

Ref	NR/GN/ELP/27035
Issue	I
Date	December 2004

Depot Protection Equipment List (formerly RT/E/C/27035)

This temporary front sheet facilitates change to the new Network Rail Standards referencing nomenclature.

The Ref above will be formally allocated to this standard when it is next changed in the meantime the contents, date and issue number of this Network Rail Standard are UNCHANGED and with immediate effect it should be referred to as “(new ref) formerly (old ref)”.

This document is the property of Network Rail. It shall not be reproduced in whole or part nor disclosed to a third party without the written permission of the Standard Owner.

© Copyright 2004 Network Rail

Uncontrolled copy once printed from its electronic source.

Published & Issued by: Network Rail; 40 Melton Street, London NW1 2EE



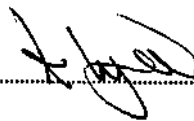
Ref	RT/E/C/27035
Issue	I
Date	December 2004

Network Rail Company Code of Practice

Depot Protection Equipment List (Formerly CP-PM-023)

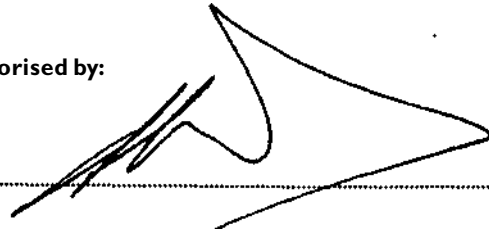
Endorsement & Authorisation

Endorsed by:



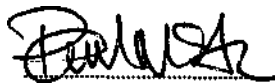
K. Lydford, Professional Head of Electrification & Plant Engineering

Authorised by:



A. McNaughton, Chief Engineer

Accepted for issue by:



P McAleer, Head of Standards Development Process

This document is the property of Network Rail. It shall not be reproduced in whole or part nor disclosed to a third party without the written permission of the Standard Owner.

©Copyright 2004 Network Rail

Uncontrolled copy once printed from its electronic source.

Published & Issued by: Network Rail 40 Melton Street, London NW1 2EE



Ref:	RT/E/C/27035
Issue:	I
Date:	December 2004

Issue record

Issue	Date	Comments
I	4 December 2004	Formerly CP-PM-023, Issue 4, August 1992. Transcribed to current Network Rail format with no technical changes.

Disclaimer

Network Rail, has used its best endeavours to ensure that the content, layout and text of this document are accurate, complete and suitable for its stated purpose. It makes no warranties, express or implied, that compliance with the contents of this document shall be sufficient to ensure safe systems of work or operation. Network Rail, will not be liable to pay compensation in respect of the content or subsequent use of this document for any purpose other than its stated purpose or for any purpose other than that for which it was prepared except where it can be shown to have acted in bad faith or there has been wilful default.

Supply

Copies of documents are available electronically, within Network Rail's organisation. Hard copies of this document will be available to Network Rail employees on request to the Document Controller and to other organisations from Technical Indexes Ltd (01344 404409)

Ref:	RT/E/C/27035
Issue:	I
Date:	December 2004

Contents

Section A	Warning Lights and Sounders	6
Section B	Physical Depot Protection	15
Section C	Miscellaneous	21
Appendix A	Ordering/Supplier Details	27
Appendix B	Typical Equipment Layout and System of Operation	36

Ref:	RT/E/C/27035
Issue:	I
Date:	December 2004

Page left intentionally blank



Ref:	RT/E/C/27035
Issue:	I
Date:	December 2004

Foreword for Users

Purpose of Booklet

- 1 The purpose of this equipment list is to standardise on equipment for depot protection purposes, thus achieving the benefits of speedier procurement and standardisation of parts, maintenance, and training together with the advantages of using equipment proven both in reliability and safety terms.
- 2 It is intended that, with the exception of the control panel Item C3, equipment detailed in this equipment list only shall be used.

Structure of Booklet

- 3 The Depot Protection Equipment List comprises a number of data sheets, specifying equipment approved for use at B.R. depots. As further items are approved, additional sheets will be issued.
- 4 For convenience the equipment is categorised in sections, as shown in the index. Appendix 'A' shows supplier details, approximate price, B.R. Catalogue Numbers, Call-Off Contract Numbers where appropriate and approximate delivery times from manufacturer's receipt of order. Appendix 'B' details a typical Depot Protection system; this is included as an illustration only.
- 5 Whilst the data sheets show the essential features of each item of equipment the HQ. Plant Engineer will continue to advise on the suitability of equipment for a particular function.

Financial Authority

- 6 The Depot Protection Equipment List arrangements do not in any way change the existing procedures laid down for obtaining financial authority.

Ordering Procedures

- 7 The ordering procedures for the equipment shown in the Depot Protection Equipment List will be in accordance with the standard IMACS ordering procedures, that is by completion of Form BR 5906/41 ('IMACS Material Requirement Schedule') quoting the catalogue number as shown in Appendix 'A'. For non-catalogued items Form BR 5906/53 shall be completed.

Where the installation work is being undertaken by a Contractor, materials can either be supplied to the Contractor on a free issue basis or ordering details can be supplied to the Contractor.

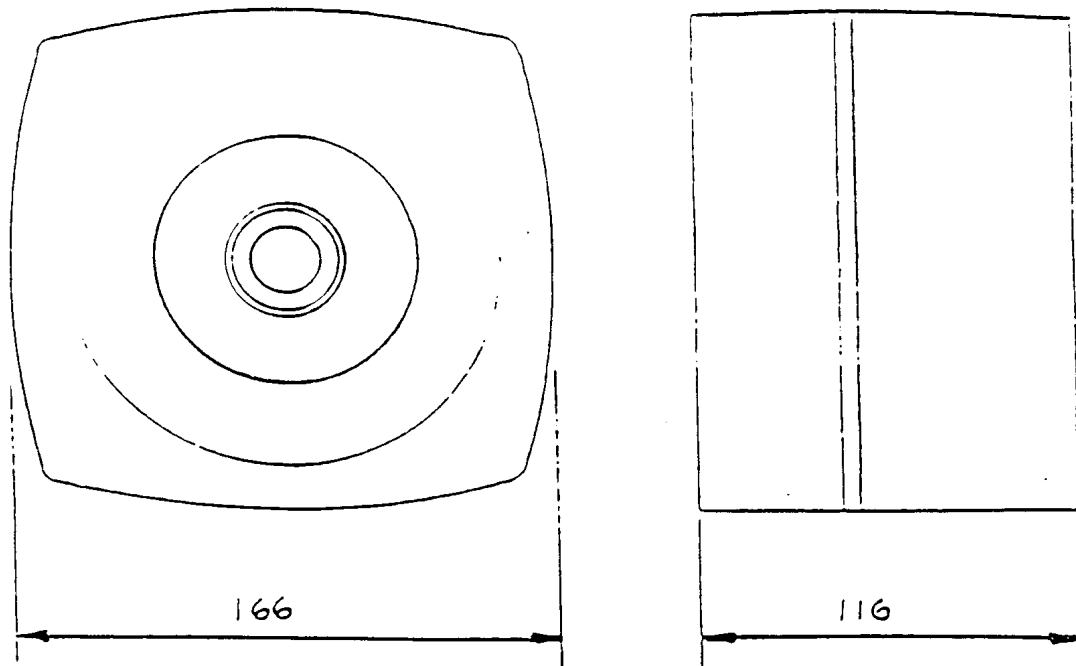
Consultations with Other Departments

- 8 Proposals should be submitted to other departments, ie S & T and Operations, for comment/information.

Section A Warning Lights and Sounders

KLAXON SYREX LC

ELECTRONIC SOUNDER



DESCRIPTION

High output low current consumption electronic three note sounder.

DETAILS

Weatherproof and high impact ABS case being highly resistant to corrosion.

Case: 166mm high x 166mm wide x 116mm deep.

TECHNICAL CHARACTERISTICS

Ref. No.	Voltage	Current	dB@1m
1682	110V ac	40mA	110
1683	240V ac	12mA	110

Audibility: 110 dB @ 1m.

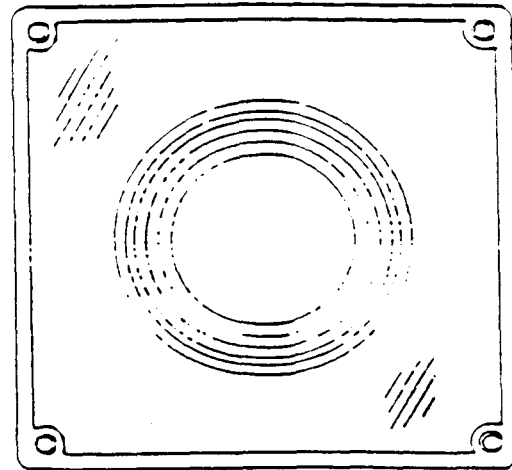
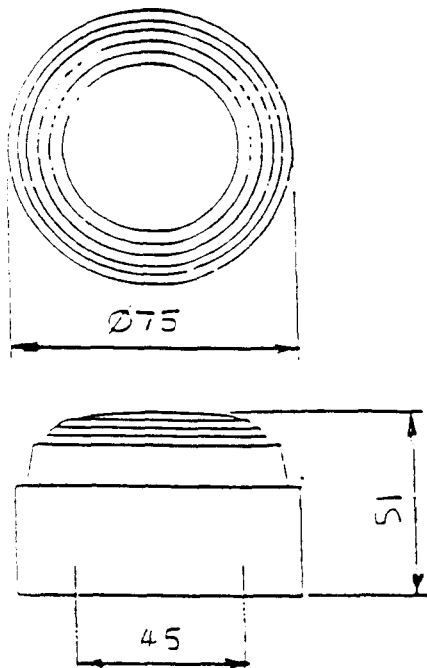
Frequency: Continuous 800 Hz; Warble 800/1000 Hz; Pip 800 Hz. Weight:- 0.8 kg.

Finish colour:-Red. Rating: - Continuous.

Weather protection to IP54, available to IP65. Local synchronising of several units possible.

FOR ORDERING DETAILS AND INFORMATION ON CURRENT SUPPLIER, PRICE AND DELIVERY SEE APPENDIX 'A'.

PIT WARNING LIGHT



LIGHT UNIT SHOWN IN PROTECTIVE
ENCLOSURE

DESCRIPTION

Low profile, low power flashing xenon beacon.

DETAILS

The beacon is a sealed unit consisting of a polycarbonate lens with black ABS base housing low power flashing beacon unit mounted via two 4mm screws into captive nuts in base. Unit can be housed in protective enclosure having transparent lid to give additional weather and physical protection.

TECHNICAL CHARACTERISTICS

Order Code	Voltage	Current	Colour
HEL 2-C-S-110	110V ac	18mA	Clear
HEL 2-C-S-240	240V ac	8.3mA	Clear

One flash per second. Minimum life 2×10^6 flashes.

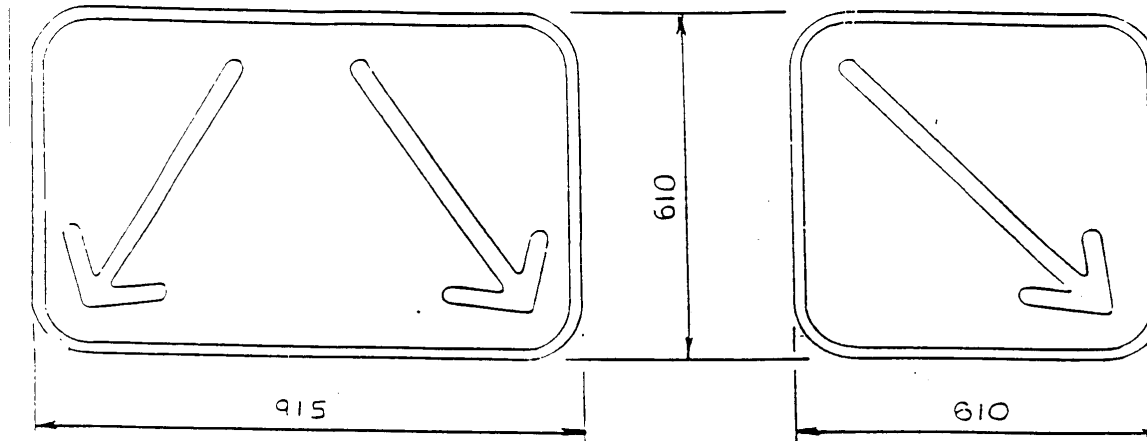
Operating temperature range: -20°C to 70°C .

Weatherproof protection to IP65.

Four alternative coloured lens: - Red, Amber, Blue, Green.

FOR ORDERING DETAILS AND INFORMATION ON CURRENT SUPPLIER, PRICE AND DELIVERY SEE APPENDIX 'A'.

DOUBLE SIDED BOX WARNING SIGNS
WITH SINGLE OR DOUBLE ARROWS



DESCRIPTION

Double sided box warning sign with flashing amber arrows on each face to indicate the roads in the shed where movement is taking, or is about to take place. Signs are suspended above walkways on both sides of each road and spaced 90m apart. Single arrow signs are used between shed wall and adjacent road. Double arrow signs are used between roads. All arrows indicating the same road are switched together.

DETAILS

Extruded aluminium box with acrylic panel faces; faces are silk screened and clear windows are provided in the shape of an arrow(s) so that the cold cathode tubes (a single length for each arrow and shaped as an arrow) is seen from the sign. The background screen colour is grey; arrow colour illuminated is amber, white when extinguished.

TECHNICAL CHARACTERISTICS

Operating transformer(s) and flasher control(s) housed within unit.

2 or 4 pole isolator as appropriate fitted externally.

Weights of units: Single arrow 7kg; Double arrow 14kg.

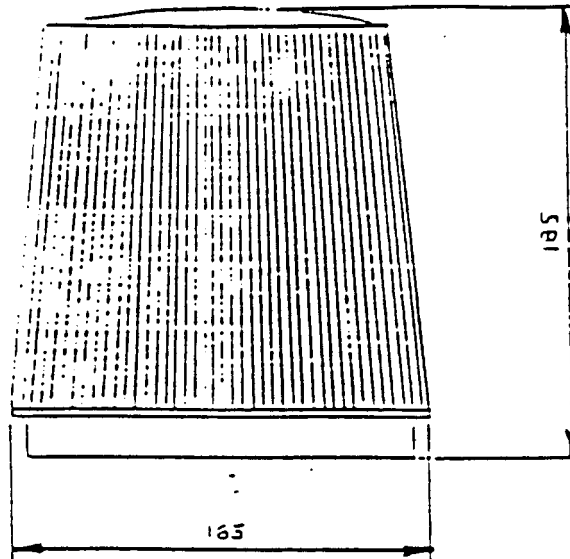
Units supplied with 22mm holes for suspension.

Electrical supply: 240V/1 ph/50HZ.

Current loading/unit/arrow: 0.5 Amps.

FOR ORDERING DETAILS AND INFORMATION ON CURRENT SUPPLIER, PRICE AND DELIVERY SEE APPENDIX 'A'.

FLASHING BEACON WARNING INDICATOR LIGHT



DESCRIPTION

Xenon flashing beacon suitable for use in depots to warn staff of impending movements. Beacon must be supported in upright position and are best suited to depots where a very penetrating light is required.

DETAILS

Polycarbonate dome with ABS base. Beacon: 185 high x 165 diameter.

TECHNICAL CHARACTERISTICS

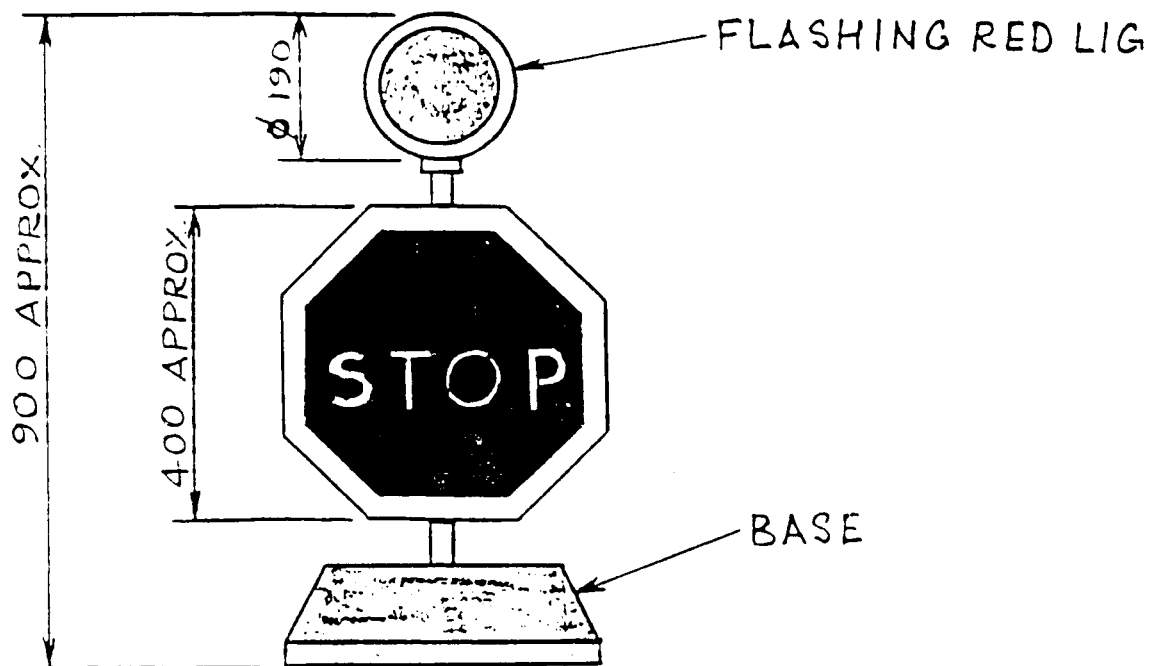
Xenon Beacon, Order Code	Voltage	Colour	Current
XFK-AC-SH-110-C	110V a. c.	Clear	0.64A
XFK-AC-SH-240-C	240V a. c.	Clear	0.23A

Light source: Gas-filled tube soldered to printed circuit board. Tube coupled with circuit board can be replaced as a unit

Four alternative colours available - Amber, Red, Blue, Green. Level of protection IP65 (when mounted in upright position).

FOR ORDERING DETAILS AND INFORMATION ON CURRENT SUPPLIER, PRICE AND DELIVERY SEE APPENDIX 'A'.

UNIVERSAL PORTABLE HAZARD BANNER



DESCRIPTION

Type UB/TR comprising a two way battery powered flashing red lamp, type IA, on top of a steel post. A red stop sign made from totally unbreakable glass fibre laminate is positioned on the post. A sturdy removable base is provided.

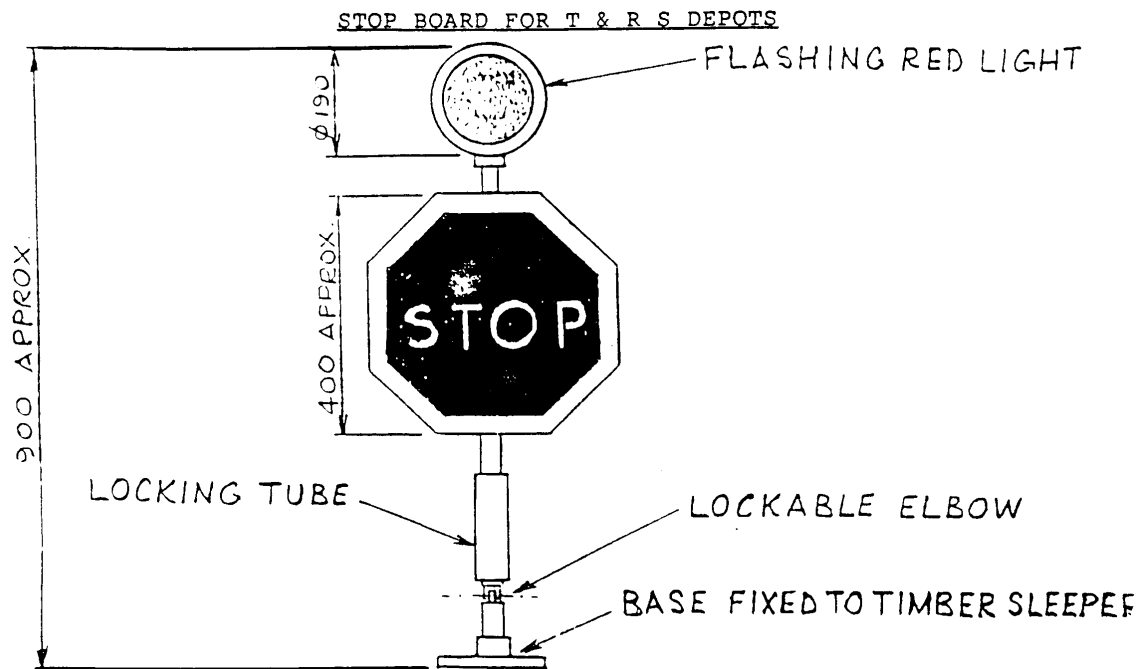
DETAIL

The flashing lamp only works when in an upright position and in failing light. These functions are controlled by a mercury tilt switch and a light dependant resistor. A battery voltage indicator charges the flashing light to the steady mode when low voltage occurs, indicating that a change of battery is necessary.

TECHNICAL CHARACTERISTICS

Light source:	2 x 1000 mcd high intensity red light emitting diodes.
Battery:	6 volt. Saft (U. K.) Ltd. Type HP4R25.
Battery life:	60 nights at 12 hours per night.
Flash frequency:	60-80 per minute.
Flash duration:	350 milliseconds.
Sign:	Made from white glass fibre laminate silk screen printed red.

FOR ORDERING DETAILS AND INFORMATION ON CURRENT SUPPLIER, PRICE AND DELIVERY, SEE APPENDIX 'A'.



DESCRIPTION

This is a modification of the Universal Portable Hazard Banner and designed for 'on-track' use. Comprises a one or two way facing red light on top of a lockable hinged post. The light can be obtained as a flashing or steady state. A red single-sided stop or stop and await instructions sign made from G. R. P. The flanged base has 4 drilled holes to accommodate the coach screws provided for attaching to timber sleepers.

DETAIL

The flashing lamp only works when the post is locked in an upright position and in failing light. These functions are controlled by a mercury tilt switch and a light dependant resistor. When battery replacement is necessary the lamp condition will change i.e.

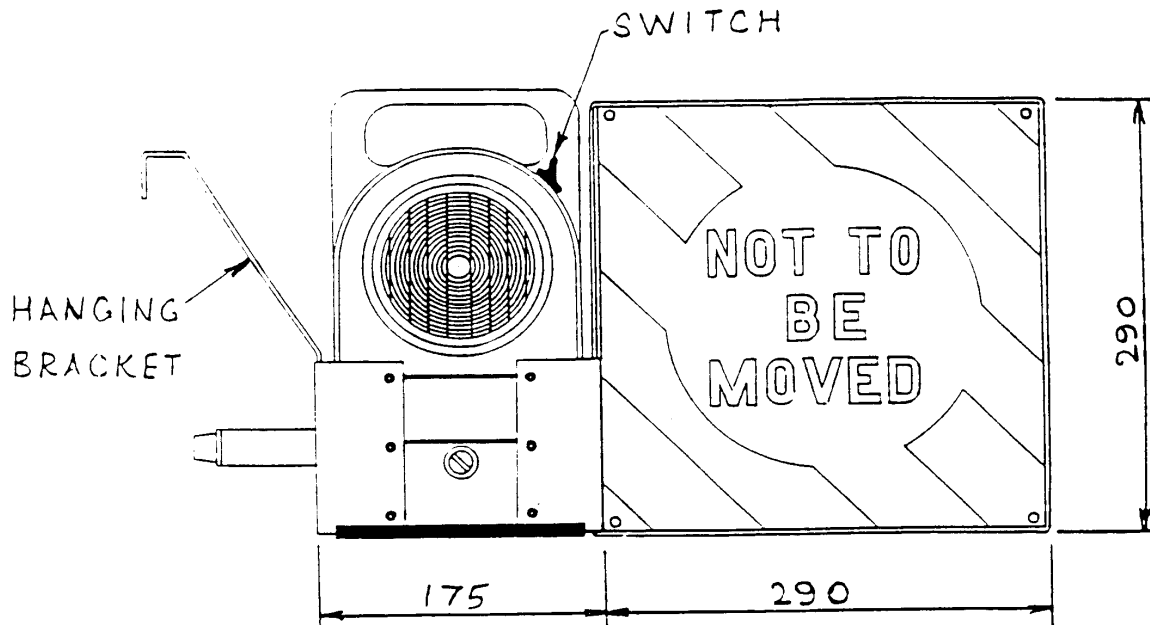
- A normal "flashing" lamp will change to steady state.
- A normal steady state lamp will start to flash.

TECHNICAL CHARACTERISTICS

Light source:	2 x 1000 mcd high intensity red light emitting diodes.
Battery:	6 volt. Saft (U. K.) Ltd. Type HP4R25.
Battery life:	60 nights at 12 hours per night.
Flash frequency:	60-80 per minute.
Flash duration:	350 milliseconds.
Sign:	Made from white glass fibre laminate silk screen printed red.

FOR ORDERING DETAILS AND INFORMATION ON CURRENT SUPPLIER, PRICE AND DELIVERY, SEE APPENDIX 'A'

M. C. E. / JOHNSTONE HANGING LAMP FOR T & R. S. MAINTENANCE
 SERIES 111 (MARCH 1990)



DESCRIPTION

For use on carriage rolling stock, etc this is a two way facing hanging lamp fitted complete with hanging bracket, rubber feet, an on/off switch and a double sided 'NOT TO BE MOVED' sign.

Two other models are available: Type WL (without lamp), Type WLM (without lamp, but with magnetic strip to hang on to ferrous metal flat sided rolling stock).

DETAILS

The body is made from yellow polypropylene and fitted with two red lenses. The sign is made from unbreakable G. P. R. laminate silk screen printed in red & white and fastened to the sign frame which, along with the hanging bracket and stabilizer, are made from steel, zinc plated, passivated and powder sprayed white. There is no light sensitive control, the on/off switch being of the external heavy duty toggle type with a water-proof cover.

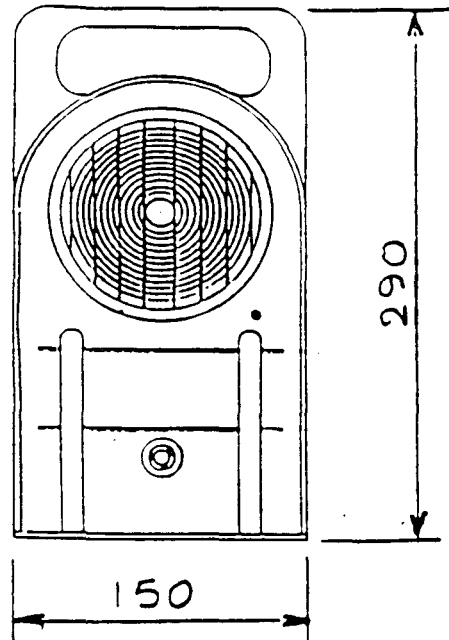
TECHNICAL CHARACTERISTICS

Light source:	2 x 1000 mcd red light emitting diodes.
Battery:	2 x type 4AS2.
Battery life:	1100 hours.
Flash frequency:	60 per minute.

FOR ORDERING DETAILS AND INFORMATION ON CURRENT SUPPLIER, PRICE AND DELIVERY, SEE APPENDIX 'A'.

Ref:	RT/E/C/27035
Issue:	I
Date:	December 2004

M. C. E. /JOHNSTONE BATTERY OPERATED STOP BLOCK LAMP
SERIES 2



DESCRIPTION

Consists of a yellow polypropylene case with a black fit-on base and red plastic lens. There is also a standard lamp bracket fixing.

DETAILS

A low voltage battery indicator lights up when the voltage falls to 3.6-3.8 volts.

Two methods of switching are employed. In the type A lamp, a master switch is used for when lamps are in storage. In service, switching is controlled by a light dependant resistor which switches on when the light fails, and vice versa. In type B there is a simple on/off switch and this type is used for covered environments.

Two types of fixing are available: Type I is a Standard lamp bracket fixing, and Type 4 is with a metal cradle to allow fixing to timber beams.

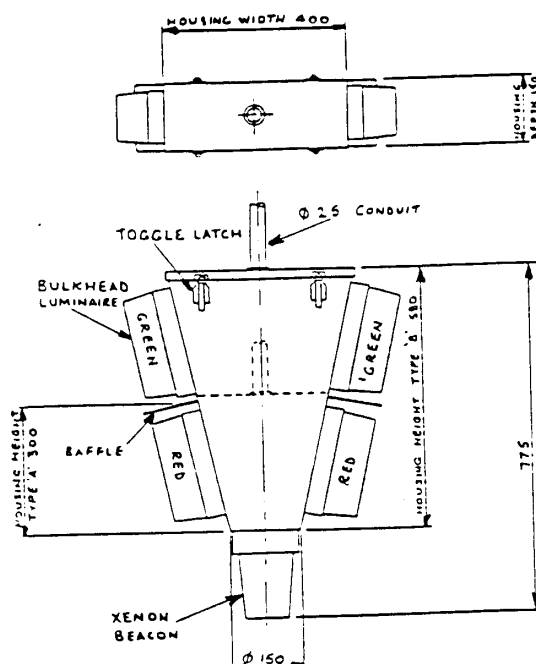
TECHNICAL CHARACTERISTICS

Light source: 2 x 900 mcd red leds.
 Battery: 2 x type 4AS2.
 Battery life: 1200 hours.
 Flash Frequency: 60-80 per minute.

FOR ORDERING DETAILS AND INFORMATION ON CURRENT SUPPLIER, PRICE AND DELIVERY, SEE APPENDIX 'A'.

Ref:	RT/E/C/27035
Issue:	I
Date:	December 2004

STATUS INDICATOR LIGHT UNIT



DESCRIPTION

Status indicator lights can be used to inform staff of safe and hazardous conditions including safe conditions in depots with overhead live wires. Indicators are suspended from conduit as shown in illustration.

DETAILS

Type 'A' consists of 2 Red Bulkheads and 1 Xenon Beacon.

Type 'B' consists of 2 Red Bulkheads, 2 Green Bulkheads and 1 Xenon Beacon.

Type 'C' consists of 2 Red Bulkheads only.

Note: Bulkheads operate in a steady mode only; and Xenon beacons operate in a flashing mode.

Further variations with a choice of bulkheads and xenon beacons as required can be discussed with the manufacturer.

TECHNICAL CHARACTERISTICS

Power requirements: 240 V a. c.

Wattage: Bulkhead luminaires: 27 watts per bulkhead
(each bulkhead contains 2 No. PL9 fluorescent with parallel circuit).

Xenon beacons: Up to 150 watts flash.

Loadings: 0. 17 amps per lamp on bulkhead. 0. 2 amps per xenon beacon.

Bulkhead luminaires have protection up to IP 55. Xenon beacons have protection up to IP 65.

FOR ORDERING DETAILS AND INFORMATION ON CURRENT SUPPLIER, PRICE AND DELIVERY SEE APPENDIX 'A'.