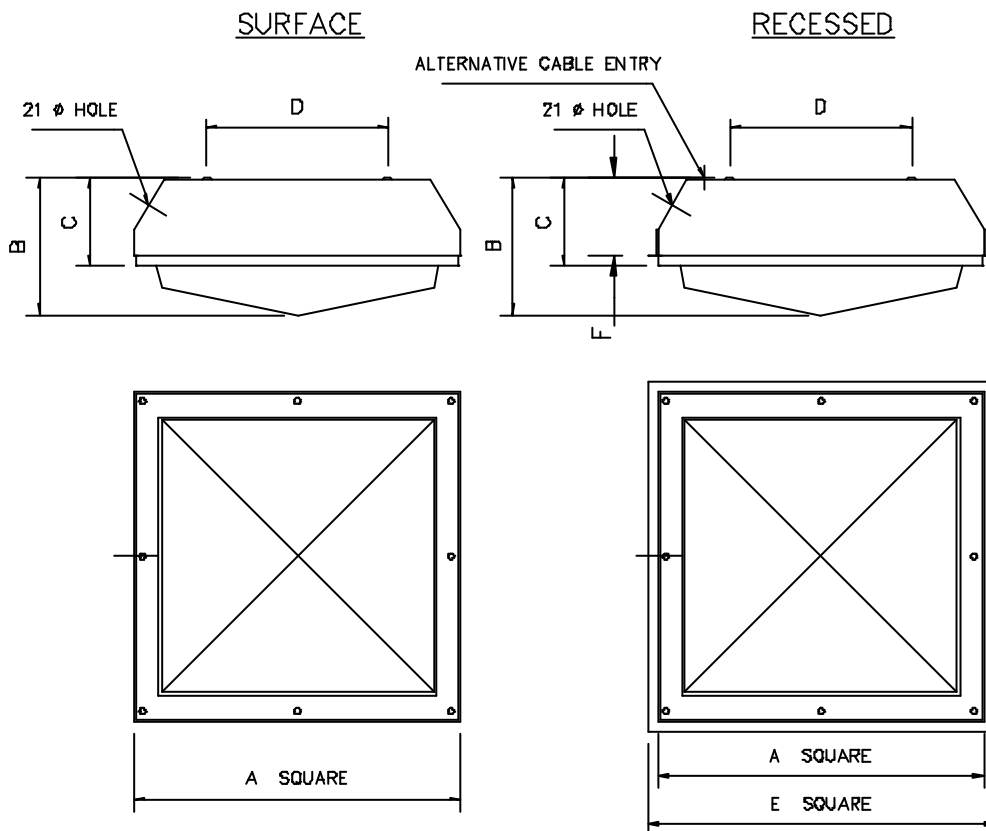


INSTALLATION, OPERATION AND MAINTENANCE INSTRUCTIONS

Pyramid Senior Luminaire

Important : Please read these instructions carefully before installing or maintaining this equipment. Good electrical practices should be followed at all times and this data should be used as a guide only.



	A	B	C	D	E	F
SENIOR SURFACE	630	264	168	350	—	—
SENIOR RECESSED	630	264	168	350	670	148

0.0 Specification

Area Classification	Non-Hazardous
Standard	BS EN 60598:1993
Ingress Protection	IP65 to BS EN 60529: 1992

CE Mark



The CE marking of this product applies to "The Electrical Equipment (Safety) Regulations 1994", "The Electromagnetic Compatibility Regulations 1992", the "Waste Electrical and Electronic Equipment Regulations 2006" and the "Equipment and Protective Systems intended for use in Explosive Atmospheres Regulations 1996". [This legislation is the equivalent in UK law of EC directives 73/23EEC, 89/336/EEC and 2002/96/EC respectively].

1.0 Introduction - Pyramid Senior Luminaire

The Pyramid Senior luminaire is suitable for HID lamps and indoor use where IP65 ingress protection is required. For outdoor use consult our Technical department.

Note : *The range of models and maximum ambient temperature ratings are outlined in TABLE 0.*

2.0 Storage

Luminaires and control gear boxes are to be stored in cool dry conditions preventing ingress of moisture and condensation.

Any specific instructions concerning emergency luminaires must be complied with.

3.0 Installation and Safety

3.1 General

In the UK, the '*Health and Safety at Work Act*' must be met. Lamps must be disposed of in a safe manner. The luminaires are Class 1 and should be effectively earthed. Handling and electrical work associated with this product to be in accordance with the '*Manual Handling Operations Regulations 1992*' and '*Electricity at Work Regulations 1989*'. Your attention is drawn to the paragraphs (i) 'Electrical Supplies', (ii) 'Electrical Fault Finding and Replacement' and (iii) 'Inspection and Maintenance'.

The luminaires are IP65 but are designed for indoor or covered locations.

The information in this leaflet is correct at the time of publication. The company reserves the right to make specification changes as required.

3.2 Electrical Supplies

The supply voltage and frequency can be between the range 220 to 254V and 50 to 60Hz. A maximum voltage variation of +6%/-6% on the nominal is expected. Continuous operation at more than +6%/-10% of the rated control gear setting is not advisable. The tappings are shown on the control gear and the limits are shown on the rating label. If the equipment is located in high or low voltage sections of the system, an appropriate voltage tap should be selected, but care must be taken to log or mark the equipment so that the tapping is re-set if the equipment is relocated. If in doubt, the tappings should be set on the high side. 10V maximum drop is desirable and the internal circuit uses a S.I.P. (superimposed pulse ignitor). This means that there are only two connections to the choke, making the tap selection obvious.

3.3 Lamps

The high pressure sodium lamp is of a standardised type. There is no preference between make or colour. All have E40 caps. The luminaire is designed to use the SON-E and MBI lamps and care must be taken to fit the correct lamp, in order to maintain the certification conditions and obtain the designed photometric performance. MBI lamps must be "SON gear compatible", or trouble will arise.

The lamp should be replaced shortly after it does not light. An indication of the end of life for the lamp is 'cycling', where the lamp goes out then re-ignites after a minute or so interval.

If the luminaires are burned continuously, they should be switched off occasionally to allow old lamps to fail to re-ignite, rather than possibly become diodes with possible detrimental effects to the control gear.

The luminaire has a thermal cut-out in the ballast and a line fuse to protect against fault conditions. If this operates, the cycle will be slow, i.e. 10 minutes or more.

At the time of printing the development of lamps and control gear is ongoing and detailed advice on lamp performance can be obtained from the lamp supplier or Chalmit.

This luminaire must not be energised without a lamp being fitted.

3.4 Mounting

Luminaires should be installed where access for maintenance is practical and in accordance with any lighting design information provided for the installation. The luminaire must be mounted such that there is no visible horizontal surface that may encourage any dust settlement and that the lamp axis is in the horizontal position. If the chassis of the luminaire is pierced for screws etc., then it is the installers responsibility to seal the fixings chosen such as not to compromise the certification rating of the luminaire.

Custom-made fixing arrangements are possible to special order prior to manufacture, which in no way pierce the basis luminaire.

Where a luminaire is surface mounted, any gaps may need to be suitably sealed to prevent dust ingress.

3.5 Cabling and Cable Glands

3.5.1 Cables

The temperature conditions at the supply cable entry point are such that 70°C (ordinary PVC) cable can be used.

If the Ta is 55°C then 85°C supply cable to be used.

The standard conductor section is 4mm maximum. Looping facility to special order only.

300/500V cable is suitable. The cable make up must be suitable to ensure the maintenance of the enclosure when the cable gland is fitted. The cable entry is located on the sloping side, if top entry is used 85°C cable must be used on all models.

3.5.2 Cable Glands

Cable glands when installed must maintain the IP protection of the enclosure. Consult with cable gland manufacturers to ensure suitability of gland. Rubber sealing washers and steel compression washers are provided with the unit. The user must ensure that the assembly fulfils the requirement. Where a new or unproven sealing arrangement is introduced, users should check a sample for substantial air tightness before making a full installation. Entries suitable for M20 cable glands are standard.

3.6 Cabling and Fitting Lamps

Cabling is by removing the front cover and gear tray. The front cover is secured by 8 x M6 captive screws. When removing the front cover care must be taken, as there are no hanging facilities provided. The polycarbonate lens is fixed to the front cover by double-sided adhesive tape. The gear tray need not be completely removed (although installation is made easier due to lighter weight). To gain access to the terminal block loosen M6 nuts and slide gear tray to the side and then pivot the gear tray downwards, which will now hang freely. This facility is provided purely to assist the installation and maintenance operations and for short term use only, otherwise completely remove the gear tray.

When cabling, disconnect the flying lead mounted socket from the gear tray. Install the connectors in the appropriate terminals, taking care not to bare them excessively. 1mm of bare conductor outside the terminal is a

maximum. When refitting the gear tray, re-connect the plug and socket and make a final check on the correct connections, making sure all cabling is neat and tidy. When refitting front cover, the fixing screws should be fully tightened.

Important : *Before proceeding, ensure the luminaire is isolated from mains supply and has cooled sufficiently. Remove front cover as previously discussed. Make sure that the correct lamp is selected. The lamp should be screwed firmly into the E40 GES lampholder. Replace front cover as previously discussed.*

3.7 Inspection and Maintenance

The luminaire must be de-energised before maintenance procedures commence.

Individual organisations will have their own procedures. What follows are guidelines based on our experience :

- 1 Ensure lamp is lit when energised.
- 2 Visually check front cover for damage. This should only be cleaned using a damp cloth to avoid static and only using a detergent recommended for use with polycarbonate. Visually inspect the remainder of the enclosure for superficial damage. If the polycarbonate lens is discoloured or damaged, a new front cover assembly must be fitted.
- 3 When de-energised and left to cool, there should be no sign of internal moisture. If there are signs of water ingress, the luminaire should be taken down and returned to Chalmit for investigation/repair.
- 4 Check gland for tightness and nip-up if required.
- 5 Check internal and external earths.
- 6 Check all terminations are firmly screwed down, tighten if necessary.
- 7 Check cover screws are firmly screwed down, tighten if necessary.
- 8 Every three years, or more frequently depending on experience, the front cover should be removed, gear tray swung down and all internal connections checked for tightness and any sign of corrosion or overheating. Any suspect components should be replaced. The cover gasket should be examined and if it has hardened or lost elasticity, the luminaire should be returned to Chalmit for replacement.

3.8 Electrical Fault Finding and Replacement

Any live fault finding must be done by a competent electrician and, if carried out with the luminaire in place, under a permit to work. Checks for obvious causes such as loose connections, unserviceable lamps or open circuit control gear should be made. Control gear will not normally go open circuit unless it has first been overheated. The signs of this are obvious, being severe discoloration of the paint on the gear and cracks in any exposed insulation. Similarly, a bad contact at the lamp cap will usually result in discoloration as a sign of overheating.

The ignitor may become faulty. If the lamp is fitted, the choke has continuity and the connections are good and correct, they should produce an attempt to start effect in the lamp and a buzzing sound from the ignitor.

It will be unusual to have no other parts available to perform a substitution fault finding routine and this is normal procedure.

If replacement lamps do not work and all above checks prove normal, then the gear tray should be returned to Chalmit for investigations/repair.

Before re-assembly, all connections should be checked and any damaged cable replaced. The unit has a line fuse in the gear tray terminal block. This is the BS1362 type, 13A should be used for 400W and 10A for 150/250W. If this fuse blows, the luminaire should be examined for obvious faults such as cable shorts and if none are found, the lamp should be replaced.

4.0 Fuse Ratings

The fuse ratings for HID lamp circuits need to take account of three components of circuit current. Current inrush to PFC capacitors which can be up to 25 x the rated capacitor current and last 1-2 millisecond; lamp starting current including steady capacitor current which together may decline from up to 200% of normal at 10 seconds after switch-on to normal after 4 minutes; rectification effects caused by asymmetrical cathode heating for a few seconds after starting, this effect is random and very variable.

With the availability of MCB's with a wide range of characteristics, the individual engineer can make a better judgement of what is required. The normal capacitor current will probably be the determining factor 0.076A per μF at 240V, 50Hz (adjust for other volts by multiplication $\times 6/5$ for 60Hz). For HBC fuses use 1.5 x normal capacitor current. Use MCB's suitable for high inrush to reduce current rating. All calculations must satisfy wiring regulations.

Note : *Starting and running currents for 240V, 50Hz are as indicated in TABLE 1.
A conventional matrix for HBC fuses is outlined in TABLE 2.*

5.0 Disposal of Material

The luminaire is fabricated from sheet steel.
The front cover lens is manufactured in polycarbonate.
The capacitor is of the dry film type and does not contain PCB's.
The control gear contains plastic parts and synthetic resin.
The ignitor contains electronic components and synthetic resins.
All the electrical components and the cover may give off noxious fumes if incinerated and this should only be done by licensed operators.
Care must be taken to render these fumes harmless or avoid inhalation.
All disposal should be in accordance with local authority regulations and the Environmental Protection Act 1990 - 'Waste Management - The Duty of Care'.
In accordance with the provisions of Section 6 of the 'Health and Safety at Work Act 1974' and as amended by the 'Consumer Protection Act 1987'. You should ensure that this information is made available to all concerned.
Any disposal must satisfy the requirements of the WEEE directive [2002/96/EC] and therefore must not be treated as commercial waste. The unit is mainly made from incombustible materials. The control gear contains plastic, resin and electronic components. All electrical components may give off noxious fumes if incinerated.

5.1 Lamps

Incandescent lamps, fluorescent lamps and discharge lamps in modest quantities are not "special waste". The outer envelope should be broken in the container to avoid injury.
This applies to the UK, there may be other regulations on disposal operating in other countries.

Important : *Do not incinerate lamps.*



To comply with the Waste Electrical and Electronic Equipment directive 2002/96/EC the apparatus cannot be classified as commercial waste and as such must be disposed of or recycled in such a manner as to reduce the environmental impact.

0.0 Tables

Table 0 Models and Maximum Ambient Temperature.

Refer to Section : 1.0

Cat. No.	T amb Max.
PYMSI/150 SON-E Surface	55°C
PYMSI/150 SON-E Pendant	55°C
PYMSI/250 SON-E Surface	45°C
PYMSI/250 SON-E Pendant	40°C
PYMSI/400 SON-E Surface	30°C
PYMSI/400 SON-E Pendant	30°C
PYMSI/250 MBI Surface	45°C
PYMSI/250 MBI Pendant	40°C
PYMSI/400 MBI Surface	30°C
PYMSI/400 MBI Pendant	30°C

Table 1 Starting and Running Currents

Refer to Section : 4.0

Lamp	Start A	Run A	Capacitance μ F	Circuit Power (W)
150W HPS	1.45	0.8	20	175
250W HPS	2.35	1.3	30	285
400W HPS	4.0	2.2	40	445
250W MBI	2.7	1.35	30	280
400W MBI	4.4	2.1	30	440

Note : Minimum power factor correction :0.85

Table 2 Fuse Ratings

Refer to Section : 4.0

Lamp Wattage	Number of Lamps					
	1	2	3	4	5	6
150W	4A	6A	10A	10A	16A	16A
250W	10A	16A	16A	20A	20A	20A
400W	16A	20A	20A	25A	25A	32A

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Note :

Chalmit Lighting reserve the right to amend characteristics of
our products, and all data is for guidance only.



Chalmit Lighting is a leading supplier of Hazardous Area and Marine Lighting products.