

ROAD AND AMENITY RANGE

INSTALLATION, OPERATION AND MAINTENANCE INSTRUCTIONS.

Introduction

The range of CHALMIT street lighting equipment is suitable for post top and group A and B applications to BS.5489. The range is suitable for a nominal ambient temperature rating t_a of 25°C. For use above this temperature refer to CHALMIT Technical Department.

General

Installation should be carried out in accordance with BS.5489 and any local code of practice and wiring regulations; in the U.K. the requirements of the "Health and Safety at Work Act" must be met. Lamps must be disposed of in a safe manner. Care must be taken to properly secure the luminaire and provide suitable supporting equipment when installation and maintenance work is being carried out. The luminaires are Class I and must be effectively earthed.

Electrical Supplies

The supply voltage and frequency should be specified when ordering. The expected voltage tolerance on the nominal supply is $\pm 6\%$. In some cases the luminaires have multi-tapped control gear. The tapplings are shown on the control gear. 20V max. below nominal is acceptable for MBFU and SOX lamps, 10V maximum below nominal is desirable for SON. If tapplings are re-set reference must be made to the ballast circuit diagram and, where appropriate, the ignitor circuit diagram.

Lamps

All the lamps used are of a standardised type and there is no preference between make or colour. Care must be taken to use the correct lamp. H.P.S. lamps with internal ignitors should not be used unless the luminaire has been specified for their use.

Discharge lamps, other than MBFU should be replaced shortly after they fail to light. This is to avoid ignition pulses continuing which can damage control gear, this also applies to luminaires being energised without a lamp fitted. If lamps start to cycle, that is successively extinguishing then re-igniting, they should be replaced as this is an indication of end of life.

Mounting

The luminaire should be mounted onto its correct spigot or bracket and to the full extent of the aperture. Where post top lanterns have a mounting direction, i.e. 'roadside', this should be observed. All the clamp screws should be fully tightened and the lantern checked for alignment.

Cabling

The cable should be suitable for the terminals and loading specified. Ordinary grade PVC cable is adequate. For those luminaires with integral gear 300/500V grade cable is suitable. Where luminaires suitable for HPS lamps and have remote gear, 600/1000V cable should be used. Note should be taken of any ignition distance limitation on cable length and care should be taken to connect the lamp ignition cable to the centre contact of the lampholder. The cable should be secured in the cable clamp.

The cable ends are bared back and firmly clamped in the correct terminals. The cable should not be bared back more than 1mm beyond the metal terminal.

Fitting lamps

The correct lamps must be selected. The cover is removed by either snapping off the clips or in the case of post top lanterns by undoing the securing knob or screws. After the lamp has been fitted the fastenings are replaced.

Inspection and Maintenance

For road lanterns an inspection should take place when the lamp is replaced or more frequently if the user's schedule specifies. Individual organisations will have their own procedures complying with statutory requirements.

The equipment must be de-energised before maintenance.

- 1) Ensure that the lamp lights when energised, subject to PEC control.
- 2) Examine for water ingress. If there is water ingress this should be dried out. The luminaire should be examined to determine the method of ingress and then rectified.
- 3) Check the incoming cable terminal connections and the security of the cable clamp.
- 4) Check for any sign of overheating on the control gear or lampholder and check the lampholder connections and igniter if fitted.
- 5) Clean the bowl.
- 6) Check the gaskets for deterioration and replace if necessary.
- 7) Refit the bowl checking that the retaining clips or screws are secure. Replace or rebend clips if necessary.
- 8) Check the clamping screws securing the luminaire.
- 9) Any remote gear should be inspected and tested.

Electrical Fault Finding and Replacement

With Mercury and SOX lamps the faults are simple, namely loose or broken connections, unserviceable lamps or open circuit control gear, tracking at terminals. Control gear will not normally go open circuit unless it has first overheated; the signs of this are obvious, being severe discolouration of the paint on the gear and cracks in any exposed insulation. Similarly, a bad contact at the lamp cap will usually result in discolouration as a sign of overheating.

Any fault finding must be done by a competent electrician.

With HPS, and some SOX, the ignitor can 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 buzz from the ignitor.

It will be unusual to have no other parts available to perform a substitution fault finding routine and this is the normal procedure. Before re-assembling all connections should be checked and any damaged cable replaced. All the spares required are available. Please state the model number, lamp and bowl details.

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 miliseconds; the 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 will probably be the determining factor 0.076A per MF at 240V 50 Hz (adjust for other volts by multiplication, x 6/5 for 60 Hz). For HBC fuses use 1.5 x normal capacitor current. All calculations must satisfy wiring regulations.

Disposal of Material

The capacitor is of the dry film type and does not contain PCB's. The control gear contains plastic parts and polyester resin. The ignitor and photocell switch contain electronic components and synthetic resins. The bowls are acrylic or polycarbonate, internal wiring is PVC. All the electrical and plastic components may give off noxious fumes if incinerated. Care must be taken to render these fumes harmless or avoid inhalation. Any local regulations concerning disposal must be complied with.

The lamp manufacturers produce detailed information on the handling and disposal of lamps. It will be advantageous for the user to obtain copies of this information. For totally enclosed luminaires relamped when isolated and using lamps with outer envelopes, the following are the important points.

Break the outer envelope when inside a container in a ventilated area. Lamps may currently be considered as normal waste. If there are large quantities there may be local regulations on disposal.

DO NOT INCINERATE LAMPS

Dimensional Information

Model	Design Attitude °	Length mm	Width mm	Height mm	Spigot mm	Area m ²	Wt.Kg
GR100	5	667	186	206	42dia. x 203	0.104	2.85
GR102	5	915	186	206	42dia. x 127	0.158	9.80
GR150	5	915	186	206	42dia. x 127	0.158	4.31
GR152	5	1245	186	206	42dia. x 178	0.212	10.60
GR200	5	1245	186	206	42dia. x 178	0.212	6.35
GR304	5	597	508	311	42dia. x 102	0.136	6.58
GR501	5	597	165	143	34dia. x 80	0.075	2.27
GR551	5	540	171	181	34dia. x 80	0.087	3.8
GR553	5	540	171	181	34dia. x 80	0.087	3.8
GR526/II	5	460	170	172	34dia. x 80	0.06	2.2
GR526G/II	5	460	170	172	34dia. x 80	0.06	3.6
GR535	5	480	170	142	34dia. x 80	0.05	1.96
PT1180S	V	-	432/350	527	76dia. x 76	0.17	3.8
PT1183	V	-		527		0.17	5.2
PT1186	V	-		527		0.17	5.5
PT1187	V	-		527		0.17	5.5
PT1185	V	-		642		0.2	5.9
PT1181	V	-		527		0.17	6.0
PT1190	V	-		527		0.17	6.1
PT1195	V	-		527		0.17	7.4
PT1197	V	-		527		0.17	7.4
PT1198	V	-	"	527	"	0.17	7.5
PT1192	V	-		527		0.17	7.5
PT1044	V	-	432	915	60dia. x 60	0.21	8.5/10.5

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