

# Combination Units and Status Lights

MEDC's range of combination units are designed for the purpose of alerting audio and visual awareness to an emergency situation in harsh environmental conditions found offshore and onshore in the oil, gas and petrochemical industries. As well as the products found in this section, combination units can be built to order from various MEDC sounders and beacons. Please contact MEDC for details.

MEDC also offer a range of Status Lights designed for potentially explosive atmospheres and harsh environmental conditions. Status lights are commonly found in oil, gas, petrochemical and other hazardous areas where multi-coloured lamp combinations are used to identify the safety status of specific zones. Customers can choose from a range of materials, including stainless steel and GRP and a selection of light sources including LED.



## Range Certifications

| PRODUCT                                      | ATEX | IECEX | UL | ULC | CSA | Inmetro | CUTR | CQST | ABS | SIL | IP Rating | Page |
|--|------|-------|----|-----|-----|---------|------|------|-----|-----|-----------|------|
| <b>Status Lights &amp; Combination Units</b> |      |       |    |     |     |         |      |      |     |     |           |      |
| CU1  | ■    | ■     |    |     |     | ■       | ■    |      | ■   |     | 66 / 67   | 110  |
| DB3/XB11                                     | ■    | ■     | ■  |     |     |         |      |      |     |     | 66 / 67   | 112  |
| DB1/SM87HXB                                  | ■    | ■     | ■  |     |     |         |      |      |     |     | 66        | 113  |
| DB3/SM87HXB                                  | ■    | ■     | ■  |     |     |         |      |      |     |     | 66 / 67   | 113  |
| DB12/XB13                                    |      |       |    |     |     |         |      |      |     |     | 66 / 67   | 113  |
| DB15/XB13                                    |      |       |    |     |     |         |      |      |     |     | 66 / 67   | 113  |
| SM87SL & XB11SL                              | ■    | ■     | ■  |     | ■   | ■       | ■    | ■    |     |     | 66 / 67   | 114  |
| SL5  | ■    | ■     |    |     |     |         |      | ■    |     |     | 66 / 67   | 116  |
| SL15   | ■    | ■     | ■  | ■   |     | ■       | ■    | ■    |     |     | 66 / 67   | 118  |



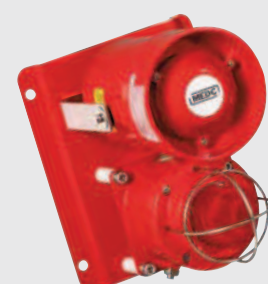
CU1



DB3/XB11



DB1/SM87HXB



DB3/SM87HXB



DB12/XB13



SM87SL & XB11SL



SL5



SL15

## Ex de, Weatherproof



## Introduction

This range of beacon/sounder units, intended for use in potentially explosive gas atmospheres, has a sound output of up to 116dB(A) and tube energy of up to 10 joules (beacon). It is suitable for use in the harsh environmental conditions found offshore and onshore in the oil, gas and petrochemical industries.

The flamepaths, flare and body are manufactured from a UV stable glass reinforced polyester. Stainless steel screws and mounting stirrup are incorporated to ensure a corrosion-free product. A tapered flamepath is used to overcome the problems of assembly of parallel spigot flamepaths.

## Features

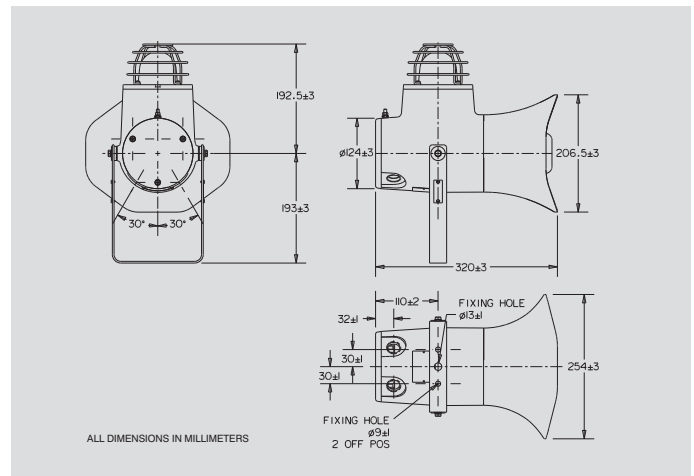
- Zone 1, Zone 2 & non-Ex use.
- Ex de IIB T3.
- ATEX approved, Ex II 2 G.
- IECEx approved, Gb.
- CUTR certified.
- BASEEFA certified.
- Brazilian (Inmetro) certified.
- IP66 and 67.
- Certified temperature: -50°C to +70°C\*.
- Up to 116 dB(A)\*.
- Version with independent beacon/sounder operation now available.
- 27 Tones, user selectable (dual tone option - d.c. voltage).
- Tones comply with UKOOA/PFEER guidelines.
- Integral volume control.
- GRP corrosion-free flamepath.
- Ratcheted swivel mounting stirrup.
- Stainless steel fixtures.
- Tapered flamepath.

*\*Model dependent.*



# Certification and Specification

|                                    |   |
|------------------------------------|---|
| <b>ATEX Ex de:</b>                 | Cert. no. Baseefa04ATEX0273X.<br>Certified to: EN60079-0, EN60079-1, EN60079-7.<br>Ex II 2G, Ex de IIB T3 Gb.   |
| <b>IECEX Ex de:</b>                | Cert. no. IECEX BAS 11.0149X.<br>Certified to: IEC60079-0, IEC60079-1, IEC60079-7.<br>Ex de IIB T3 Gb.  |
| <b>CUTR Ex de:</b>                 | 2Ex de IIB T3 Gb. Russian Fire Approved.  |
| <b>Inmetro Ex de:</b>              | Ex de IIB T3 Gb.  |
| <b>ABS:</b>                        | American Bureau of Shipping Type Approval for CU1S, CU1SW, CU1H & CU1HW only.   |
| <b>Material:</b>                   | Body, flares & covers: Glass Reinforced Polyester (GRP).<br>Lens: Glass.<br>Guard fitted as standard.<br>Cover screws & mounting strap: Stainless steel.  |
| <b>Finish:</b>                     | Natural black or painted to customer specification.   |
| <b>Certified Temp:</b>             | Standard unit: -50°C to +50°C (CU1-S & CU1-SP).<br>High temperature unit: -50°C to +70°C (CU1-H & CU1-HP).  |
| <b>Weight:</b>                     | 6.5kg approx.   |
| <b>Ingress Protection:</b>         | IP66 & IP67.  |
| <b>Entries:</b>                    | Up to 2 x M25, 2 x M25 ISO, 2 x M20 with 1/2" NPT adaptor or 2 x M25 with 3/4" NPT adaptors into termination (Exe) chamber.   |
| <b>Terminals:</b>                  | 8 x 4.0mm <sup>2</sup> .  |
| <b>Relay Initiate:</b>             | Available on all versions – operates with 24V d.c. initiate supplies only.  |
| <b>Mounting:</b>                   | Stainless steel bracket with ratchet facility.  |
| <b>Earth Continuity:</b>           | Available as an option.   |
| <b>Labels:</b>                     | Duty and tag label option to customer's requirements.   |
| <b>Tube Energy:</b>                | 5 or 10 Joules  |
| <b>Sound Output:</b>               | Sound Standard unit: 116dB(A) ± 3 dB(A) (tone dependent).<br>High temp. unit: 110 dB(A) ± 3 dB(A) (tone dependent).   |
| <b>Tone Selection:</b>             | 27 user selectable tones.   |
| <b>Two Stage Unit: (d.c. only)</b> | Switchable between any two tones by either:<br>(i) Reversing the polarity* of the supply, or<br>(ii) By a 3 wire common +ve system, switching between the two - ve lines.<br>If a two stage unit is ordered with either Independent Sounder/Beacon operation or Telephone or Relay Initiate, it will be wired for reverse polarity tone switching only, to allow loop in, loop out installation..<br>*Will not affect beacon operation. |



**Independent Beacon** DC: 3 wire common-ve as standard (4 wire available on request).  
**/Sounder Operation:** AC: 4 wire.

**Reverse Line Monitoring:** Available on request. Please contact MEDC Technical Sales for more details.

## Current Consumption at full power (60fpm):

| Input Voltage | CU1S 10J | CU1H 10J | CU1S 5J | CU1H 5J |
|---------------|----------|----------|---------|---------|
| 24Vd.c.       | 1680mA   | 960mA    | 1390mA  | 750mA   |
| 48Vd.c.       | 864mA    | -        | -       | -       |
| 110Va.c.      | 365mA    | 360mA    | -       | -       |
| 120Va.c.      | 417mA    | 370mA    | -       | -       |
| 230Va.c.      | 172mA    | 165mA    | -       | -       |
| 240Va.c.      | 182mA    | 165mA    | -       | -       |
| 254Va.c.      | 241mA    | 220mA    | -       | -       |

## Integral volume control (beacon set to 60fpm) (Not applicable to CU1H)

| * Nominal Output (dB(A)) | CU1S 10J | CU1S 5J |
|--------------------------|----------|---------|
| 105dB(A)                 | 850mA    | 650mA   |
| 108dB(A)                 | 1000mA   | 780mA   |
| 111dB(A)                 | 1150mA   | 940mA   |
| 114dB(A)                 | 1400mA   | 1190mA  |
| 116dB(A)                 | 1680mA   | 1390mA  |

\* Output measure with 24V input voltage. Tone set to 970Hz continuous.

High temperature CU1H is set to 107dB(A). For the 24Vd.c. version 960mA @ 10J & 750mA @ 5J.

# Ordering Requirements

The following code is designed to help in selection of the correct unit. Build up the reference number by inserting the code for each component into the appropriate box.

| Unit Type   | Certification | Voltage | Power         | Flashrate | Lens      | Labels | Options    | Entries | Finish        |      |           |        |   |               |      |      |   |       |   |      |    |         |    |              |   |  |         |      |         |     |         |     |           |     |           |     |           |     |           |     |           |     |  |       |      |         |    |          |   |   |           |      |          |    |          |    |           |    |  |      |      |     |   |      |   |       |   |       |   |        |   |       |   |  |        |      |      |   |            |    |           |    |   |         |      |               |    |                |    |             |    |           |   |             |   |              |    |          |    |      |   |  |         |      |         |    |         |    |         |    |         |    |              |    |              |    |              |    |              |    |   |        |      |               |   |     |   |         |    |
|---|---------------|---------|---------------|-----------|-----------|--------|------------|---------|---------------|------|-----------|--------|---|---------------|------|------|---|-------|---|------|----|---------|----|--------------|---|--|---------|------|---------|-----|---------|-----|-----------|-----|-----------|-----|-----------|-----|-----------|-----|-----------|-----|--|-------|------|---------|----|----------|---|---|-----------|------|----------|----|----------|----|-----------|----|--|------|------|-----|---|------|---|-------|---|-------|---|--------|---|-------|---|--|--------|------|------|---|------------|----|-----------|----|---|---------|------|---------------|----|----------------|----|-------------|----|-----------|---|-------------|---|--------------|----|----------|----|------|---|--|---------|------|---------|----|---------|----|---------|----|---------|----|--------------|----|--------------|----|--------------|----|--------------|----|---|--------|------|---------------|---|-----|---|---------|----|
| <table border="1"> <tr> <th>Type</th> <th>Code</th> </tr> <tr> <td>Standard unit</td> <td>CU1S</td> </tr> <tr> <td>Two stage</td> <td>CU1SP*</td> </tr> <tr> <td>High temp.</td> <td>CU1H</td> </tr> <tr> <td>Standard unit</td> <td>CU1S</td> </tr> <tr> <td>Two stage</td> <td>CU1HP*</td> </tr> </table> <p>*DC versions only.</p> | Type          | Code    | Standard unit | CU1S      | Two stage | CU1SP* | High temp. | CU1H    | Standard unit | CU1S | Two stage | CU1HP* | <table border="1"> <tr> <th>Certification</th> <th>Code</th> </tr> <tr> <td>ATEX</td> <td>B</td> </tr> <tr> <td>IECEX</td> <td>J</td> </tr> <tr> <td>CUTR</td> <td>G*</td> </tr> <tr> <td>Inmetro</td> <td>EM</td> </tr> <tr> <td>Weatherproof</td> <td>W</td> </tr> </table> <p>* Russian Fire Approval as standard.</p> | Certification | Code | ATEX | B | IECEX | J | CUTR | G* | Inmetro | EM | Weatherproof | W | <table border="1"> <tr> <th>Voltage</th> <th>Code</th> </tr> <tr> <td>24Vd.c.</td> <td>024</td> </tr> <tr> <td>48Vd.c.</td> <td>048</td> </tr> <tr> <td>110V a.c.</td> <td>110</td> </tr> <tr> <td>120V a.c.</td> <td>120</td> </tr> <tr> <td>230V a.c.</td> <td>230</td> </tr> <tr> <td>240V a.c.</td> <td>240</td> </tr> <tr> <td>254V a.c.</td> <td>254</td> </tr> </table> | Voltage | Code | 24Vd.c. | 024 | 48Vd.c. | 048 | 110V a.c. | 110 | 120V a.c. | 120 | 230V a.c. | 230 | 240V a.c. | 240 | 254V a.c. | 254 | <table border="1"> <tr> <th>Power</th> <th>Code</th> </tr> <tr> <td>5 Joule</td> <td>F*</td> </tr> <tr> <td>10 Joule</td> <td>T</td> </tr> </table> <p>* Available 24Vd.c. only.</p> | Power | Code | 5 Joule | F* | 10 Joule | T | <table border="1"> <tr> <th>Flashrate</th> <th>Code</th> </tr> <tr> <td>60 / min</td> <td>06</td> </tr> <tr> <td>80 / min</td> <td>08</td> </tr> <tr> <td>120 / min</td> <td>12</td> </tr> </table> <p>* Current consumption available for 80/min and 120/min on request.</p> | Flashrate | Code | 60 / min | 06 | 80 / min | 08 | 120 / min | 12 | <table border="1"> <tr> <th>Lens</th> <th>Code</th> </tr> <tr> <td>Red</td> <td>R</td> </tr> <tr> <td>Blue</td> <td>B</td> </tr> <tr> <td>Green</td> <td>G</td> </tr> <tr> <td>Amber</td> <td>A</td> </tr> <tr> <td>Yellow</td> <td>Y</td> </tr> <tr> <td>Clear</td> <td>C</td> </tr> </table> | Lens | Code | Red | R | Blue | B | Green | G | Amber | A | Yellow | Y | Clear | C | <table border="1"> <tr> <th>Labels</th> <th>Code</th> </tr> <tr> <td>None</td> <td>N</td> </tr> <tr> <td>Duty Label</td> <td>D*</td> </tr> <tr> <td>Tag label</td> <td>T*</td> </tr> </table> <p>* Please specify.</p> | Labels | Code | None | N | Duty Label | D* | Tag label | T* | <table border="1"> <tr> <th>Options</th> <th>Code</th> </tr> <tr> <td>Tel. Initiate</td> <td>T†</td> </tr> <tr> <td>Relay Initiate</td> <td>R†</td> </tr> <tr> <td>Independent</td> <td>I†</td> </tr> <tr> <td>Operation</td> <td>O</td> </tr> <tr> <td>Earth cont.</td> <td>C</td> </tr> <tr> <td>Special Tone</td> <td>S*</td> </tr> <tr> <td>EOL Res.</td> <td>E*</td> </tr> <tr> <td>None</td> <td>N</td> </tr> </table> <p>* Please specify.<br/>† T, R or I not available on same unit.</p> | Options | Code | Tel. Initiate | T† | Relay Initiate | R† | Independent | I† | Operation | O | Earth cont. | C | Special Tone | S* | EOL Res. | E* | None | N | <table border="1"> <tr> <th>Entries</th> <th>Code</th> </tr> <tr> <td>1 x M20</td> <td>1B</td> </tr> <tr> <td>2 x M20</td> <td>2B</td> </tr> <tr> <td>1 x M25</td> <td>1C</td> </tr> <tr> <td>2 x M25</td> <td>2C</td> </tr> <tr> <td>1 x 1/2" NPT</td> <td>1M</td> </tr> <tr> <td>2 x 1/2" NPT</td> <td>2M</td> </tr> <tr> <td>1 x 3/4" NPT</td> <td>1N</td> </tr> <tr> <td>2 x 3/4" NPT</td> <td>2N</td> </tr> </table> <p>To specify certified plug, suffix appropriate code with 'P', e.g. 2BP is 2 x M20 entries with one certified plug.</p> | Entries | Code | 1 x M20 | 1B | 2 x M20 | 2B | 1 x M25 | 1C | 2 x M25 | 2C | 1 x 1/2" NPT | 1M | 2 x 1/2" NPT | 2M | 1 x 3/4" NPT | 1N | 2 x 3/4" NPT | 2N | <table border="1"> <tr> <th>Finish</th> <th>Code</th> </tr> <tr> <td>Natural Black</td> <td>N</td> </tr> <tr> <td>Red</td> <td>R</td> </tr> <tr> <td>Special</td> <td>S*</td> </tr> </table> <p>* Please specify.</p> | Finish | Code | Natural Black | N | Red | R | Special | S* |
| Type  | Code          |         |               |           |           |        |            |         |               |      |           |        |   |               |      |      |   |       |   |      |    |         |    |              |   |  |         |      |         |     |         |     |           |     |           |     |           |     |           |     |           |     |  |       |      |         |    |          |   |   |           |      |          |    |          |    |           |    |  |      |      |     |   |      |   |       |   |       |   |        |   |       |   |  |        |      |      |   |            |    |           |    |   |         |      |               |    |                |    |             |    |           |   |             |   |              |    |          |    |      |   |  |         |      |         |    |         |    |         |    |         |    |              |    |              |    |              |    |              |    |   |        |      |               |   |     |   |         |    |
| Standard unit   | CU1S          |         |               |           |           |        |            |         |               |      |           |        |   |               |      |      |   |       |   |      |    |         |    |              |   |  |         |      |         |     |         |     |           |     |           |     |           |     |           |     |           |     |  |       |      |         |    |          |   |   |           |      |          |    |          |    |           |    |  |      |      |     |   |      |   |       |   |       |   |        |   |       |   |  |        |      |      |   |            |    |           |    |   |         |      |               |    |                |    |             |    |           |   |             |   |              |    |          |    |      |   |  |         |      |         |    |         |    |         |    |         |    |              |    |              |    |              |    |              |    |   |        |      |               |   |     |   |         |    |
| Two stage   | CU1SP*        |         |               |           |           |        |            |         |               |      |           |        |   |               |      |      |   |       |   |      |    |         |    |              |   |  |         |      |         |     |         |     |           |     |           |     |           |     |           |     |           |     |  |       |      |         |    |          |   |   |           |      |          |    |          |    |           |    |  |      |      |     |   |      |   |       |   |       |   |        |   |       |   |  |        |      |      |   |            |    |           |    |   |         |      |               |    |                |    |             |    |           |   |             |   |              |    |          |    |      |   |  |         |      |         |    |         |    |         |    |         |    |              |    |              |    |              |    |              |    |   |        |      |               |   |     |   |         |    |
| High temp.  | CU1H          |         |               |           |           |        |            |         |               |      |           |        |   |               |      |      |   |       |   |      |    |         |    |              |   |  |         |      |         |     |         |     |           |     |           |     |           |     |           |     |           |     |  |       |      |         |    |          |   |   |           |      |          |    |          |    |           |    |  |      |      |     |   |      |   |       |   |       |   |        |   |       |   |  |        |      |      |   |            |    |           |    |   |         |      |               |    |                |    |             |    |           |   |             |   |              |    |          |    |      |   |  |         |      |         |    |         |    |         |    |         |    |              |    |              |    |              |    |              |    |   |        |      |               |   |     |   |         |    |
| Standard unit   | CU1S          |         |               |           |           |        |            |         |               |      |           |        |   |               |      |      |   |       |   |      |    |         |    |              |   |  |         |      |         |     |         |     |           |     |           |     |           |     |           |     |           |     |  |       |      |         |    |          |   |   |           |      |          |    |          |    |           |    |  |      |      |     |   |      |   |       |   |       |   |        |   |       |   |  |        |      |      |   |            |    |           |    |   |         |      |               |    |                |    |             |    |           |   |             |   |              |    |          |    |      |   |  |         |      |         |    |         |    |         |    |         |    |              |    |              |    |              |    |              |    |   |        |      |               |   |     |   |         |    |
| Two stage   | CU1HP*        |         |               |           |           |        |            |         |               |      |           |        |   |               |      |      |   |       |   |      |    |         |    |              |   |  |         |      |         |     |         |     |           |     |           |     |           |     |           |     |           |     |  |       |      |         |    |          |   |   |           |      |          |    |          |    |           |    |  |      |      |     |   |      |   |       |   |       |   |        |   |       |   |  |        |      |      |   |            |    |           |    |   |         |      |               |    |                |    |             |    |           |   |             |   |              |    |          |    |      |   |  |         |      |         |    |         |    |         |    |         |    |              |    |              |    |              |    |              |    |   |        |      |               |   |     |   |         |    |
| Certification   | Code          |         |               |           |           |        |            |         |               |      |           |        |   |               |      |      |   |       |   |      |    |         |    |              |   |  |         |      |         |     |         |     |           |     |           |     |           |     |           |     |           |     |  |       |      |         |    |          |   |   |           |      |          |    |          |    |           |    |  |      |      |     |   |      |   |       |   |       |   |        |   |       |   |  |        |      |      |   |            |    |           |    |   |         |      |               |    |                |    |             |    |           |   |             |   |              |    |          |    |      |   |  |         |      |         |    |         |    |         |    |         |    |              |    |              |    |              |    |              |    |   |        |      |               |   |     |   |         |    |
| ATEX  | B             |         |               |           |           |        |            |         |               |      |           |        |   |               |      |      |   |       |   |      |    |         |    |              |   |  |         |      |         |     |         |     |           |     |           |     |           |     |           |     |           |     |  |       |      |         |    |          |   |   |           |      |          |    |          |    |           |    |  |      |      |     |   |      |   |       |   |       |   |        |   |       |   |  |        |      |      |   |            |    |           |    |   |         |      |               |    |                |    |             |    |           |   |             |   |              |    |          |    |      |   |  |         |      |         |    |         |    |         |    |         |    |              |    |              |    |              |    |              |    |   |        |      |               |   |     |   |         |    |
| IECEX   | J             |         |               |           |           |        |            |         |               |      |           |        |   |               |      |      |   |       |   |      |    |         |    |              |   |  |         |      |         |     |         |     |           |     |           |     |           |     |           |     |           |     |  |       |      |         |    |          |   |   |           |      |          |    |          |    |           |    |  |      |      |     |   |      |   |       |   |       |   |        |   |       |   |  |        |      |      |   |            |    |           |    |   |         |      |               |    |                |    |             |    |           |   |             |   |              |    |          |    |      |   |  |         |      |         |    |         |    |         |    |         |    |              |    |              |    |              |    |              |    |   |        |      |               |   |     |   |         |    |
| CUTR  | G*            |         |               |           |           |        |            |         |               |      |           |        |   |               |      |      |   |       |   |      |    |         |    |              |   |  |         |      |         |     |         |     |           |     |           |     |           |     |           |     |           |     |  |       |      |         |    |          |   |   |           |      |          |    |          |    |           |    |  |      |      |     |   |      |   |       |   |       |   |        |   |       |   |  |        |      |      |   |            |    |           |    |   |         |      |               |    |                |    |             |    |           |   |             |   |              |    |          |    |      |   |  |         |      |         |    |         |    |         |    |         |    |              |    |              |    |              |    |              |    |   |        |      |               |   |     |   |         |    |
| Inmetro   | EM            |         |               |           |           |        |            |         |               |      |           |        |   |               |      |      |   |       |   |      |    |         |    |              |   |  |         |      |         |     |         |     |           |     |           |     |           |     |           |     |           |     |  |       |      |         |    |          |   |   |           |      |          |    |          |    |           |    |  |      |      |     |   |      |   |       |   |       |   |        |   |       |   |  |        |      |      |   |            |    |           |    |   |         |      |               |    |                |    |             |    |           |   |             |   |              |    |          |    |      |   |  |         |      |         |    |         |    |         |    |         |    |              |    |              |    |              |    |              |    |   |        |      |               |   |     |   |         |    |
| Weatherproof  | W             |         |               |           |           |        |            |         |               |      |           |        |   |               |      |      |   |       |   |      |    |         |    |              |   |  |         |      |         |     |         |     |           |     |           |     |           |     |           |     |           |     |  |       |      |         |    |          |   |   |           |      |          |    |          |    |           |    |  |      |      |     |   |      |   |       |   |       |   |        |   |       |   |  |        |      |      |   |            |    |           |    |   |         |      |               |    |                |    |             |    |           |   |             |   |              |    |          |    |      |   |  |         |      |         |    |         |    |         |    |         |    |              |    |              |    |              |    |              |    |   |        |      |               |   |     |   |         |    |
| Voltage   | Code          |         |               |           |           |        |            |         |               |      |           |        |   |               |      |      |   |       |   |      |    |         |    |              |   |  |         |      |         |     |         |     |           |     |           |     |           |     |           |     |           |     |  |       |      |         |    |          |   |   |           |      |          |    |          |    |           |    |  |      |      |     |   |      |   |       |   |       |   |        |   |       |   |  |        |      |      |   |            |    |           |    |   |         |      |               |    |                |    |             |    |           |   |             |   |              |    |          |    |      |   |  |         |      |         |    |         |    |         |    |         |    |              |    |              |    |              |    |              |    |   |        |      |               |   |     |   |         |    |
| 24Vd.c.   | 024           |         |               |           |           |        |            |         |               |      |           |        |   |               |      |      |   |       |   |      |    |         |    |              |   |  |         |      |         |     |         |     |           |     |           |     |           |     |           |     |           |     |  |       |      |         |    |          |   |   |           |      |          |    |          |    |           |    |  |      |      |     |   |      |   |       |   |       |   |        |   |       |   |  |        |      |      |   |            |    |           |    |   |         |      |               |    |                |    |             |    |           |   |             |   |              |    |          |    |      |   |  |         |      |         |    |         |    |         |    |         |    |              |    |              |    |              |    |              |    |   |        |      |               |   |     |   |         |    |
| 48Vd.c.   | 048           |         |               |           |           |        |            |         |               |      |           |        |   |               |      |      |   |       |   |      |    |         |    |              |   |  |         |      |         |     |         |     |           |     |           |     |           |     |           |     |           |     |  |       |      |         |    |          |   |   |           |      |          |    |          |    |           |    |  |      |      |     |   |      |   |       |   |       |   |        |   |       |   |  |        |      |      |   |            |    |           |    |   |         |      |               |    |                |    |             |    |           |   |             |   |              |    |          |    |      |   |  |         |      |         |    |         |    |         |    |         |    |              |    |              |    |              |    |              |    |   |        |      |               |   |     |   |         |    |
| 110V a.c.   | 110           |         |               |           |           |        |            |         |               |      |           |        |   |               |      |      |   |       |   |      |    |         |    |              |   |  |         |      |         |     |         |     |           |     |           |     |           |     |           |     |           |     |  |       |      |         |    |          |   |   |           |      |          |    |          |    |           |    |  |      |      |     |   |      |   |       |   |       |   |        |   |       |   |  |        |      |      |   |            |    |           |    |   |         |      |               |    |                |    |             |    |           |   |             |   |              |    |          |    |      |   |  |         |      |         |    |         |    |         |    |         |    |              |    |              |    |              |    |              |    |   |        |      |               |   |     |   |         |    |
| 120V a.c.   | 120           |         |               |           |           |        |            |         |               |      |           |        |   |               |      |      |   |       |   |      |    |         |    |              |   |  |         |      |         |     |         |     |           |     |           |     |           |     |           |     |           |     |  |       |      |         |    |          |   |   |           |      |          |    |          |    |           |    |  |      |      |     |   |      |   |       |   |       |   |        |   |       |   |  |        |      |      |   |            |    |           |    |   |         |      |               |    |                |    |             |    |           |   |             |   |              |    |          |    |      |   |  |         |      |         |    |         |    |         |    |         |    |              |    |              |    |              |    |              |    |   |        |      |               |   |     |   |         |    |
| 230V a.c.   | 230           |         |               |           |           |        |            |         |               |      |           |        |   |               |      |      |   |       |   |      |    |         |    |              |   |  |         |      |         |     |         |     |           |     |           |     |           |     |           |     |           |     |  |       |      |         |    |          |   |   |           |      |          |    |          |    |           |    |  |      |      |     |   |      |   |       |   |       |   |        |   |       |   |  |        |      |      |   |            |    |           |    |   |         |      |               |    |                |    |             |    |           |   |             |   |              |    |          |    |      |   |  |         |      |         |    |         |    |         |    |         |    |              |    |              |    |              |    |              |    |   |        |      |               |   |     |   |         |    |
| 240V a.c.   | 240           |         |               |           |           |        |            |         |               |      |           |        |   |               |      |      |   |       |   |      |    |         |    |              |   |  |         |      |         |     |         |     |           |     |           |     |           |     |           |     |           |     |  |       |      |         |    |          |   |   |           |      |          |    |          |    |           |    |  |      |      |     |   |      |   |       |   |       |   |        |   |       |   |  |        |      |      |   |            |    |           |    |   |         |      |               |    |                |    |             |    |           |   |             |   |              |    |          |    |      |   |  |         |      |         |    |         |    |         |    |         |    |              |    |              |    |              |    |              |    |   |        |      |               |   |     |   |         |    |
| 254V a.c.   | 254           |         |               |           |           |        |            |         |               |      |           |        |   |               |      |      |   |       |   |      |    |         |    |              |   |  |         |      |         |     |         |     |           |     |           |     |           |     |           |     |           |     |  |       |      |         |    |          |   |   |           |      |          |    |          |    |           |    |  |      |      |     |   |      |   |       |   |       |   |        |   |       |   |  |        |      |      |   |            |    |           |    |   |         |      |               |    |                |    |             |    |           |   |             |   |              |    |          |    |      |   |  |         |      |         |    |         |    |         |    |         |    |              |    |              |    |              |    |              |    |   |        |      |               |   |     |   |         |    |
| Power   | Code          |         |               |           |           |        |            |         |               |      |           |        |   |               |      |      |   |       |   |      |    |         |    |              |   |  |         |      |         |     |         |     |           |     |           |     |           |     |           |     |           |     |  |       |      |         |    |          |   |   |           |      |          |    |          |    |           |    |  |      |      |     |   |      |   |       |   |       |   |        |   |       |   |  |        |      |      |   |            |    |           |    |   |         |      |               |    |                |    |             |    |           |   |             |   |              |    |          |    |      |   |  |         |      |         |    |         |    |         |    |         |    |              |    |              |    |              |    |              |    |   |        |      |               |   |     |   |         |    |
| 5 Joule   | F*            |         |               |           |           |        |            |         |               |      |           |        |   |               |      |      |   |       |   |      |    |         |    |              |   |  |         |      |         |     |         |     |           |     |           |     |           |     |           |     |           |     |  |       |      |         |    |          |   |   |           |      |          |    |          |    |           |    |  |      |      |     |   |      |   |       |   |       |   |        |   |       |   |  |        |      |      |   |            |    |           |    |   |         |      |               |    |                |    |             |    |           |   |             |   |              |    |          |    |      |   |  |         |      |         |    |         |    |         |    |         |    |              |    |              |    |              |    |              |    |   |        |      |               |   |     |   |         |    |
| 10 Joule  | T             |         |               |           |           |        |            |         |               |      |           |        |   |               |      |      |   |       |   |      |    |         |    |              |   |  |         |      |         |     |         |     |           |     |           |     |           |     |           |     |           |     |  |       |      |         |    |          |   |   |           |      |          |    |          |    |           |    |  |      |      |     |   |      |   |       |   |       |   |        |   |       |   |  |        |      |      |   |            |    |           |    |   |         |      |               |    |                |    |             |    |           |   |             |   |              |    |          |    |      |   |  |         |      |         |    |         |    |         |    |         |    |              |    |              |    |              |    |              |    |   |        |      |               |   |     |   |         |    |
| Flashrate   | Code          |         |               |           |           |        |            |         |               |      |           |        |   |               |      |      |   |       |   |      |    |         |    |              |   |  |         |      |         |     |         |     |           |     |           |     |           |     |           |     |           |     |  |       |      |         |    |          |   |   |           |      |          |    |          |    |           |    |  |      |      |     |   |      |   |       |   |       |   |        |   |       |   |  |        |      |      |   |            |    |           |    |   |         |      |               |    |                |    |             |    |           |   |             |   |              |    |          |    |      |   |  |         |      |         |    |         |    |         |    |         |    |              |    |              |    |              |    |              |    |   |        |      |               |   |     |   |         |    |
| 60 / min  | 06            |         |               |           |           |        |            |         |               |      |           |        |   |               |      |      |   |       |   |      |    |         |    |              |   |  |         |      |         |     |         |     |           |     |           |     |           |     |           |     |           |     |  |       |      |         |    |          |   |   |           |      |          |    |          |    |           |    |  |      |      |     |   |      |   |       |   |       |   |        |   |       |   |  |        |      |      |   |            |    |           |    |   |         |      |               |    |                |    |             |    |           |   |             |   |              |    |          |    |      |   |  |         |      |         |    |         |    |         |    |         |    |              |    |              |    |              |    |              |    |   |        |      |               |   |     |   |         |    |
| 80 / min  | 08            |         |               |           |           |        |            |         |               |      |           |        |   |               |      |      |   |       |   |      |    |         |    |              |   |  |         |      |         |     |         |     |           |     |           |     |           |     |           |     |           |     |  |       |      |         |    |          |   |   |           |      |          |    |          |    |           |    |  |      |      |     |   |      |   |       |   |       |   |        |   |       |   |  |        |      |      |   |            |    |           |    |   |         |      |               |    |                |    |             |    |           |   |             |   |              |    |          |    |      |   |  |         |      |         |    |         |    |         |    |         |    |              |    |              |    |              |    |              |    |   |        |      |               |   |     |   |         |    |
| 120 / min   | 12            |         |               |           |           |        |            |         |               |      |           |        |   |               |      |      |   |       |   |      |    |         |    |              |   |  |         |      |         |     |         |     |           |     |           |     |           |     |           |     |           |     |  |       |      |         |    |          |   |   |           |      |          |    |          |    |           |    |  |      |      |     |   |      |   |       |   |       |   |        |   |       |   |  |        |      |      |   |            |    |           |    |   |         |      |               |    |                |    |             |    |           |   |             |   |              |    |          |    |      |   |  |         |      |         |    |         |    |         |    |         |    |              |    |              |    |              |    |              |    |   |        |      |               |   |     |   |         |    |
| Lens  | Code          |         |               |           |           |        |            |         |               |      |           |        |   |               |      |      |   |       |   |      |    |         |    |              |   |  |         |      |         |     |         |     |           |     |           |     |           |     |           |     |           |     |  |       |      |         |    |          |   |   |           |      |          |    |          |    |           |    |  |      |      |     |   |      |   |       |   |       |   |        |   |       |   |  |        |      |      |   |            |    |           |    |   |         |      |               |    |                |    |             |    |           |   |             |   |              |    |          |    |      |   |  |         |      |         |    |         |    |         |    |         |    |              |    |              |    |              |    |              |    |   |        |      |               |   |     |   |         |    |
| Red   | R             |         |               |           |           |        |            |         |               |      |           |        |   |               |      |      |   |       |   |      |    |         |    |              |   |  |         |      |         |     |         |     |           |     |           |     |           |     |           |     |           |     |  |       |      |         |    |          |   |   |           |      |          |    |          |    |           |    |  |      |      |     |   |      |   |       |   |       |   |        |   |       |   |  |        |      |      |   |            |    |           |    |   |         |      |               |    |                |    |             |    |           |   |             |   |              |    |          |    |      |   |  |         |      |         |    |         |    |         |    |         |    |              |    |              |    |              |    |              |    |   |        |      |               |   |     |   |         |    |
| Blue  | B             |         |               |           |           |        |            |         |               |      |           |        |   |               |      |      |   |       |   |      |    |         |    |              |   |  |         |      |         |     |         |     |           |     |           |     |           |     |           |     |           |     |  |       |      |         |    |          |   |   |           |      |          |    |          |    |           |    |  |      |      |     |   |      |   |       |   |       |   |        |   |       |   |  |        |      |      |   |            |    |           |    |   |         |      |               |    |                |    |             |    |           |   |             |   |              |    |          |    |      |   |  |         |      |         |    |         |    |         |    |         |    |              |    |              |    |              |    |              |    |   |        |      |               |   |     |   |         |    |
| Green   | G             |         |               |           |           |        |            |         |               |      |           |        |   |               |      |      |   |       |   |      |    |         |    |              |   |  |         |      |         |     |         |     |           |     |           |     |           |     |           |     |           |     |  |       |      |         |    |          |   |   |           |      |          |    |          |    |           |    |  |      |      |     |   |      |   |       |   |       |   |        |   |       |   |  |        |      |      |   |            |    |           |    |   |         |      |               |    |                |    |             |    |           |   |             |   |              |    |          |    |      |   |  |         |      |         |    |         |    |         |    |         |    |              |    |              |    |              |    |              |    |   |        |      |               |   |     |   |         |    |
| Amber   | A             |         |               |           |           |        |            |         |               |      |           |        |   |               |      |      |   |       |   |      |    |         |    |              |   |  |         |      |         |     |         |     |           |     |           |     |           |     |           |     |           |     |  |       |      |         |    |          |   |   |           |      |          |    |          |    |           |    |  |      |      |     |   |      |   |       |   |       |   |        |   |       |   |  |        |      |      |   |            |    |           |    |   |         |      |               |    |                |    |             |    |           |   |             |   |              |    |          |    |      |   |  |         |      |         |    |         |    |         |    |         |    |              |    |              |    |              |    |              |    |   |        |      |               |   |     |   |         |    |
| Yellow  | Y             |         |               |           |           |        |            |         |               |      |           |        |   |               |      |      |   |       |   |      |    |         |    |              |   |  |         |      |         |     |         |     |           |     |           |     |           |     |           |     |           |     |  |       |      |         |    |          |   |   |           |      |          |    |          |    |           |    |  |      |      |     |   |      |   |       |   |       |   |        |   |       |   |  |        |      |      |   |            |    |           |    |   |         |      |               |    |                |    |             |    |           |   |             |   |              |    |          |    |      |   |  |         |      |         |    |         |    |         |    |         |    |              |    |              |    |              |    |              |    |   |        |      |               |   |     |   |         |    |
| Clear   | C             |         |               |           |           |        |            |         |               |      |           |        |   |               |      |      |   |       |   |      |    |         |    |              |   |  |         |      |         |     |         |     |           |     |           |     |           |     |           |     |           |     |  |       |      |         |    |          |   |   |           |      |          |    |          |    |           |    |  |      |      |     |   |      |   |       |   |       |   |        |   |       |   |  |        |      |      |   |            |    |           |    |   |         |      |               |    |                |    |             |    |           |   |             |   |              |    |          |    |      |   |  |         |      |         |    |         |    |         |    |         |    |              |    |              |    |              |    |              |    |   |        |      |               |   |     |   |         |    |
| Labels  | Code          |         |               |           |           |        |            |         |               |      |           |        |   |               |      |      |   |       |   |      |    |         |    |              |   |  |         |      |         |     |         |     |           |     |           |     |           |     |           |     |           |     |  |       |      |         |    |          |   |   |           |      |          |    |          |    |           |    |  |      |      |     |   |      |   |       |   |       |   |        |   |       |   |  |        |      |      |   |            |    |           |    |   |         |      |               |    |                |    |             |    |           |   |             |   |              |    |          |    |      |   |  |         |      |         |    |         |    |         |    |         |    |              |    |              |    |              |    |              |    |   |        |      |               |   |     |   |         |    |
| None  | N             |         |               |           |           |        |            |         |               |      |           |        |   |               |      |      |   |       |   |      |    |         |    |              |   |  |         |      |         |     |         |     |           |     |           |     |           |     |           |     |           |     |  |       |      |         |    |          |   |   |           |      |          |    |          |    |           |    |  |      |      |     |   |      |   |       |   |       |   |        |   |       |   |  |        |      |      |   |            |    |           |    |   |         |      |               |    |                |    |             |    |           |   |             |   |              |    |          |    |      |   |  |         |      |         |    |         |    |         |    |         |    |              |    |              |    |              |    |              |    |   |        |      |               |   |     |   |         |    |
| Duty Label  | D*            |         |               |           |           |        |            |         |               |      |           |        |   |               |      |      |   |       |   |      |    |         |    |              |   |  |         |      |         |     |         |     |           |     |           |     |           |     |           |     |           |     |  |       |      |         |    |          |   |   |           |      |          |    |          |    |           |    |  |      |      |     |   |      |   |       |   |       |   |        |   |       |   |  |        |      |      |   |            |    |           |    |   |         |      |               |    |                |    |             |    |           |   |             |   |              |    |          |    |      |   |  |         |      |         |    |         |    |         |    |         |    |              |    |              |    |              |    |              |    |   |        |      |               |   |     |   |         |    |
| Tag label   | T*            |         |               |           |           |        |            |         |               |      |           |        |   |               |      |      |   |       |   |      |    |         |    |              |   |  |         |      |         |     |         |     |           |     |           |     |           |     |           |     |           |     |  |       |      |         |    |          |   |   |           |      |          |    |          |    |           |    |  |      |      |     |   |      |   |       |   |       |   |        |   |       |   |  |        |      |      |   |            |    |           |    |   |         |      |               |    |                |    |             |    |           |   |             |   |              |    |          |    |      |   |  |         |      |         |    |         |    |         |    |         |    |              |    |              |    |              |    |              |    |   |        |      |               |   |     |   |         |    |
| Options   | Code          |         |               |           |           |        |            |         |               |      |           |        |   |               |      |      |   |       |   |      |    |         |    |              |   |  |         |      |         |     |         |     |           |     |           |     |           |     |           |     |           |     |  |       |      |         |    |          |   |   |           |      |          |    |          |    |           |    |  |      |      |     |   |      |   |       |   |       |   |        |   |       |   |  |        |      |      |   |            |    |           |    |   |         |      |               |    |                |    |             |    |           |   |             |   |              |    |          |    |      |   |  |         |      |         |    |         |    |         |    |         |    |              |    |              |    |              |    |              |    |   |        |      |               |   |     |   |         |    |
| Tel. Initiate   | T†            |         |               |           |           |        |            |         |               |      |           |        |   |               |      |      |   |       |   |      |    |         |    |              |   |  |         |      |         |     |         |     |           |     |           |     |           |     |           |     |           |     |  |       |      |         |    |          |   |   |           |      |          |    |          |    |           |    |  |      |      |     |   |      |   |       |   |       |   |        |   |       |   |  |        |      |      |   |            |    |           |    |   |         |      |               |    |                |    |             |    |           |   |             |   |              |    |          |    |      |   |  |         |      |         |    |         |    |         |    |         |    |              |    |              |    |              |    |              |    |   |        |      |               |   |     |   |         |    |
| Relay Initiate  | R†            |         |               |           |           |        |            |         |               |      |           |        |   |               |      |      |   |       |   |      |    |         |    |              |   |  |         |      |         |     |         |     |           |     |           |     |           |     |           |     |           |     |  |       |      |         |    |          |   |   |           |      |          |    |          |    |           |    |  |      |      |     |   |      |   |       |   |       |   |        |   |       |   |  |        |      |      |   |            |    |           |    |   |         |      |               |    |                |    |             |    |           |   |             |   |              |    |          |    |      |   |  |         |      |         |    |         |    |         |    |         |    |              |    |              |    |              |    |              |    |   |        |      |               |   |     |   |         |    |
| Independent   | I†            |         |               |           |           |        |            |         |               |      |           |        |   |               |      |      |   |       |   |      |    |         |    |              |   |  |         |      |         |     |         |     |           |     |           |     |           |     |           |     |           |     |  |       |      |         |    |          |   |   |           |      |          |    |          |    |           |    |  |      |      |     |   |      |   |       |   |       |   |        |   |       |   |  |        |      |      |   |            |    |           |    |   |         |      |               |    |                |    |             |    |           |   |             |   |              |    |          |    |      |   |  |         |      |         |    |         |    |         |    |         |    |              |    |              |    |              |    |              |    |   |        |      |               |   |     |   |         |    |
| Operation   | O             |         |               |           |           |        |            |         |               |      |           |        |   |               |      |      |   |       |   |      |    |         |    |              |   |  |         |      |         |     |         |     |           |     |           |     |           |     |           |     |           |     |  |       |      |         |    |          |   |   |           |      |          |    |          |    |           |    |  |      |      |     |   |      |   |       |   |       |   |        |   |       |   |  |        |      |      |   |            |    |           |    |   |         |      |               |    |                |    |             |    |           |   |             |   |              |    |          |    |      |   |  |         |      |         |    |         |    |         |    |         |    |              |    |              |    |              |    |              |    |   |        |      |               |   |     |   |         |    |
| Earth cont.   | C             |         |               |           |           |        |            |         |               |      |           |        |   |               |      |      |   |       |   |      |    |         |    |              |   |  |         |      |         |     |         |     |           |     |           |     |           |     |           |     |           |     |  |       |      |         |    |          |   |   |           |      |          |    |          |    |           |    |  |      |      |     |   |      |   |       |   |       |   |        |   |       |   |  |        |      |      |   |            |    |           |    |   |         |      |               |    |                |    |             |    |           |   |             |   |              |    |          |    |      |   |  |         |      |         |    |         |    |         |    |         |    |              |    |              |    |              |    |              |    |   |        |      |               |   |     |   |         |    |
| Special Tone  | S*            |         |               |           |           |        |            |         |               |      |           |        |   |               |      |      |   |       |   |      |    |         |    |              |   |  |         |      |         |     |         |     |           |     |           |     |           |     |           |     |           |     |  |       |      |         |    |          |   |   |           |      |          |    |          |    |           |    |  |      |      |     |   |      |   |       |   |       |   |        |   |       |   |  |        |      |      |   |            |    |           |    |   |         |      |               |    |                |    |             |    |           |   |             |   |              |    |          |    |      |   |  |         |      |         |    |         |    |         |    |         |    |              |    |              |    |              |    |              |    |   |        |      |               |   |     |   |         |    |
| EOL Res.  | E*            |         |               |           |           |        |            |         |               |      |           |        |   |               |      |      |   |       |   |      |    |         |    |              |   |  |         |      |         |     |         |     |           |     |           |     |           |     |           |     |           |     |  |       |      |         |    |          |   |   |           |      |          |    |          |    |           |    |  |      |      |     |   |      |   |       |   |       |   |        |   |       |   |  |        |      |      |   |            |    |           |    |   |         |      |               |    |                |    |             |    |           |   |             |   |              |    |          |    |      |   |  |         |      |         |    |         |    |         |    |         |    |              |    |              |    |              |    |              |    |   |        |      |               |   |     |   |         |    |
| None  | N             |         |               |           |           |        |            |         |               |      |           |        |   |               |      |      |   |       |   |      |    |         |    |              |   |  |         |      |         |     |         |     |           |     |           |     |           |     |           |     |           |     |  |       |      |         |    |          |   |   |           |      |          |    |          |    |           |    |  |      |      |     |   |      |   |       |   |       |   |        |   |       |   |  |        |      |      |   |            |    |           |    |   |         |      |               |    |                |    |             |    |           |   |             |   |              |    |          |    |      |   |  |         |      |         |    |         |    |         |    |         |    |              |    |              |    |              |    |              |    |   |        |      |               |   |     |   |         |    |
| Entries   | Code          |         |               |           |           |        |            |         |               |      |           |        |   |               |      |      |   |       |   |      |    |         |    |              |   |  |         |      |         |     |         |     |           |     |           |     |           |     |           |     |           |     |  |       |      |         |    |          |   |   |           |      |          |    |          |    |           |    |  |      |      |     |   |      |   |       |   |       |   |        |   |       |   |  |        |      |      |   |            |    |           |    |   |         |      |               |    |                |    |             |    |           |   |             |   |              |    |          |    |      |   |  |         |      |         |    |         |    |         |    |         |    |              |    |              |    |              |    |              |    |   |        |      |               |   |     |   |         |    |
| 1 x M20   | 1B            |         |               |           |           |        |            |         |               |      |           |        |   |               |      |      |   |       |   |      |    |         |    |              |   |  |         |      |         |     |         |     |           |     |           |     |           |     |           |     |           |     |  |       |      |         |    |          |   |   |           |      |          |    |          |    |           |    |  |      |      |     |   |      |   |       |   |       |   |        |   |       |   |  |        |      |      |   |            |    |           |    |   |         |      |               |    |                |    |             |    |           |   |             |   |              |    |          |    |      |   |  |         |      |         |    |         |    |         |    |         |    |              |    |              |    |              |    |              |    |   |        |      |               |   |     |   |         |    |
| 2 x M20   | 2B            |         |               |           |           |        |            |         |               |      |           |        |   |               |      |      |   |       |   |      |    |         |    |              |   |  |         |      |         |     |         |     |           |     |           |     |           |     |           |     |           |     |  |       |      |         |    |          |   |   |           |      |          |    |          |    |           |    |  |      |      |     |   |      |   |       |   |       |   |        |   |       |   |  |        |      |      |   |            |    |           |    |   |         |      |               |    |                |    |             |    |           |   |             |   |              |    |          |    |      |   |  |         |      |         |    |         |    |         |    |         |    |              |    |              |    |              |    |              |    |   |        |      |               |   |     |   |         |    |
| 1 x M25   | 1C            |         |               |           |           |        |            |         |               |      |           |        |   |               |      |      |   |       |   |      |    |         |    |              |   |  |         |      |         |     |         |     |           |     |           |     |           |     |           |     |           |     |  |       |      |         |    |          |   |   |           |      |          |    |          |    |           |    |  |      |      |     |   |      |   |       |   |       |   |        |   |       |   |  |        |      |      |   |            |    |           |    |   |         |      |               |    |                |    |             |    |           |   |             |   |              |    |          |    |      |   |  |         |      |         |    |         |    |         |    |         |    |              |    |              |    |              |    |              |    |   |        |      |               |   |     |   |         |    |
| 2 x M25   | 2C            |         |               |           |           |        |            |         |               |      |           |        |   |               |      |      |   |       |   |      |    |         |    |              |   |  |         |      |         |     |         |     |           |     |           |     |           |     |           |     |           |     |  |       |      |         |    |          |   |   |           |      |          |    |          |    |           |    |  |      |      |     |   |      |   |       |   |       |   |        |   |       |   |  |        |      |      |   |            |    |           |    |   |         |      |               |    |                |    |             |    |           |   |             |   |              |    |          |    |      |   |  |         |      |         |    |         |    |         |    |         |    |              |    |              |    |              |    |              |    |   |        |      |               |   |     |   |         |    |
| 1 x 1/2" NPT  | 1M            |         |               |           |           |        |            |         |               |      |           |        |   |               |      |      |   |       |   |      |    |         |    |              |   |  |         |      |         |     |         |     |           |     |           |     |           |     |           |     |           |     |  |       |      |         |    |          |   |   |           |      |          |    |          |    |           |    |  |      |      |     |   |      |   |       |   |       |   |        |   |       |   |  |        |      |      |   |            |    |           |    |   |         |      |               |    |                |    |             |    |           |   |             |   |              |    |          |    |      |   |  |         |      |         |    |         |    |         |    |         |    |              |    |              |    |              |    |              |    |   |        |      |               |   |     |   |         |    |
| 2 x 1/2" NPT  | 2M            |         |               |           |           |        |            |         |               |      |           |        |   |               |      |      |   |       |   |      |    |         |    |              |   |  |         |      |         |     |         |     |           |     |           |     |           |     |           |     |           |     |  |       |      |         |    |          |   |   |           |      |          |    |          |    |           |    |  |      |      |     |   |      |   |       |   |       |   |        |   |       |   |  |        |      |      |   |            |    |           |    |   |         |      |               |    |                |    |             |    |           |   |             |   |              |    |          |    |      |   |  |         |      |         |    |         |    |         |    |         |    |              |    |              |    |              |    |              |    |   |        |      |               |   |     |   |         |    |
| 1 x 3/4" NPT  | 1N            |         |               |           |           |        |            |         |               |      |           |        |   |               |      |      |   |       |   |      |    |         |    |              |   |  |         |      |         |     |         |     |           |     |           |     |           |     |           |     |           |     |  |       |      |         |    |          |   |   |           |      |          |    |          |    |           |    |  |      |      |     |   |      |   |       |   |       |   |        |   |       |   |  |        |      |      |   |            |    |           |    |   |         |      |               |    |                |    |             |    |           |   |             |   |              |    |          |    |      |   |  |         |      |         |    |         |    |         |    |         |    |              |    |              |    |              |    |              |    |   |        |      |               |   |     |   |         |    |
| 2 x 3/4" NPT  | 2N            |         |               |           |           |        |            |         |               |      |           |        |   |               |      |      |   |       |   |      |    |         |    |              |   |  |         |      |         |     |         |     |           |     |           |     |           |     |           |     |           |     |  |       |      |         |    |          |   |   |           |      |          |    |          |    |           |    |  |      |      |     |   |      |   |       |   |       |   |        |   |       |   |  |        |      |      |   |            |    |           |    |   |         |      |               |    |                |    |             |    |           |   |             |   |              |    |          |    |      |   |  |         |      |         |    |         |    |         |    |         |    |              |    |              |    |              |    |              |    |   |        |      |               |   |     |   |         |    |
| Finish  | Code          |         |               |           |           |        |            |         |               |      |           |        |   |               |      |      |   |       |   |      |    |         |    |              |   |  |         |      |         |     |         |     |           |     |           |     |           |     |           |     |           |     |  |       |      |         |    |          |   |   |           |      |          |    |          |    |           |    |  |      |      |     |   |      |   |       |   |       |   |        |   |       |   |  |        |      |      |   |            |    |           |    |   |         |      |               |    |                |    |             |    |           |   |             |   |              |    |          |    |      |   |  |         |      |         |    |         |    |         |    |         |    |              |    |              |    |              |    |              |    |   |        |      |               |   |     |   |         |    |
| Natural Black   | N             |         |               |           |           |        |            |         |               |      |           |        |   |               |      |      |   |       |   |      |    |         |    |              |   |  |         |      |         |     |         |     |           |     |           |     |           |     |           |     |           |     |  |       |      |         |    |          |   |   |           |      |          |    |          |    |           |    |  |      |      |     |   |      |   |       |   |       |   |        |   |       |   |  |        |      |      |   |            |    |           |    |   |         |      |               |    |                |    |             |    |           |   |             |   |              |    |          |    |      |   |  |         |      |         |    |         |    |         |    |         |    |              |    |              |    |              |    |              |    |   |        |      |               |   |     |   |         |    |
| Red   | R             |         |               |           |           |        |            |         |               |      |           |        |   |               |      |      |   |       |   |      |    |         |    |              |   |  |         |      |         |     |         |     |           |     |           |     |           |     |           |     |           |     |  |       |      |         |    |          |   |   |           |      |          |    |          |    |           |    |  |      |      |     |   |      |   |       |   |       |   |        |   |       |   |  |        |      |      |   |            |    |           |    |   |         |      |               |    |                |    |             |    |           |   |             |   |              |    |          |    |      |   |  |         |      |         |    |         |    |         |    |         |    |              |    |              |    |              |    |              |    |   |        |      |               |   |     |   |         |    |
| Special   | S*            |         |               |           |           |        |            |         |               |      |           |        |   |               |      |      |   |       |   |      |    |         |    |              |   |  |         |      |         |     |         |     |           |     |           |     |           |     |           |     |           |     |  |       |      |         |    |          |   |   |           |      |          |    |          |    |           |    |  |      |      |     |   |      |   |       |   |       |   |        |   |       |   |  |        |      |      |   |            |    |           |    |   |         |      |               |    |                |    |             |    |           |   |             |   |              |    |          |    |      |   |  |         |      |         |    |         |    |         |    |         |    |              |    |              |    |              |    |              |    |   |        |      |               |   |     |   |         |    |



## Exd(e), Heavy Duty Industrial & Marine, Weatherproof



### Introduction

This range of audio/visual combination units may be assembled from MEDC's range of beacons and sounders. Mounted on a sturdy, drilled, painted, stainless steel plate, the units are pre-wired as standard such that a single input operates both the sounder and beacon simultaneously.

Units are available for use in potentially explosive atmospheres and dedicated units are now available for use in industrial and marine environments.

### Features

- \*Zones 1, 2 and safe area use.
- \*ATEX approved Ex II 2GD.
- \*IECEx certified Gb, Db.
- \*UL listed Class I, Div. 1 & 2, Groups C & D.
- IP66 and 67.
- \*Certified temperature: -55°C to +70°C.
- Corrosion free GRP beacon/sounder.
- Beacon available as xenon, filament, fluorescent or LED.
- Xenon: up to 21J.
- Filament: up to 100W.
- Fluorescent: up to 39W.
- LED: up to 192cd.
- Sounder: up to 115dBA output at 1 metre.
- All stainless steel (316), epoxy painted back plate.

*\*Model dependent.*

**Other combinations of beacons and sounders are available – please contact sales office for detailed specifications.**



ATEX

IECEx

UL

US

UL

IP66/67  
Weatherproof

# Certification and Specification

## 1. DB3/XB11 – Explosionproof Xenon 5J; Sounder up to 115dB(A), all GRP corrosion free products.

|                         |   |
|-------------------------|---|
| <b>Certification:</b>   | ATEX: Ex II 2 GD Ex d IIB T4/T5 Gb, Ex tb IIIC T100°C/T135°C Db.<br>IECEx: Ex d IIB T4/T5 Gb, Ex tb IIIC T100°C/T135°C Db cULus: Class I, Div. 2, Groups C & D. |
| <b>Voltage:</b>         | 24V d.c., 110V a.c., 240V a.c.  |
| <b>Beacon:</b>          | Standard: XB11 (Xenon 5J).<br>Option: Filament (10W). Fluorescent ( $\leq 10W$ ).   |
| <b>Sounder:</b>         | Standard: DB3 (long flare) $\leq 115dB(A)$ at 1 metre.<br>Option: DB3 (short flare) $\leq 108dB(A)$ at 1 metre.   |
| <b>Dimensions (mm):</b> | 420 (height) x 220 (width) x 337 (depth).   |
| <b>Options:</b>         | Refer to data sheet. Specify when ordering.   |

**Ordering information** – Standard product. Specify options 1 to 4.

| Product  | 1. Certification | 2. Voltage | 3. Lens colour | 4. Finish            |
|----------|------------------|------------|----------------|----------------------|
| DB3+XB11 | ATEX, IECEx, UL  | see above  | Red Amber      | Natural Black or Red |



## 2. DB1/SM87HXB – Explosionproof Xenon 5J; Sounder up to 110dB(A), LM25 or stainless steel construction, red finish.

|                         |   |
|-------------------------|---|
| <b>Certification:</b>   | ATEX: Ex II 2 G Ex d IIB T5/T6* Gb IECEx: Ex d IIB T5/T6* Gb UL: Class I, Div. 1, Groups C & D.         |
| <b>Voltage:</b>         | 24V d.c., 110V a.c., 240V a.c.  |
| <b>Beacon:</b>          | Standard: SM87 (Xenon 5J).<br>Option: Filament (10W). Fluorescent ( $\leq 10W$ ). LED ( $\leq 192cd$ ). |
| <b>Sounder:</b>         | Standard: DB1 HP $\leq 110dB(A)$ at 1 metre.<br>Option: DB1 P $\leq 106dB(A)$ at 1 metre.               |
| <b>Dimensions (mm):</b> | 351 (height) x 228 (width) x 205 (depth).   |
| <b>Options:</b>         | Refer to data sheet. Specify when ordering.   |

\* Model dependent.

**Ordering information** – Standard product. Specify options 1 to 5

| Product       | 1. Body Material        | 2. Certification | 3. Voltage | 4. Lens colour | 5. Finish |
|---------------|-------------------------|------------------|------------|----------------|-----------|
| DB1HP+SM87HXB | LM25 or Stainless Steel | ATEX, IECEx, UL  | see above  | Red Amber      | specify   |



## 3. DB3/SM87HXB – Explosionproof Xenon 5J; LM25 or stainless steel, Sounder up to 115dB(A), GRP construction, red finish.

|                         |  |
|-------------------------|--|
| <b>Certification:</b>   | ATEX: Ex II 2 GD Ex d IIC T4/T5 Gb, Ex tb IIIC T100°C/T135°C Db.<br>IECEx: Ex d IIC T4/T5 Gb, Ex tb IIIC T100°C/T135°C Db cULus: Class I, Div. 2, Groups C & D.  |
| <b>Voltage:</b>         | 24V d.c., 110V a.c., 240V a.c.   |
| <b>Beacon:</b>          | LM25 or stainless steel.   |
| <b>Sounder:</b>         | Corrosion-free GRP   |
| <b>Beacon:</b>          | Standard: SM87 HXB (Xenon 5J). Option: Filament (10W). Fluorescent ( $\leq 10W$ ). LED ( $\leq 192cd$ ).   |
| <b>Sounder:</b>         | Standard: DB3 (long flare) $\leq 115dB(A)$ at 1 metre.<br>Option: DB3 (short flare) $\leq 108dB(A)$ at 1 metre (also available close coupled).<br>DB3 (short flare close coupled) $\leq 108dB(A)$ at 1 metre |
| <b>Dimensions (mm):</b> | 420 (height) x 220 (width) x 337 (depth).  |
| <b>Options:</b>         | Refer to data sheet. Specify when ordering.  |

**Ordering information** – Standard product. Specify options 1 to 5.

| Product     | 1. Body Material        | 2. Certification | 3. Voltage | 4. Lens colour | 5. Finish |
|-------------|-------------------------|------------------|------------|----------------|-----------|
| DB3+SM87HXB | LM25 or Stainless Steel | ATEX, IECEx, UL  | see above  | Red Amber      | specify   |



Close coupled version shown. Other options available.

## 4. DB12/XB13 or DB15/XB13 – Heavy Duty Industrial & Marine Xenon 10J; Sounder DB12 (DB15) up to 110dB(A) 117 dB(A)

|                         |  |
|-------------------------|--|
| <b>Applications:</b>    | Harsh Industrial & Marine Environments.  |
| <b>Voltage:</b>         | 24V d.c., 110V a.c., 240V a.c.   |
| <b>Beacon:</b>          | Standard: XB13 (Xenon 10J).  |
| <b>Sounder:</b>         | Standard: DB12 $\leq 110dB(A)$ at 1 metre.<br>Standard: DB15 $\leq 115dB(A)$ at 1 metre. |
| <b>Dimensions (mm):</b> | 300 (height) x 195 (width) x 220 (depth).  |

**Ordering information** – Standard product. Specify options 1 to 3

| Product   | 1. Voltage | 2. Lens colour | 3. Finish   |
|-----------|------------|----------------|-------------|
| DB12+XB13 | see above  | Red Amber      | Natural Red |



## Explosion-proof, Weatherproof



## Introduction

This range of versatile status lights has been designed to suit various offshore and onshore applications.

Available as LED, xenon, filament and fluorescent beacons.

The SM87 SL range is manufactured in marine grade alloy or stainless steel and the XB11 SL in corrosion-free GRP to provide a wide range of status lights to suit clients' requirements.

All units can be supplied as 1, 2, 3, 4 or 5 way.

**Note: Units shown are for illustration purposes only, other variants are available.**

## Features

- Zone 1 and Zone 2 use.
- Exd.
- \*ATEX approved, Ex II 2GD.
- \*BASEEFA certified.
- IECEx certified Gb, Db.
- \*UL listed for USA and Canada:
  - Class I, Div. 1 & 2, Groups C & D.
  - Class I, Zone 1, AExd IIB T6.
- \*CSA certified.
- CUTR certified
- \*Chinese (CQST) certified.
- Brazilian (Inmetro) certified.
- IP66 & 67.
- \*Certified temperature: -55°C to +70°C.
- \*LED, xenon, fluorescent, filament.
- Marine grade alloy, stainless steel option or GRP.
- Close-coupled and pre-wired to customer's requirements.

*\*Model dependent.*



# Certification and Specification

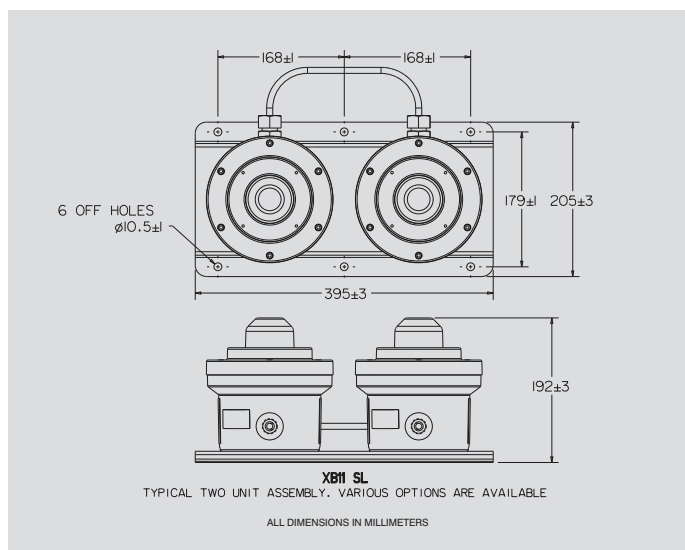
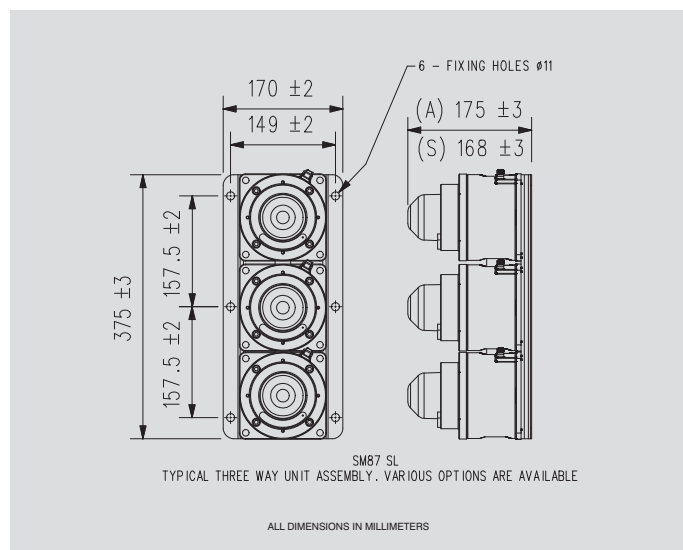
## SM87SL

|                              |   |
|------------------------------|---|
| <b>Lamp Types:</b>           | LED 192 Candela.<br>Xenon 6 joules maximum.<br>Fluorescent 10W or 5W.<br>Filament 40W maximum.  |
| <b>Certification:</b>        | Certified to IEC60079-0, IEC60079-1, IEC60079-31.<br>Certified to EN60079-0, EN60079-1, EN60079-31.<br>ATEX Cert. No. Baseefa 03ATEX0222.<br>Ex II 2 GD Ex d IIC T5/T6 Gb, Ex tb IIIC 65°C...100°C Db.<br>IECEX Cert. No. IECEX BAS 09.0059.<br>Ex d IIC T3/T4/T5/T6 Gb, Ex tb IIIC T55°C...T155°C Db.<br>UL Listed for USA and Canada:<br>Class I, Div 1, Groups C & D, Class I, Zone 1,<br>AExd IIB T6, Listing No. E187894.<br>CSA Certified: Class I, Div 1 & 2, Group D. Cert. No. 96406.<br>CUTR Certified: 1Ex d IIB T4/T5/T6 Gb, Ex tb IIIC 75°C/90°C/105°C Db.<br>Chinese Certified: Exd IIC T4 (Filament), Exd IIC T6 (Fluorescent & Xenon).<br>Brazilian (Inmetro) Certified: BR-Ex d IIC T3/T4/T5/T6. |
| <b>Voltage Frequency:</b>    | 50 Hz as standard. 60 Hz available if required.   |
| <b>Xenon Voltages:</b>       | 24, 48V d.c. 110, 120, 240, 254V a.c.<br>(see SM87 HXB data sheet for further information).   |
| <b>Filament Voltages:</b>    | 12, 24, 48V d.c., 110, 220, 240, 254V a.c.<br>(see SM87 LU3 data sheet for further information).  |
| <b>Fluorescent Voltages:</b> | 12, 24, 48V d.c., 220, 240, 254V a.c.<br>(see SM87 LU1 data sheet for further information).   |
| <b>Lamp Colours:</b>         | Red, Amber, Yellow, Green, Blue or Clear.   |
| <b>Terminals:</b>            | 2.5mm <sup>2</sup> max.   |
| <b>Wiring:</b>               | Standard configuration of internal wiring is to common the negative/neutral connections.<br>If individually wired lamps are required, please state requirements.  |
| <b>Entries:</b>              | Up to 3 x M20 or M25 ISO.   |
| <b>Enclosure:</b>            | LM 25TF Marine Grade Alloy.   |
| <b>Lens:</b>                 | Glass.  |
| <b>Finish:</b>               | Natural black or painted to customer's specification.   |
| <b>Ingress Protection:</b>   | IP66 & 67.  |
| <b>Ambient Temp.</b>         | -20°C to +55°C (LED & Fluorescent).<br>-55°C to +70°C (Xenon Filament).   |
| <b>Gland Type:</b>           | Exd.  |

## XB11SL

|                              |   |
|------------------------------|---|
| <b>Lamp Types:</b>           | Xenon 5 joules.<br>Fluorescent 10W or 5W.<br>Filament 10W.  |
| <b>Certification:</b>        | Certified to IEC60079-0, IEC60079-1, IEC60079-31.<br>Certified to EN60079-0, EN60079-1, EN60079-31.<br>ATEX Cert. No. BAS99ATEX2195.<br>Ex II 2 GD Ex d IIB T4/T5/T6 Gb, Ex tb IIIC 70°C...110°C.<br>IECEX Cert. No. IECEX BAS 10.0101.<br>Ex d IIB T4/T5/T6 Gb, Ex tb IIIC T70°C...T110°C Db.<br>UL Listed for USA and Canada:<br>Class I, Div 2, Groups C & D, Class I, Zones 1 & 2,<br>AExd IIB T5/T6. Listing No. E187894 (XB11 only).<br>CUTR Certified: 1Ex d IIC T5/T6 Gb, Ex tb IIIC T65°C/ T80°C/ T95°C Db (HXB).<br>1Ex d IIC T6 Gb, Ex tb IIIC T55°C/ T70°C Db (LED).<br>1Ex d IIC T4 Gb, Ex tb IIIC T110°C Db (XBT).<br>Chinese Certified: Exd IIB T5/T6.<br>Brazilian (Inmetro) Certified: BR-Ex d IIB T4/T5/T6. |
| <b>Voltage Frequency:</b>    | 50 Hz as standard. 60 Hz available if required.   |
| <b>Xenon Voltages:</b>       | 24V d.c., 110V, 240V a.c.<br>(see XB11 data sheet for further information).   |
| <b>Filament Voltages:</b>    | 24, 48V d.c., 110, 220, 240, 254V a.c.<br>(see FL11* data sheet for further information).   |
| <b>Fluorescent Voltages:</b> | 24V d.c., 240V a.c.<br>(see FL11* data sheet for further details).  |
| <b>Lamp Colours:</b>         | Red, Amber, Yellow, Green, Blue or Clear.   |
| <b>Terminals:</b>            | 2.5mm <sup>2</sup> max.   |
| <b>Wiring:</b>               | Standard configuration of internal wiring is to common the negative/neutral connections.<br>If individually wired lamps are required, please state requirements.  |
| <b>Entries:</b>              | 1 x M20.  |
| <b>Enclosure:</b>            | GRP.  |
| <b>Lens:</b>                 | Glass.  |
| <b>Finish:</b>               | Natural black or painted to customer's specification.   |
| <b>Ingress Protection:</b>   | IP66 & 67.  |
| <b>Ambient Temp.</b>         | -55°C to +70°C.   |
| <b>Gland Type:</b>           | Exd.  |

\*NOTE: FL11 currently not available UL listed.



## Ordering Requirements

Please contact MEDC to discuss your requirements.



## Exe(m), Weatherproof



### Features

- Zone 1 and Zone 2 use.
- Exe(m) II T3/T4.
- ATEX approved, Ex II 2G.
- IECEx certified Gb.
- Chinese (CQST) certified.
- IP66 and IP67.
- Certified temperature: -40°C to +55°C\*.
- Corrosion resistant GRP.
- Up to 5 ways.
- Xenon, LED & Filament versions available.
- Various lamp colours.
- Lightweight.
- Retained stainless steel cover screws.

\* Model Dependent.

### Introduction

Manufactured in GRP, with a high ingress protection and high light output, these status lamps have been designed for use in potentially explosive atmospheres and harsh environmental conditions such as those found offshore and onshore in the petrochemical industries.

**A long life, high intensity, LED version is now available.**



# Certification and Specification

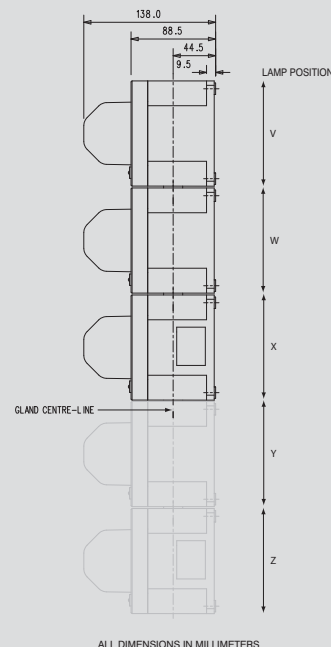
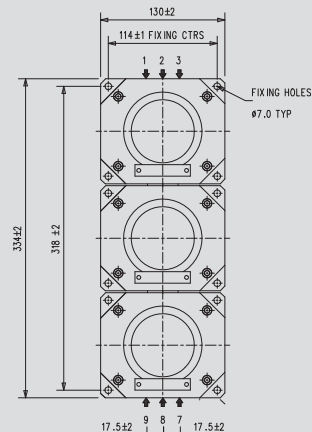
|                              |   |
|------------------------------|---|
| <b>Certification:</b>        | Certified to: EN60079-0, EN60079-7, EN60079-18<br>Cert. No. BAS02ATEX2108X.<br>Certified to: IEC 60079-0, IEC 60079-7, IEC 60079-18.<br>IECEx Cert No. IECEx BAS 11.0105X.<br>Ex e IIC T3 Gb. Filament.<br>Ex e mb IIC T4 Gb. Xenon & LED.<br>Chinese (CQST) – Exe II T3, Filament.<br>– Exe mb II T4, Xenon & LED. |
| <b>Material:</b>             | UV stable, glass reinforced polyester with polycarbonate wellglass.<br>Captive stainless steel cover screws.  |
| <b>Finish:</b>               | Natural black or painted to customer specification.   |
| <b>Voltage:</b>              | d.c. – 12V, 24V, 48V.   |
| <b>Certified Temp:</b>       | –40°C to +55°C (Filament & Xenon).<br>–40°C to +45°C (LED).   |
| <b>Light Module:</b>         | Up to 5 ways – Filament: 2 x 5W.<br>Xenon: 1J (nominal).<br>LED: Up to 400Cd.   |
| <b>Light Module Colours:</b> | Red, Amber, Yellow, Green, Blue or Clear.   |
| <b>Weight:</b>               | 1.2kg 1 way.  |
| <b>Ingress Protection:</b>   | IP66 and IP67.  |
| <b>Terminals:</b>            | Filament: Max 12 x 4mm <sup>2</sup> .<br>Xenon: Max 16 x 2.5mm <sup>2</sup> .<br>LED: Max 16 x 2.5mm <sup>2</sup> or 4mm <sup>2</sup> .   |
| <b>Labels:</b>               | Optional stainless steel tag/duty label.  |

## Current Consumption:

| Model | Voltage | 24V       | 48V     |
|-------|---------|-----------|---------|
| Xenon | Current | 120mA     | 95mA    |
| LED   | Current | 130-180mA | 70-90mA |

## Entries:

| Size    | Maximum Number | Entry Position |        |
|---------|----------------|----------------|--------|
|         |                | Top            | Bottom |
| M16     | 2              | Any            | Any    |
| M20     | 2              | Any            | Any    |
| M25/M32 | 1              | 2              | 8      |



# Ordering Requirements

The following code is designed to help in selection of the correct unit. Build up the reference number by inserting the code for each component into the appropriate box.

|   |  |   |  |  |  |  |   |  |  |  |
|---|--|---|--|--|--|--|---|--|--|--|
| <b>Model</b><br>SL5   | <b>Certification</b><br><input type="text"/> | <b>Lamp Type / Positions</b><br>V <input type="text"/> W <input type="text"/> X <input type="text"/> Y <input type="text"/> Z <input type="text"/>  |  |  |  |  | <b>Voltage</b><br><input type="text"/>                                | <b>Cable Entries</b><br><input type="text"/>                               | <b>Duty/Tag label</b><br><input type="text"/>                | <b>Finish</b><br><input type="text"/>                        |
| <b>Certification Code</b><br>Uncertified W<br>Exe(m) E<br>IECEx J<br>Chinese (CQST) Q |  | <b>Indicate light module type</b><br>Filament 1 LED Steady 3<br>Xenon 2 LED Flashing 4<br>(60fpm) (60fpm)<br>Suffixed by colour required:<br><b>Lamp colour Code</b><br>Red R<br>Blue B<br>Green G<br>Amber A<br>Yellow Y*<br>Clear C |  |  |  |  | <b>Voltage Code</b><br>12V d.c. 012*<br>24V d.c. 024<br>48V d.c. 048† | <b>Entry Size Code</b><br>M16 *A<br>M20 *B<br>M25 *C<br>M32 *D             | <b>Label Code</b><br>Duty label D*<br>Tag label T*<br>None N | <b>Finish Code</b><br>Natural Black N<br>Red R<br>Special S* |
|   |  | * LED not available.  |  |  |  |  | † Note: Xenon and LED versions only.<br>* Filament version only.      | * Prefix with cable entry position.<br>(See diagram above)<br>E.g. 7A, 9A. | * Please specify.  | * Please specify.  |

Example: A two way Exe certified unit, with filament lamps coloured red top, blue bottom, rated 24V dc, with 2 x M20 bottom entries, finished in red would be our ref:  
**SL5E1R1B0247B79NR.**

## Exd, Weatherproof



## Features

- Zone 1 and Zone 2 use.
- ATEX certified.
- Ex II 2GD.
- IECEx certified Gb, Db.
- UL Listed (see US data sheet).
- IP66 and 67.
- Certified temperature: -55°C to +70°C\*.
- Corrosion free GRP.
- Filament 60W or 100W\*.
- High powered LED flashing or steady.
- Various flash rates available for xenon & LED units.
- Various lens colours.
- Optional cast or wire lens guard.
- High powered LED flashing or steady.

*\*Model dependent.*

## Introduction

These Status Lights have been designed for use in potentially explosive atmospheres and harsh environmental conditions. The indicators are suitable for use offshore or onshore, where a high degree of corrosion resistance is required.

The housings are manufactured from a UV stable, glass reinforced polyester (GRP) fitted to a stainless steel mounting plate for ease of installation. Stainless steel fixings are also used, ensuring a corrosion free product.

Units can be painted to customer specification and supplied with identification labels.

Units can be supplied as 2, 3 or 4 way in any combination.



# Certification and Specification

**Certification:** Certified to EN60079-0, EN60079-1, EN60079-31.  
 Certified to IEC60079-0, IEC60079-1, IEC60079-31.  
 ATEX Cert. No. Baseefa04ATEX0009X.  
 Ex II 2 GD Exd IIC T6/T5/T4/T3\* Gb.  
 Ex tb IIIC T85°C/ T100°C/ T135°C/ T200°C Db.  
 IECEx Cert. No. IECEx BAS 05.0048X.  
 Exd IIC T6/T5/T4/T3\* Gb.  
 Ex tb IIIC T85°C/ T100°C/ T135°C/ T200°C Db.  
 UL listed versions, see separate data sheet.  
 \*Model dependent.

**Material:** Body: Glass reinforced polyester.  
 Lens: Glass.  
 Back plate & fixings: stainless steel 316.  
 Wire Guard (optional): stainless steel wire.  
 Cast Guard (optional): aluminium LM25M.

**Finish:** Natural black or painted to customer specification.

**Voltage:** 24, 48V d.c.\* - 110, 120, 230, 240, 254V a.c. \* LED is d.c. only.

**Xenon:**  
 Tube Energy: 15 Joules.  
 Tube Life: > 1x10<sup>6</sup> flashes  
 Flash rate: 60, 80 or 120 fpm  
 Certified Temp: -55°C to +40°C (T6)  
 -55°C to +55°C (T5)  
 -55°C to +70°C (T4)

**Filament:**  
 Lamp Type: 60W or 100W GLS filament  
 Lamp Holder: E27 as standard  
 Certified Temp: 60W -55°C to +55°C (T4)  
 -55°C to +70°C (T3)  
 100W -55°C to +40°C (T3)

**LED:**  
 Certified Temp: -55°C to +55°C (T6)  
 -55°C to +70°C (T5)  
 LED Life: 54,000 Hours

**Weight:** 2-Way: 6.5Kg, 3-Way: 9.8Kg, 4-Way: 13.1Kg.

**Ingress Protection:** IP66 & 67

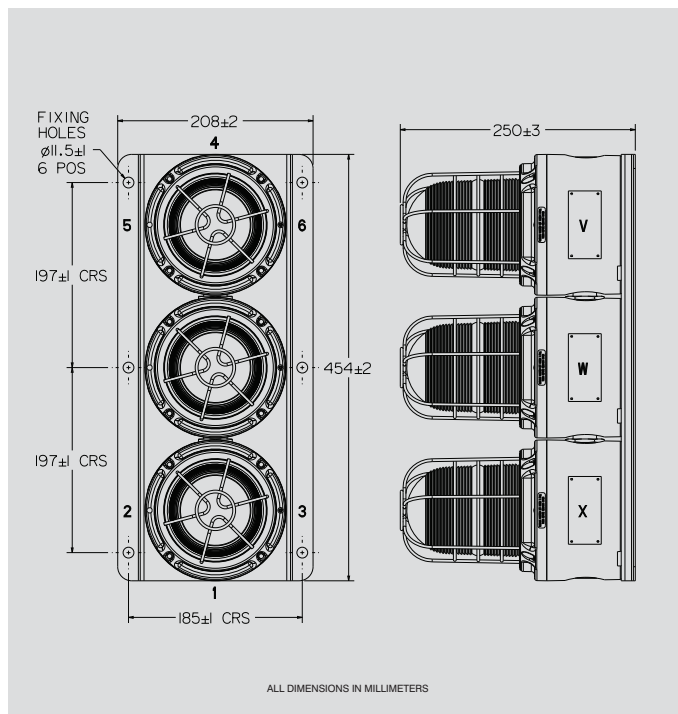
**Entries:** Available with up to 2 x M20 or 2 x M25 entries in either bottom or top of unit.  
 Entries in both bottom and top of unit by special order only.

**Terminals:** Suitable for up to 2.5mm<sup>2</sup> cable max.

**Labels:** Tag/Duty label option.

**Current Consumption (per way):**

|                 | d.c. |      | a.c. |      |      |      |      |
|-----------------|------|------|------|------|------|------|------|
| Voltage         | 24   | 48   | 110  | 120  | 230  | 240  | 254  |
| Xenon           | 0.99 | 0.73 | 0.4  | 0.4  | 0.2  | 0.2  | 0.17 |
| Filament - 60W  | 2.5  | 1.25 | 0.55 | 0.5  | 0.26 | 0.25 | 0.24 |
| Filament - 100W | 4.2  | 2.1  | 0.91 | 0.83 | 0.43 | 0.42 | 0.39 |
| LED - Steady    | 0.21 | 0.11 | -    | -    | -    | -    | -    |
| LED - Flashing  | 0.42 | 0.21 | -    | -    | -    | -    | -    |



**Light Output (effective cd):**

| Xenon 60fpm | Filament 100W | Filament 60W | LED 60fpm | LED 80fpm | LED 120fpm | LED Steady |
|-------------|---------------|--------------|-----------|-----------|------------|------------|
| 330         | 135           | 64           | 128       | 117       | 100        | 86         |

**Multiplying Factor for Coloured Lenses:**

|                | Red  | Blue | Green | Amber | Clear | Yellow |
|----------------|------|------|-------|-------|-------|--------|
| Xenon/Filament | 0.15 | 0.12 | 0.49  | 0.51  | 1.00  | 0.86   |
| LED            | 0.47 | 0.19 | 0.67  | 0.43  | 1.00  | 0.95   |

## Ordering Requirements

The following code is designed to help in selection of the correct unit. Build up the reference number by inserting the code for each component into the appropriate box.

| Model  | Certification | Lamp Type / Positions (see diagram)   |   |   |   | Voltage   | Cable Entries | Lens Guard   | Duty/Tag | Finish   |  |
|--|---------------|---|---|---|---|---|---------------|--|----------|--|--|
| SL15   |               | V   | W | X | Y |   |               |  |          |  |  |
| <b>Certification Code</b><br>ATEX B<br>IECEx J   |               | <b>Indicate light module type</b><br>Filament Xenon LED - 6*<br>60W - 1 60fpm - 3<br>100W - 2 80fpm - 4<br>120fpm - 5<br><br>Suffixed by colour required<br><b>Lens colour Code</b><br>Red R<br>Blue B<br>Green G<br>Amber A<br>Yellow Y<br>Clear C |   |   |   | <b>Voltage Code</b><br>24V d.c. 024<br>48V d.c. 048<br>110V a.c. 110*<br>120V a.c. 120*<br>230V a.c. 230*<br>240V a.c. 240*<br>254V a.c. 254* |               | <b>Guard Code</b><br>None N<br>Cast C<br>Wire W              |          | <b>Finish Code</b><br>Natural Black N<br>Red R<br>Blue B<br>Yellow Y<br>Green G<br>White W<br>Special S* |  |
| Example: A two way ATEX approved unit with one 100W filament lamp with green lens for the top unit and one 60fpm xenon lamp with red lens for the bottom unit, rated 24V with 2 x M20 bottom entries, no guard, no labels, finished in red would be:<br><b>SL15B2G3R0242C3CNNR</b> |               | * User selectable function preset at 60fpm.   |   |   |   | * LED not available.  |               | * Please specify.  |          |  |  |
|  |               |   |   |   |   | <b>Entry Size Code</b><br>M20 *C<br>M25 *D  |               | <b>Label Code</b><br>Duty label D*<br>Tag label T*<br>None N |          |  |  |
|  |               |   |   |   |   | * Prefix with cable entry position (see diagram)<br>Note: maximum 2 entries bottom OR top. Bottom AND top entry(s) by special order only.     |               | * Please specify.  |          |  |  |