 30W) is only recommended for Optanium (IOP) models.

Revised 08/17/2006



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