MOD compliant IR (Infra-Red) Obstruction Light

CEL-IR850-Series II - LED Aircraft Warning Light - formally CEL-IR850-xx-CST

Application

Night vision goggle compatible 850nm infrared obstruction light for wind turbines and other vertical structures that cause aviation safeguarding concerns

Optical characteristics

- IR only flashing and/or IR and Red flashing (Combi Light)
- NVG compliant Infrared 850nm
- Red 25cd or 200cd - colour aviation red
- Horizontal beam 360° unrestricted
- Photocell for Day/Night switching
- LED lifetime minimum 100,000hrs

Key features

- Based on LED technology
- NVG compliant infrared (IR)
- GPS synchronisation
- Incorporated photocell for Day/Night switching
- Both stand-alone and Modbus operation available
- Extremely low power consumption
- Provides long maintenance free operating time
- 5yr warranty, optional 10yr warranty
- Cold spare operation
- Thermostat controlled smart heater
- Deep discharge protection (DC models)
- Battery powered operation (DC models)

Specification met

MOD Obstruction Lighting Guidance, Low Flying Operations Sqn (MOD CAS-AS LFOS) - 01 Jan 2020

Radiometric characteristics IR

MOD Infra-Red (IR) Lighting
- Wavelength 750-900nm
- Intensity 600mW/sr min at peak flash
- Intensity 1200W/sr max
- 600mW/sr minimum flash intensity 30° and -15° elevation
- 50% reduction btw 25 to 30° and -10 to -15° acceptable

MOD Visible Lighting
• 25cd or 200cd minimum intensity +15 deg° and 0°
• Red light overspill not exceed 10% intensity at 0°

- GPS synchronisation - 60FPM or Morse Code-W (6-sec cycle)

Electrical characteristics

- AC Voltage Range Nominal 100-250$_{VAC}$ -
- DC Voltage Range 10-60$_{VDC}$-
- Power Consumption: 25cd-0.3W, 200cd-1.5W, IR-3.5W @60FPM
- Robust overvoltage protection (Type II)
- Isolated RS-485
- Alarm relay max loading: 250$_{VAC}$@8A; 50$_{VDC}$ @1A

Mechanical characteristics

- Anodised marine grade aluminum chassis and end parts
- AISI316 acid proof stainless steel screws
- Clear IP65 polycarbonate dome
- Acrylic lenses, UV protected
- Operating temperature range -40...+55°C
- Height 255mm, diameter 104mm
- Weight 1.3kg (without mounting set)
- Terminal block for 0.2...4mm²(24-12 AWG) cables
- 5yr warranty, optional 10yr warranty

Options

- CEL-CP-M1-T - Central Controller Modbus Unit

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CEL LED obstruction lights cabling and installation principles are similar to those of conventional obstacle lights, the only exception being the correct polarity required by DC feed.

Terminal box include screw terminals and overvoltage protectors.

All connection alternatives can be protected with a 6A or 10A fuse
or with a circuit breaker (C curve).

Installation specifications
- Cable gland for lamp: M20, 8-13mm cable
- Cable gland for IN and OUT: M25, 11-17mm cable
- Wire diameter: max. 6mm^2
- Recommended cable: 3 x 1.5 or 3 x 2.5mm^2

Polarities:
Blue -
Black +
Yellow-Green PE

Order Codes:

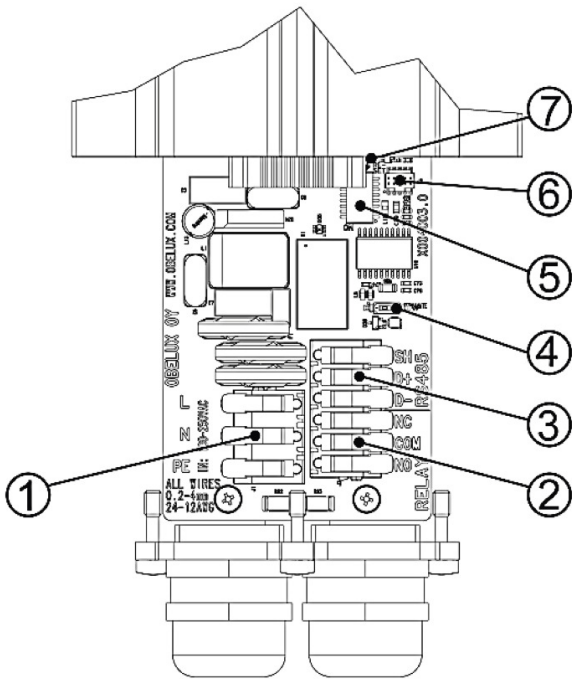| Order Code	Output	Operating Voltage	Power	IR	Photocell	Alarm Relay	Modbus	GPS Sync	Heater
AC MODELS									
MOD-AC-IR-RED-AG	IR+25cd/200cd	100-250VAC	5.5W	YES	YES	YES	NO	YES	YES
MOD-AC-IR-RED-GAM	IR+25cd/200cd	100-250VAC	5.5W	YES	YES	YES	YES	YES	YES
DC MODELS									
MOD-DC-IR-RED-AG	IR+25cd/200cd	10-60VDC	5.5W	YES	YES	YES	NO	YES	YES
MOD-DC-IR-RED-GAM	IR+25cd/200cd	10-60VDC	5.5W	YES	YES	YES	YES	YES	YES

* Power consumptions:

- Infra-Red - 3,5W

- 25cd - Red 0.3W,

- 200cd - Red 1.5W @60FPM

- All models available with IP67 water protection class

- All models available with optional 10yr warranty

- Light intensity depends on beam width (default beam width 20°) - Beam width factory set

- Flash rate and power are software configurable (flashing is not limited to constant rates, any flash sequence can be programmed, e.g. 20, 40FPM)

- DC models idle power consumption: 0.5W (light off, with GPS on)

- Heater increases power consumption by 7W; heater turns on when temperature drops below 10°C

- Heater can be set ON/OFF, factory setting: Heater ON

- Ingress protection class IP65 applies when the light is mounted vertically with the dome facing up

- Packing dimensions and weight: 280mm x 130mm x 100mm - 1.5kg

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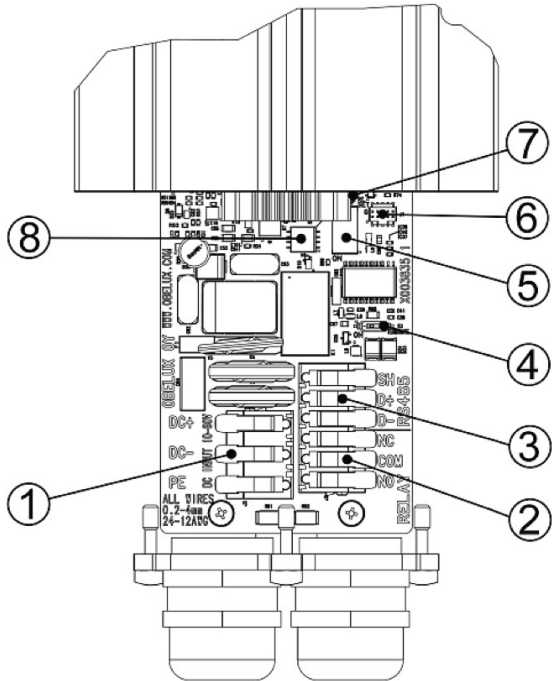# MOD compliant IR (Infra-Red) Obstruction Light

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Installation instructions

Open the back plate screws (Torx 20). The bottom plate and the main circuit board slide out. Route power and data cables via cable gland(s) on the back side of the light. Connect the cable wires securely to appropriate terminal block connectors. Return bottom plate properly to its place and securely tighten all screws. Make sure that all unused glands or gland holes are sealed.

AC models   DC models

Cabling specifications

- Cable gland M25
- Cable diameter 11-17mm
  (cable gland seal 6-13mm)
- Wire diameter max. 4mm²

  Recommended cables
- Power: 3G-1,5mm² or 3G-2,5 mm²
- Data: 3G-0,5mm² - 3G-1,5 mm²
  shielded
- Power+Data: Hybrid cable (e.g.
  servo cable)

1   Power input

Mark	Description	Information
L	Live	Connect to power supply live terminal
N	Neutral	Connect to power supply neutral terminal
PE	Ground	Protective earth

Mark	Description	Information
DC+	Positive	Connect to power supply positive terminal
DC−	Negative	Connect to power supply negative terminal
PE	Ground	Protective earth

2   Alarm relay output

3   RS-485 port

Mark	Description	Information
D+	Data+	RS-485 non-inverting pin
D−	Data−	RS-485 inverting pin
SH	Shield	Use shielded cable and connect the shield to the SH pin

4   RS-485 termination DIP switch
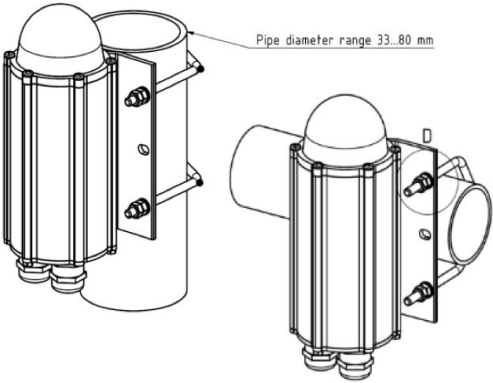
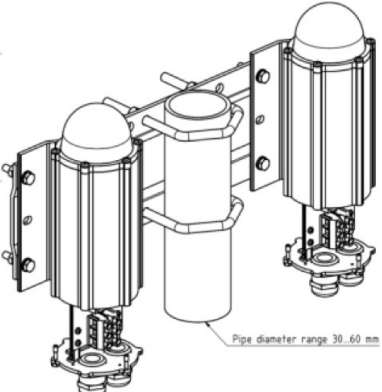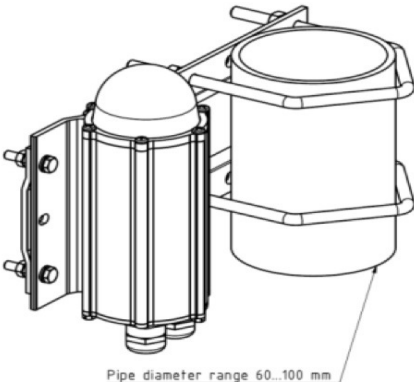**5   Configuration DIP switches**

6   Programming terminal

7   Reset button

8   Deep discharge protection switches (DC models)

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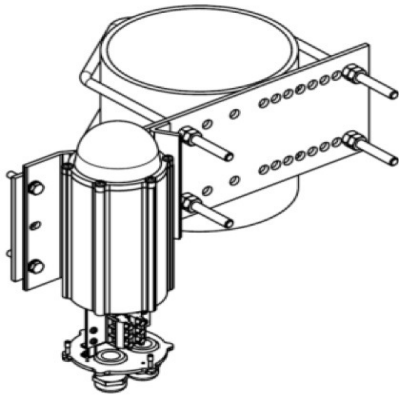## CEL-IR850-Series II - LED Aircraft Warning Light - formally CEL-IR850-xx-CST

CEL-MS-HV80
Mounting set for 33-80mm vertical or horizontal pipe.
This mounting set includes:
- 2pcs - M6 U-bolt
- 8pcs - M6 hex nut
- 4pcs - 6/12mm washer
- All parts are AISI316 acid-proof stainless steel.

More detailed mechanical data: see MS-HV80 datasheet

Order Code: CEL-MS-HV80

CEL-MS-EV60
Mounting set with extension plate for 30-60mm vertical pipe installation.
This mounting set includes:
- 2 pcs - M8 U-bolt, 8 pcs M8 hex nut
- 4 pcs - M6x30 bolt, 8 pcs M6 hex nut, 4 pcs 6/12 washer
- 1 pc - Extension plate
- Extension plate marine grade anodised aluminium, other parts AISI316 acidproof stainless steel.

More detailed mechanical data: see CEL-MS-EV60 datasheet

Order Code: CEL-MS-EV60
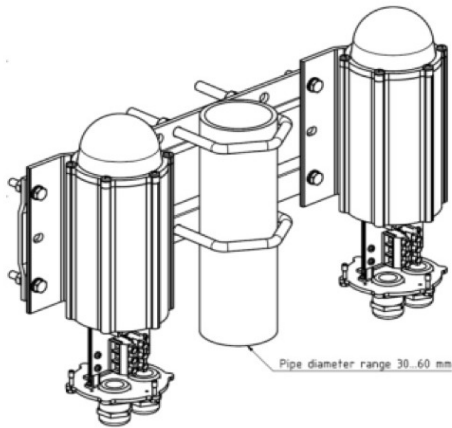
CEL-MS-EV100
Mounting set with extension plate for 60-100mm vertical pipe installation.
This mounting set includes:
- 2 pcs - M8 U-bolt, 8 pcs M8 hex nut
- 4 pcs - M6x30 bolt, 8 pcs M6 hex nut, 4pcs 6/12 washer
- 1 pc - Extension plate
- Extension plate marine grade anodised aluminium, other parts AISI316 acidproof stainless steel.

More detailed mechanical data: see CEL-MS-EV100 datasheet

Order Code: CEL-MS-EV100

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CEL-MS-EV150
Mounting set with extension plate for 100-150mm vertical pipe installation.
This mounting set includes:
- 2 pcs -M8 U-bolt, 8pcs M8 hex nut
- 4 pcs -M6x30 bolt, 8pcs M6 hex nut, 4 pcs 6/12 washer
- 1 pc - Extension plate
- Extension plate hot dipped galvanised steel, other parts
  AISI316 acid-proof stainless steel.

More detailed mechanical data: see CEL-MS-EV150 datasheet

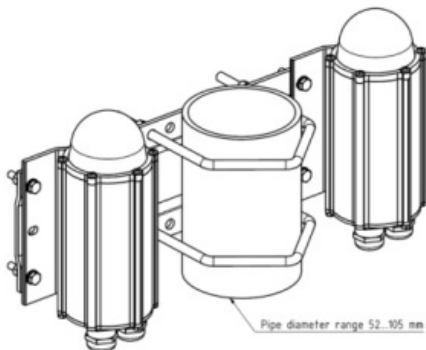**Order Code: CEL-MS-EV150**

CEL-MS-DEV60
Double mounting set with extension plate for 30-60mm vertcal pipe
installation. Mounting set include:
- 2 pcs - M8 U-bolt, 8pcs M8 hex nut
- 8 pcs - M6x30 bolt, 16pcs M6 hex nut, 8pcs 6/12 washer
- 1 pc - Extension plate
- Extension plate marine grade anodised aluminium, other
  parts AISI316 acidproof stainless steel.

More detailed mechanical data: see CEL-MS-DEV60 datasheet

Order Code: CEL-MS-DEV60

CEL-MS-DEV100
Double mounting set with extension plate for 60-100mm vertical pipe installation. Mounting set include:
- 2 pcs M8 U-bolt, 8 pcs M8 hex nut
- 8 pcs M6x30 bolt, 16 pcs M6 hex nut, 8 pcs 6/12 washer
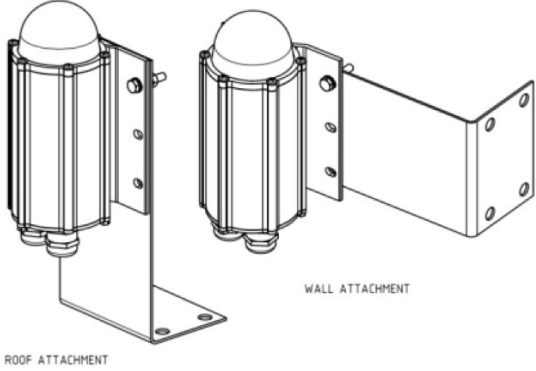- 1 pcs extension plate
Extension plate marine grade anodised aluminium, other parts AISI316 acidproof stainless steel.
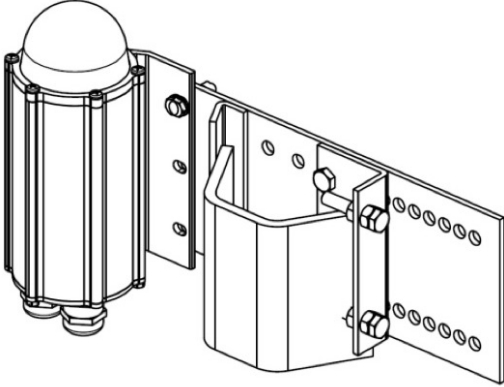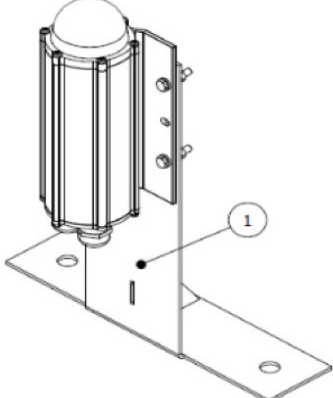
More detailed mechanical data: see CEL-MS-DEV100 datasheet

Order Code: CEL-MS-DEV100

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CEL-MS-RW
Mounting set for horizontal plate or wall installation.
Mounting set includes:
- 4 pcs - M6x30 bolt
- 8 pcs - M6 hex nut
- 4 pcs - 6/12 washer
- 1 pc   - L-shape 2mm plate
- All parts AISI 316 acid-proof stainless steel.

More detailed mechanical data: see MS-RW datasheet

Order Code: CEL-MS-RW

CEL-MS-LVU/LVA
Mounting set for L and V -shape profiles
Mounting set includes:
- 1 set - accessories for light fitting to plate
- 1 pc - extension plate with adjusting plate and accessories
- Extension plate hot dip galvanised steel, other parts AISI316 acid-proof stainless steel.

More detailed mechanical data: see MS-LVU/LVA datasheet

Order Code: CEL-MS-LVU - (galvanised extension plate)
Order Code: CEL-MS-LVA - (AISI316 extension plate)

CEL-MS-WT1/5
Mounting set for wind turbines.
Mounting set for horizontal plane.
Mounting set includes bracket and fasteners.
Mounting bracket AISI 304 stainless steel or AISI 316 aid-proof steel, other parts AISI 316 acid-proof steel.

More detailed mechanical data: see MS-WT1/5 datasheet

Order Code: CEL-MS-WT1   - (Ø 15,5mm holes, AISI 304 stainless steel bracket)
Order Code: CEL-MS-WT5   - (Ø 17.0mm holes, AISI 316 acid proof steel bracket)
Order Code: CEL-MS-WT5A - (Ø 17.0mm holes, AISI 304 stainless steel bracket)

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