



prismatron™



Winner of the Lighting Design Awards 2003
"Innovations: Contribution to Sustainability"

Controllable System for High Wattage Metal Halide Lamps

The Prismatron system is the first energy management system to dim high wattage metal halide lamps. The controllable high frequency electronic ballast allows continuous dimming to 25% of initial lumens, offering up to 50% energy savings, a longer lamp life and improved lumen depreciation.

Each ballast controls two luminaires, which are available with a choice of four reflector styles to suit a variety of applications from industrial to retail. All luminaire types use prismatic glass reflectors providing maximum efficiency and precise optical control.

Prismatron is a revolutionary development with typical payback periods of 12 to 18 months dependent on total scheme design.

Applications

Factories
Warehouses
Aircraft hangars
Retail outlets
Restaurants
Exhibition areas
Airports

Prismatron Luminaire

Features and Benefits

- Luminaire design with no control gear
Light weight & reduced size
- Prismatic borosilicate glass reflectors
Controlled light output
Maximum efficiency
Low glare
- Venturi effect
Self-cleaning luminaire
Reflectors stay cleaner for longer
Minimal maintenance costs
- Choice of 4 reflector types
Flexibility to suit a variety of applications
- Choice of light distributions
To suit exact dimensions of environment
- Decorative injection-moulded cover
Quality combined with style
- Supplied with 2m flying lead and plug & socket design
Quick and easy installation

Lamp Types (Included)

- 400W ceramic metal halide
- 320W - 400W metal halide

IP Rating

- IP20 (luminaire)
- IP30 (ballast)

Approvals

- Designed to EN60598-2-1
- **CE**

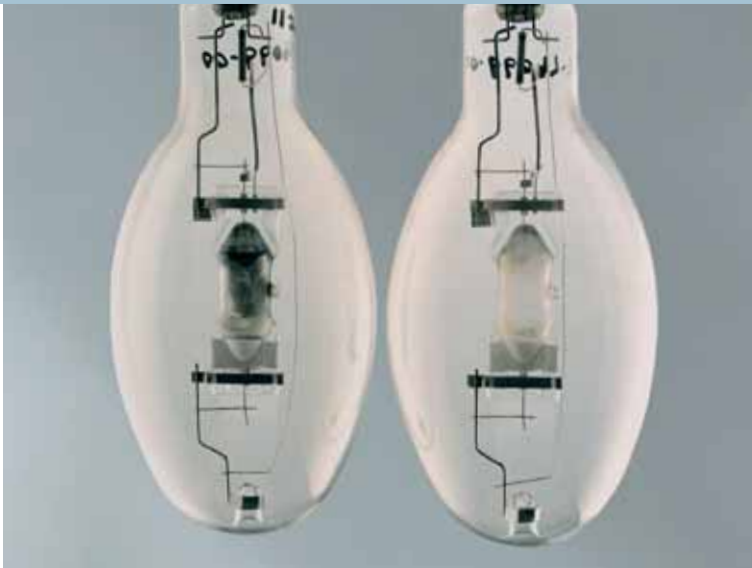




Prismatron Electronic Ballast

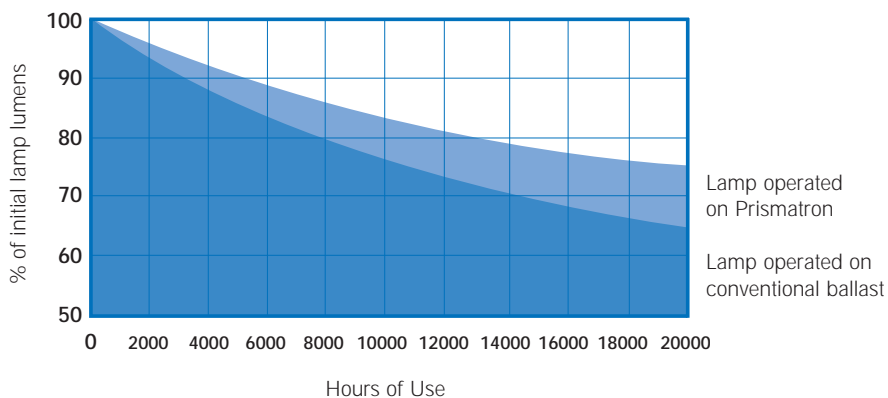
Features and Benefits

- Continuous dimming to 25% of initial lumens
Up to 50% energy savings
- Lamp company endorsements (GE Lighting & Venture Lighting)
Reliability
- 0-10V signal control voltage
Industry standard control voltage
- High frequency operation
Lamp colour temperature stable over dimming range
Reduced stroboscopic effect
Silent operation
- Soft lamp start-up
Improved lamp lumen depreciation
- Remote mounting from luminaire head
Flexibility in mounting locations
Busbar trunking systems
Cable trays
Surface mounting
Other ceiling structures
- Up to 12m spacing between luminaires (including drop)
Wide spacing characteristics
- Light weight
Reduced strength of fixing locations
- Reduced cable size & lower fuse ratings
Lower installation costs
- Input voltage range 207 - 277V 50/60Hz
Wide range of operating voltages
- Built-in thermal protection
Protects ballast against excessive temperature
Automatically restores power when ballast temperatures drop
- High power factor through dimming range (>0.97)
Low ballast losses
- Output power independent of input voltage
Constant lamp voltage



Two 400W metal halide lamps, taken at mean lamp life (8,000 hours). The lamp on the left shows the arc tube blackening effect caused by standard magnetic ballasts. The lamp on the right shows the minimal arc tube discoloration. This is characteristic of lamps operated by the Prismatron electronic ballast. The lamp on the right, powered by Prismatron, will generate more lumens than the lamp on the left therefore reducing the total quantity of luminaires required and extending relamping intervals.

Performance comparison for metal halide lamps operated on conventional ballasts and Prismatron




NOTE: Curve shown is approximate determined under test conditions. Metal halide lumen maintenance will vary from lamp to lamp under different burning conditions. Initial data for ceramic metal halide lamps show a similar benefit when operated on Prismatron.

LightSave - Energy Savings Calculation Software

Holophane's Lighting Design team utilise LightSave, the Prismatron daylight energy saver, a software package which demonstrates the energy savings that can be achieved utilising the Prismatron system. Savings can be achieved as a result of the system dimming due to daylight contribution into a building. This software was designed by Bartlett Lighting, University College of London, especially for Holophane. Calculations of energy savings are based on hourly daylight availability derived from diffuse illuminance measurements made at the BRE Watford, United Kingdom, during 1992.



Lamp Manufacturers' Endorsements



**VENTURE
LIGHTING**
An Advanced Lighting Technologies Company

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December 18, 2002

Holophane Prismatron™ System with the Venture Lighting 320W and 400Watt Uni-Form® Pulse Start Lamps


Venture Lighting International has agreed to extend its Uni-Form pulse start lamp warranty to the HIPE 320W and 400W Uni-Form pulse start lamps, when operated as part of the Holophane Prismatron electronic ballast system. Venture Lighting International hereby represents that this lamp will conform to the current published specifications listed below and features an improvement in lamp lumen maintenance.

- The 320W and 400W Uni-Form lamps will be compatible with the Holophane Prismatron system in regards to lamp starting and operation.
- The 320W and 400W Uni-Form lamps will have the same life rating (20,000+ hours) as the 320W and 400W lamp operated on a standard electromagnetic system.
- Color uniformity and color quality of the 320W and 400W Uni-Form lamps will be at least as good as that of the 320W and 400W lamps operated on a standard electromagnetic system.
- Lamp lumen depreciation of the 320W and 400W Uni-Form lamps will be improved to 85% when used as part of the Prismatron system.

In addition, the Venture Lighting Dimming Warranty will also apply to the HIPE 320W and 400W Uni-Form lamps when operated as part of this system.

Lamp warranties will be extended to additional Venture Lighting International products on a case by case basis.

Jerrilifer Gerlock
Assistant Product Manager
Venture Lighting International



GE Lighting Europe

Eddie C. Guest
Product Manager
HID

Melton Road,
Leicester, LE4 7PD
England

Date: August 8th 2002

**Holophane / GE
HID Electronic Ballast System**

GE Lighting and Holophane have recently concluded long term testing of GE Multi-Vapor lamps and Holophane Electronic ballasts aimed at verifying system performance in typical metal halide applications.

Based on the test results, GE Lighting is pleased to announce that the basic Metal Halide Lamp warranty will be extended to cover standard, Ceramic Metal Halide (CMH) lamps when operated on the new Electronic Ballast System developed by Holophane Corporation.

Specifically:

- Lamp & ballasts are compatible with regard to starting and operation similar to standard CWA electromagnetic systems
- Comparable life rating to standard CWA electromagnetic ballasts - 20,000 hrs median life for 11 hour on, 1 hr off
- Comparable colour uniformity and colour quality, initial and over life
- Lamp Lumen depreciation is greatly improved on Electronic Ballast System:
- For standard Multi-Vapor lamps warranty will be based on nominal lumen maintenance factor of 75 % vs. typical 65% on CWA electromagnetic systems

Based on the extensive testing completed on 400watt lamps, GE Lighting will extend its lamp warranty to cover other wattages on the new Holophane Electronic Ballast system on a case by case basis.

Attached are typical Lumen Maintenance curves comparing standard electromagnetic performance vs. the new Electronic Ballast System.

Eddie Guest
HID Product Management
GE Lighting Europe



.DC reflector style option

The addition of the dished lens .DC option to the luminaire head creates an interesting visual appearance. This option is best suited to retail applications where the electric blue dished canopy creates an additional touch of upward light flare to interior ceiling voids.

Combined Control of Light & Energy

PrismaTron luminaires use prismatic glass reflector/refractors which are synonymous with the Holophane name. It stands for high quality precise optical control and greater efficiency, combined with the energy saving features of the PrismaTron dimmable ballast, in short light spaces with fewer luminaires and reduce energy costs.

PrismaTron comes in three reflector styles each suitable for different applications:

- .GA Glass and aluminium reflector combined.
- .GF Glass reflector in frame.
- .GO Glass reflector only.



Typical Highbay

PrismaTron



.GF reflector style

This reflector allows both direct downward and indirect upward light to illuminate the ceiling void whilst enhancing vertical illuminance. Supported in a frame this type of reflector can be used in many and varied applications.



.GO reflector style

Also using the same glass as the .GF option creating a balanced visual environment through direct and indirect light, but without the support frame assembly. This creates a modern visual appearance with clean lines.



.GO with options
.DLC decorative lamp holder cover
.DRT decorative reflector trim



.GO with options
.DC decorative canopy
.DLC decorative lamp holder cover



.GA reflector style

This type of prismatic glass reflector has an aluminium spinning fixed to the outer side of the glass directing the maximum amount of light below the luminaire. The glass and aluminium reflector is best suited to more industrial applications where the maximum amount of light is required below the luminaires.



.GA with options
.DLC decorative lamp holder cover

Note: For applications containing excessive vibration, corrosive atmospheres and for areas where the luminaires could be subject to impact from objects (such as in a gymnasium), Holophane recommends the GO reflector style is not used and the GF or GA reflector style is considered.

Images above all shown with HEL.OK accessory (Karabiner Hook) fitted.

Typical Busbar Installation Illustration

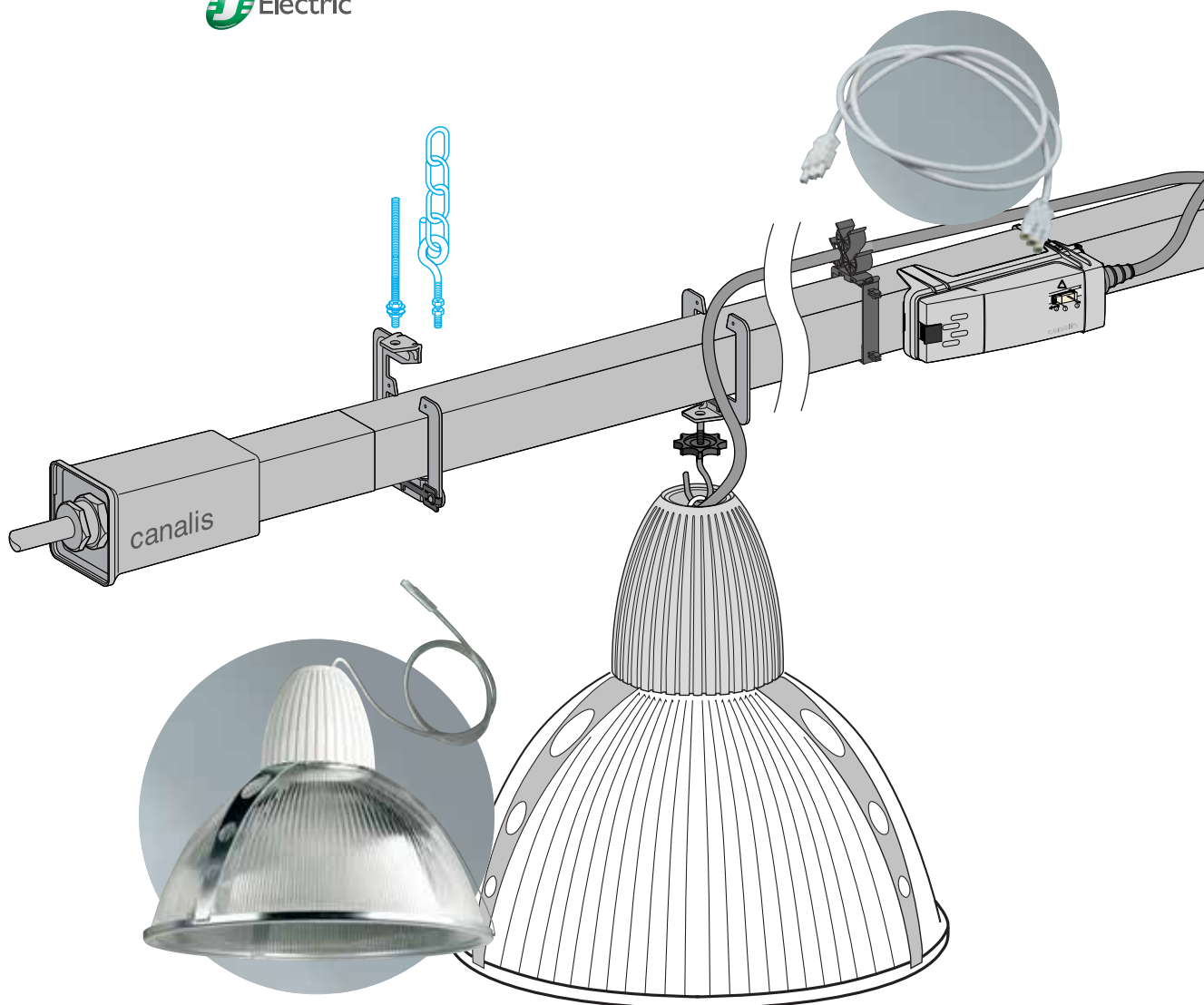
This is a typical Prismatron system installation where the luminaires are mounted to a Telemecanique Canalis KBB lighting busbar trunking system. The busbar in this illustration distributes power and contains a 0-10V signal control wire to address the ballast. Any 0-10V signal from a BMS (Building Management System) will control the ballast. Alternatively a Holophane photocell accessory can be used to send a 0-10V signal to up to 50 ballasts. See page 2.9 for details.

Prismatron is designed to suit the Telemecanique Canalis Busbar Trunking KBB lighting range manufactured by Schneider Electric. For more information on Canalis contact Schneider Electric Limited.

Note: Luminaires should not be spaced more than 12 metres apart including the cable drop to the luminaire.

Canalis® **Schneider Electric**

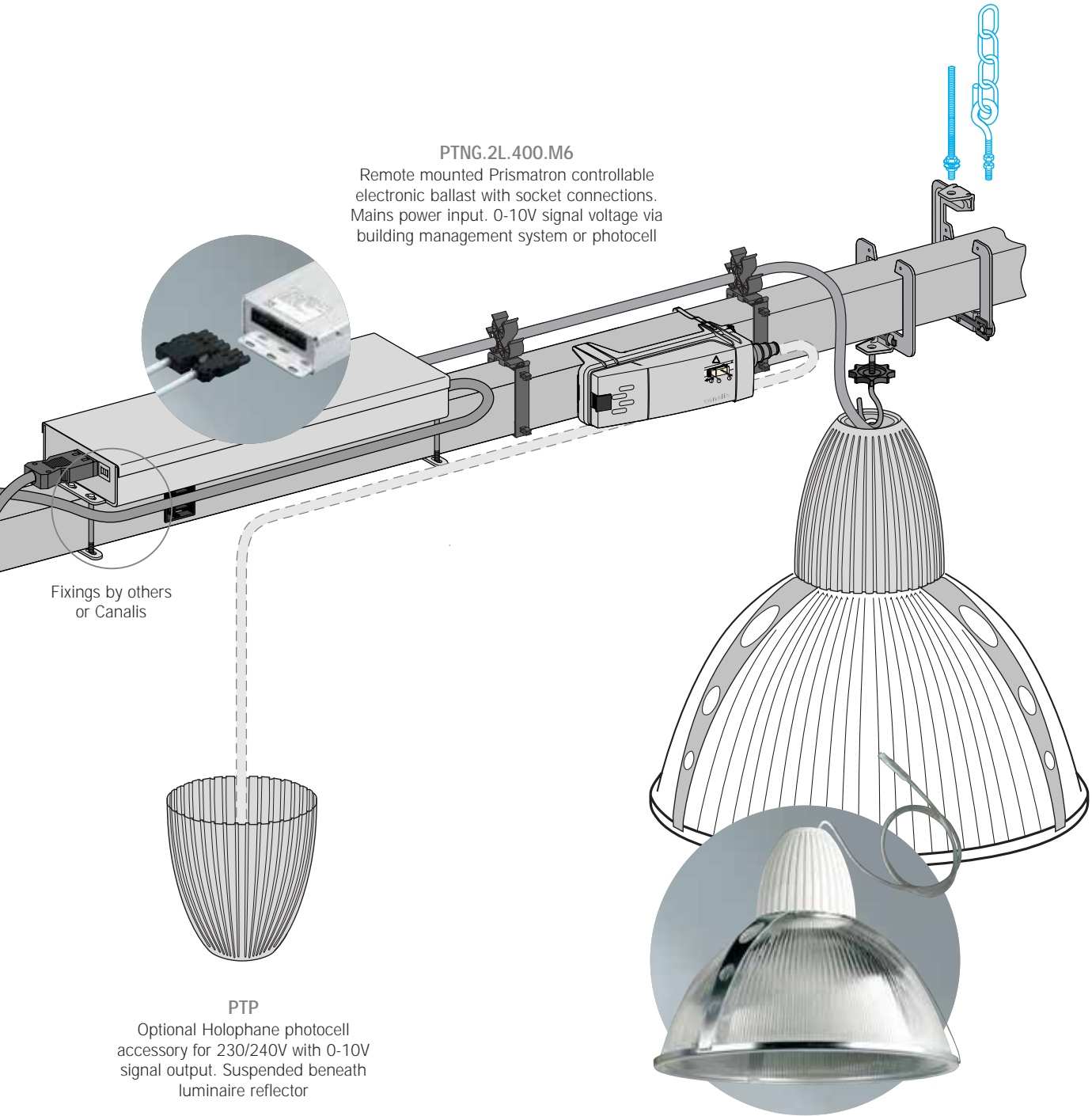
PTNW2M
2m inter-connecting cable wiring
accessory with factory fitted plugs to
suit Prismatron remote gear box



PTN400CMDP.1639.GO.DRT.DLC
400W Prismatron luminaire head complete
with 2m flying lead and plug

PTNG.2L.400.M6

Remote mounted Prismatron controllable electronic ballast with socket connections. Mains power input. 0-10V signal voltage via building management system or photocell



Fixings by others or Canalis

PTP

Optional Holophane photocell accessory for 230/240V with 0-10V signal output. Suspended beneath luminaire reflector

PTN400CMDP.1639.GO.DRT.DLC.M6

400W Prismatron luminaire head complete with 2m flying lead and 5-pin plug

Photocell Technical Information

Performance

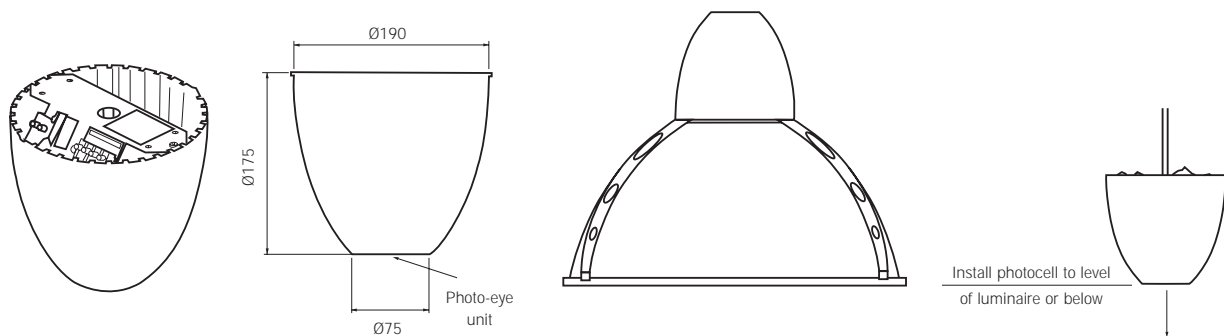
One Holophane photocell accessory (code PTP) will control the dimming operation of a cluster of up to 50 ballasts (100 luminaires).

Positioning

The photocell is mounted in a custom-designed pendant ready for suspension (see diagram below). The photocell will be positioned at or towards the centre of the luminaire cluster that it is controlling (see diagram of typical luminaire cluster including photocell position on page 2.12).

Installation

The photocell should be mounted at the same height as the luminaires and should be aimed at the floor. The photocell requires a mains supply which should be available at a suitable point near to the mounting position. (See diagram on page 2.12). The photocell output (0-10 volts DC) is linked to each ballast in series. For ease of installation it is acceptable to have a number of series spurs. It is recommended that the control wire has a maximum resistance of 0.075 ohms/m. Alternatively the cell can be directly connected into a busbar system that has an integrated 'twisted pair' control circuit. (See diagram on page 2.12). The photocell has an automatic 15 minute "hold high" relay built in to ensure lamps are run at full output for the first 15 minutes when switched on.



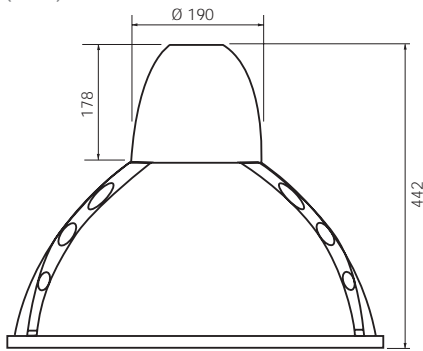
Commissioning

The photocell is to be commissioned by Holophane Field Service engineers to set the design lighting level as agreed with the customer. This operation needs to be carried out during hours of darkness.

Presence detectors and set level switches

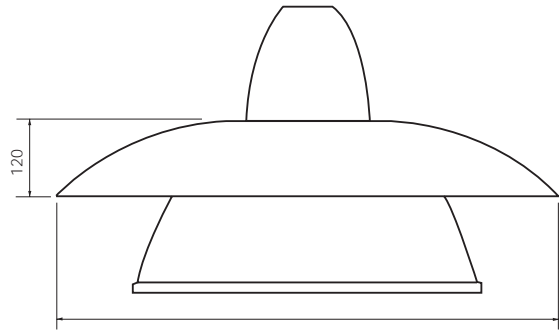
Presence detectors (PIR's) and set level switches are also available. Please contact Holophane for a made-to-measure design solution.

Dimensions (mm)



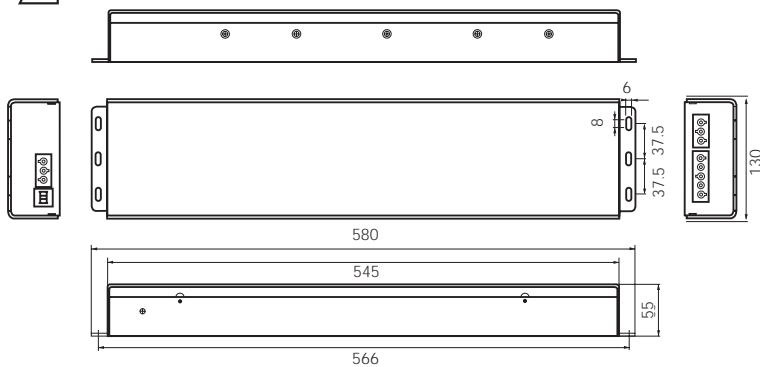
Ø 546 6640 Glass Reflector
 Ø 480 6639 Glass Reflector
 Ø 400 6631 & 6635 Glass Reflectors

.GA, .GF & .GO reflector styles
 with .DLC & .DRT options

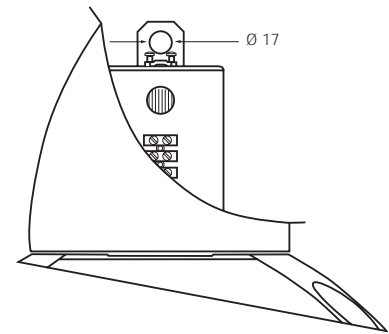


.DC reflector style

Dimensions (mm)



Prismatron ballast



Fixing detail

Weights & Thermal Data

Prismatron Luminaire	6640 Glass Reflector (kg)	6639 Glass Reflector (kg)
.GF reflector style	9	8
.GA reflector style	10	9
.GO reflector style	8	7
.DC decorative canopy option	+1.5	+1.5

Prismatron Ballast	Weight (kg)	Minimum Operating Temperature (°C)	Maximum Ambient Temperature (°C)*
PTNG	3	-20	35

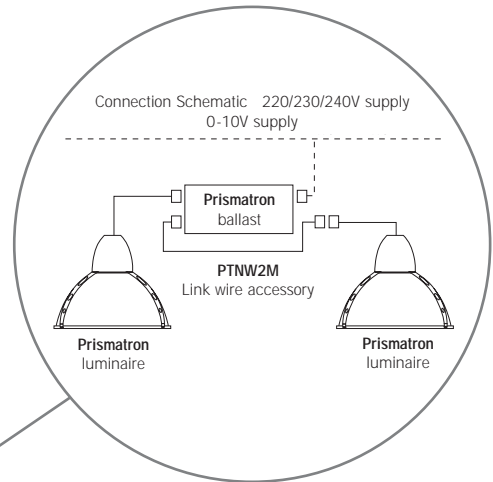
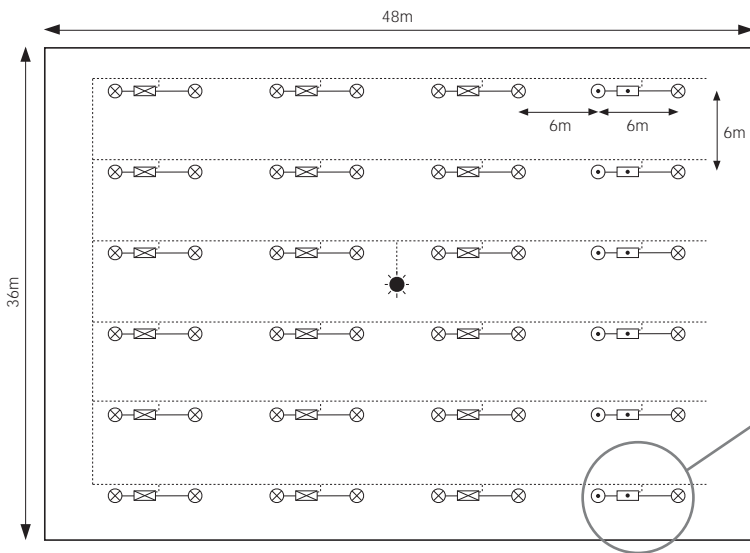
* An ambient temperature that oscillates above and below this level is acceptable up to a maximum of 40 °C peak temperature.

Note: Exceeding ballast temperatures, either magnetic or electronic, will shorten life.

Note: Prismatron ballasts require the lamps to run up to full output for 15 minutes before the lamps can be dimmed.



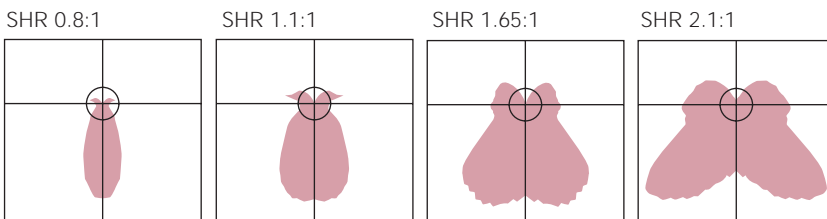
Example Scheme Call Off



- ⊗ 42 PTN400CMDP.1539.GF Prismatic luminaire
- 6 PTN400CMDP.1539.GF.M6 Prismatic auxiliary luminaire
- ⊗ 18 PTNG2L400 Prismatic ballast
- ▢ 6 PTNG2L400.M6 Prismatic auxiliary ballast
- 24 PTNW2M Link wire accessory*
- ☀ 1 PTP1 Remote photocell accessory

* This example assumes 6m spacings with no drop to the luminaire i.e. mounted directly to a surface/trunking system

Light Distributions



SHR = spacing to height ratio

Photometric data is available on the Holophane cd-rom or at www.holophane.co.uk









Plug & socket design

207 - 277V 50/60Hz input voltage
0 - 10V signal voltage input



Output to two Prismatic luminaires
(.M6 auxiliary version)

Ordering Details - Luminaire

Code		Prismatron Luminaire Head complete with 2m flying lead & plug				
PTN	Code	Lamp Type	Reflector Style	Light Distribution	Nominal SHR	Reflector
	320HDPSP	320W coated 3700K protected pulse start metal halide lamp E40 base				
	350HDPSP	350W coated 3700K protected pulse start metal halide lamp E40 base				
	400CMDP	400W coated 3700K protected ceramic metal halide lamp E40 base				
	400CMTP	400W clear 4000K protected ceramic metal halide lamp E40 base				
	400HDPSP	400W coated 3700K protected pulse start metal halide lamp E40 base				
	400HTPSP	400W clear 4000K protected pulse start metal halide lamp E40 base				
			Coated lamps - glass only reflector			
	.0840.GO	Glass only reflector	Focusing	0.8:1*	6640	
	.1240.GO	Glass only reflector	Intensive	1.2:1*	6640	
	.1639.GO	Glass only reflector	Broad	1.65:1*	6639	
	.2139.GO	Glass only reflector	Extensive	2.1:1*	6639	
			Clear lamps - glass only reflector			
	.0840.GO	Glass only reflector	Focusing	0.8:1*	6640**	
	.1231.GO	Glass only reflector	Intensive	1.2:1*	6631**	
	.1535.GO	Glass only reflector	Broad	1.55:1*	6635**	
	.2331.GO	Glass only reflector	Extensive	2.35:1*	6631**	
			Coated lamps - glass in frame reflector			
	.0840.GF	Glass in frame reflector	Focusing	0.8:1*	6640	
	.1240.GF	Glass in frame reflector	Intensive	1.2:1*	6640	
	.1639.GF	Glass in frame reflector	Broad	1.65:1*	6639	
	.2139.GF	Glass in frame reflector	Extensive	2.1:1*	6639	
			Clear lamps - glass in frame reflector			
	.0840.GF	Glass in frame reflector	Focusing	0.8:1*	6640**	
	.1231.GF	Glass in frame reflector	Intensive	1.2:1*	6631**	
	.1535.GF	Glass in frame reflector	Broad	1.55:1*	6635**	
	.2331.GF	Glass in frame reflector	Extensive	2.35:1*	6631**	
			Coated lamps - glass & aluminium reflector			
	.0940.GA	Glass & aluminium reflector	Focusing	0.9:1*	6640	
	.1240.GA	Glass & aluminium reflector	Intensive	1.2:1*	6640	
	.1639.GA	Glass & aluminium reflector	Broad	1.6:1*	6639	
	.2039.GA	Glass & aluminium reflector	Extensive	2.0:1*	6639	
			Clear lamps - glass & aluminium reflector			
	.0840.GA	Glass & aluminium reflector	Focusing	0.8:1*	6640**	
	.1040.GA	Glass & aluminium reflector	Intensive	1.0:1*	6640**	
			Code	Options		
	.CA		Safety chain fix			
	.M6		Auxiliary 150W TH lamp relay circuit***			
	.Y01		Complete with 3 hour sustained emergency battery and inverter contained in an IP23 enclosure for operating 100W 12V GY 6.35 lamp			
	.P01		Customer auxiliary 150W TH lamp supply 230/240V***			
	.DC		Decorative canopy****(.GO only)			
	.DRT		Decorative reflector trim****(.GO only)			
	.DLC		Decorative lamp holder cover****(.GA and .GO only)			
PTN	400HDPSP	.1639.GF	.M6	Example		

* Only 1 SHR specifiable per twin luminaire head arrangement.

** For ceramic lamps photometric data is preliminary.

*** Only one .M6 option per remote dimmable ballast.

**** Only for use with .GO reflector styles.

***** Only for use with .GA and .GO reflector styles.

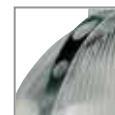
Note: For luminaire spacing greater than 4m (including drop) use link wire accessory (see next page).



.DC
Decorative canopy



.DLC
Decorative lamp holder cover



.DRT
Decorative reflector trim



.CA
Safety chain fix

Accessories

Code

PTN.WG.6631	Wire Guard for 6631 Reflector
PTN.WG.6635	Wire Guard for 6635 Reflector
PTN.WG.6639	Wire Guard for 6639 Reflector
PTN.WG.6640	Wire Guard for 6640 Reflector
HEL.OK	Open/closed loop adaptor (Karabiner)



Code

Remote ballast to run two luminaire heads 207-277V controllable 0-10V signal & plug & socket connection

PTNG	Prismatron remote mounted electronic ballast		
	Code	No. of Lamps	
	2L	Twin operation	
		Code	Lamp Wattage
		320	320W lamps
		350	350W lamps
		400	400W lamps
		Code	Options
		.M6	Auxiliary 150W TH lamp relay circuit*
PTNG	2L	400	.M6

Example



* Ballast only drives one .M6 luminaire

Code

Wiring Accessories

PTNW	Prismatron link wiring accessory	
	Code	Cable Supplied
	2M	2m of cable with pre-wired plugs for second luminaire head
	4M	4m of cable with pre-wired plugs for second luminaire head
	6M	6m of cable with pre-wired plugs for second luminaire head
	8M	8m of cable with pre-wired plugs for second luminaire head
PTNW	2M	

Example



Accessories – for independent use – cannot be combined

Prismatron Stand Alone Accessories

Five push button inputs - surface/recessed mount (single back box by others), providing high/low and two mid dimming levels and 230V on/off signal for contactors (by others), and 15 minute hold high timer at switch-on

PTN.5PBW15	Five Button White Switch Plate
PTN.5PBS15	Five Button Brushed Stainless Switch Plate
PTN.5PBB15	Five Button Brass Switch Plate

Photocell inputs providing 15 minute hold high timer at switch-on (230V supply) and variable set point control with remote adjustment. Unit will dim to reduce light/power during high daylight presence

PTN.PCD15	Photocell Sensor, Mounting Shroud and Variable Adjustment
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Presence detector with remote adjustment and 15 minute hold high timer at switch-on, providing minimum non-occupancy output and maximum output when occupied

PTN.PDD13015	Single 30m Range Presence Detector
PTN.PDD16015	Single 60m Range Presence Detector
PTN.PDD23015	Two Linked 30m Range Presence Detectors
PTN.PDD26015	Two Linked 60m Range Presence Detectors

Options for Use with BMS Systems

PTN.CS8	Eight Circuit Current Sink
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Wall mounted slider dimmer with switch (for contractors by others). Provides dimming for up to 50 x Prismatron Ballasts from 100% to 35% light output. Mounting onto surface or recessed single switch black box (by others).

PTN.SCB15	Holophane wall mounted slider dimmer with switch, finished in Brass.
PTN.SCS15	Holophane wall mounted slider dimmer with switch, finished in Brushed Stainless Satin.
PTN.SCW15	Holophane wall mounted slider dimmer with switch, finished in White

