Medium-Intensity Red Obstruction Light

ICAO Medium-Intensity Type B/C 2 000cd
NVG Compliant Infrared 850nm Light

OBELUX
AVIATION LIGHTS

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WWW.OBELUX.COM

Optical characteristics

- 2 000 cd fixed or flashing
- Configurable for 200 cd
- Colour aviation RED
- NVG compliant infrared (850nm)
- Horizontal beam 360°
- Vertical beam > 3°

Medium-Intensity Red Obstruction Light

LED Aviation Obstruction Lights

Obelux medium-intensity stand-alone red 2 000 cd model is used for marking tall structures, such as wind turbines, transmission masts, chimneys, broadcast masts, bridges, etc. It is designed for demanding offshore conditions, for instance for use in offshore wind turbines. The product offers unique features such as integrated fault monitoring, photocell, GPS synchronization and cold climate version. It supports both stand-alone and RS-485 Modbus operation as a part of Obelux aviation light system network. It has Modbus LAN TCP/IP as an option.

Specifications met

ICAO International Standards and Recommended Practices: Aerodromes Annex 14 Volume 1, 8th Edition, July 2018, Chapter 6: Medium-intensity Type B/C.

Fulfills the recommendations section in Table 6-3:

*1 125 cd Maximum Intensity @ vertical elevation angle -1°

*75 cd Maximum Intensity @ vertical elevation angle -10°

*) see page 2

Key Features

- Design lifetime more than 20 years
- Based on LED technology
- 2 000 cd RED fixed or flashing
- Supports both stand-alone and RS-485 Modbus operations
- Suitable for Offshore environment
- Built-in GPS synchronisation
- Built-in photocell
- Built-in cold climate version (CCV), i.e. temperature-controlled smart heater
- Built-in fault monitoring
- Dry contact alarm relay
- Visibility sensor interface controlled luminous output levels 10%, 30%, and 100%
- Hot start for radar-controlled systems
- Easy to chain (no need for junction box)
- Embedded Web Server
- 5-year warranty
- Option for 10-year warranty, the longest in the industry

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Electrical Characteristics

- Operating voltage (AC): 100-240$V_{AC,}$ 50Hz / 60Hz ± 6%
- Operating voltage (DC): 10-60V_{DC}
- Flash rates: 20/30/40/60 fpm
- Meets standards
  - EMC (Emissions): EN 61000-6-4
  - EMC (Immunity): EN 61000-6-2
- Power consumption for ICAO AC/DC versions (excluding CCV consumption):
  - 5,5W @ Night (RED, 40 fpm)
  - 7,5W @ Night (RED+IR, 40 fpm)
  - 30W @ Night (RED, fixed)
  - 32,5W @ Night (RED+IR, fixed)
- Power consumption of 3,5W @ 200 cd RED fixed
- Power consumption of 7 W @ 200 cd RED fixed + IR
- Power consumption for E1 versions: + 8%
- Type 2 overvoltage protection (varistor between L and PE and between L and N)
- Recommended cables (Outdoor) for AC versions:
  - Power (L-N-PE): 3x1,5mm² or 3x2,5mm² shielded
  - Power + Data/ Relay: 6x1,5mm² or 6x2,5mm² shielded

Smart Heater

- 15W, thermostat controlled
- Input voltage monitoring to detect battery/charger operation (DC models)
- Turns off in battery power (DC models)
  - Settable threshold to input voltage in which the heater will be disabled enables lower power consumption during battery discharge
- Cold climate version (CCV) prolongs the life of the obstruction light
- Power consumption can be ignored in autonomic calculations

Additional Factory-Installed Options

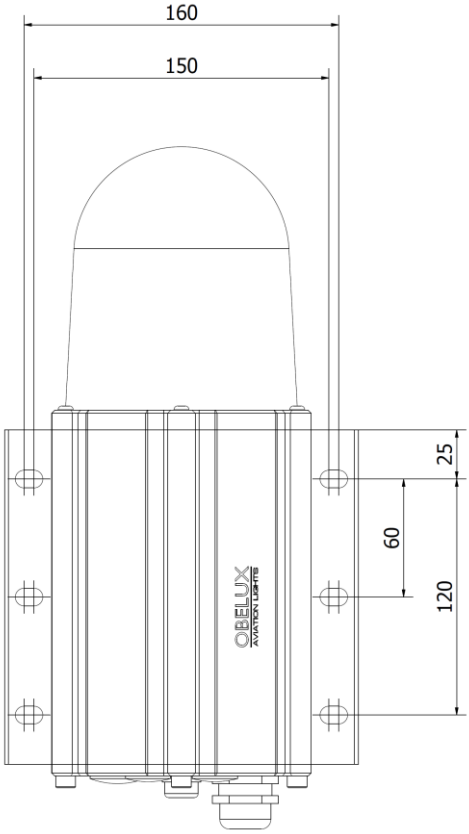
- 4x Input and 4x Output Interface
- 4-port Ethernet switch Interface (2x fiber SC multimode Female, 2x Ethernet copper RJ-45)
- 1-port Ethernet Interface (1x Ethernet copper RJ-45)
- 10-year warranty

Optional Controllers

- CP Series (Ethernet TCP/IP and RS-485 ModBus, AC or DC)
- CP-M1 Series (RS-485 ModBus, AC or DC)

Mechanical Characteristics

- Anodized, marine grade aluminum body and end parts
- AISI 316 acid-proof stainless-steel screws
- Glass dome
- Degree of protection IP66
- Operating temperature range -40...+55 °C
- Storage temperature range -40...+55 °C
- Height 347 mm, width 160 mm
- Weight 4,3 kg (without mounting set)
- Easy to chain via Data cable and via Power cable (no need for junction box)
- 2 x M25 (6-17 mm) cable glands and 2 x M20 (6-12 mm) cable glands



Order code	Output 2000 / 200 cd	ICAO	Operating voltage	Nominal voltage	GPS	IR	Heater (CCV)	Photocell	Alarm Relay	RS-485 ModBus
MI-ICAO-AC-2KR-IR-XX	2 000 cd	Type B/C	100-240VAC		Yes	Yes	Yes	Yes	Yes	Yes
MI-ICAO-DC1224-2KR-IR-XX	2 000 cd	Type B/C	10-30VDC	12/24VDC	Yes	Yes	Yes	Yes	Yes	Yes
MI-ICAO-DC2448-2KR-IR-XX	2 000 cd	Type B/C	20-60VDC	48VDC	Yes	Yes	Yes	Yes	Yes	Yes
MI-ICAO-AC-2KR-IR-E1-XX	2 000 cd	Type B/C (*)	100-240VAC		Yes	Yes	Yes	Yes	Yes	Yes
MI-ICAO-DC1224-2KR-IR-E1-XX	2 000 cd	Type B/C (*)	10-30VDC	12/24VDC	Yes	Yes	Yes	Yes	Yes	Yes
MI-ICAO-DC2448-2KR-IR-E1-XX	2 000 cd	Type B/C (*)	20-60VDC	48VDC	Yes	Yes	Yes	Yes	Yes	Yes

XX[-10]:
{ } = Without any factory-installed option
IO = Including 4 x Input and 4 x Output Interface
EF = Including Ethernet Switch, 2 x fiber SC multimode Female, 2 x copper RJ45
E = Including 1 x Ethernet copper RJ45
10 = 10-year warranty
(*) MI-ICAO-AC-2KR-IR-E1-XX and MI-ICAO-DC-2KR-IR-E1-XX product variants fulfil also the -1° and -10° vertical elevation angles maximum intensities
Example: The XX shall be replaced with additional function, i.e. MI-ICAO-AC-2KR-IR-IO

Addressing the vertical downwards light impact

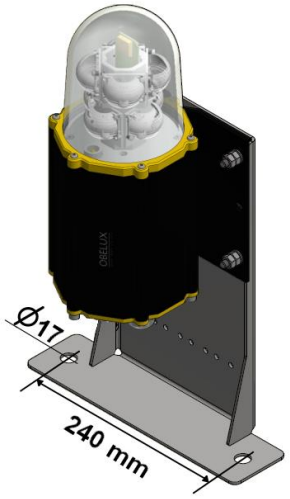
By implementing the recommendation below we attenuate the vertical downwards light to a level causing only negligible visual impact. This is the reason why the recommendation was made.

ICAO International Standards and Recommended Practices: Aerodromes Annex 14 Volume 1, 8th Edition, July 2018, Chapter 6: Table 6-3. Light distribution for medium- and high-intensity obstacle lights according to benchmark intensities of Table 6-1

MI-ICAO-AC-2KR-IR-**E1**-XX and MI-ICAO-DC-2KR-IR-**E1**-XX product variants fulfil also the -1° and -10° vertical elevation angles maximum intensity expressed in candela as marked in red in the table below. For flashing lights, the intensity is read into effective intensity, as determined in accordance with the Aerodrome Design Manual (Doc 9157), Part 4.

Benchmark intensity	Minimum requirements					Recommendations				
	Vertical elevation angle (b)			Vertical beam spread (c)		Vertical elevation angle (b)			Vertical beam spread (c)	
	0°		-1°			0°	-1°	-10°		
	Minimum average intensity (a)	Minimum intensity (a)	Minimum intensity (a)	Minimum beam spread	Intensity (a)	Maximum intensity (a)	Maximum intensity (a)	Maximum intensity (a)	Maximum beam spread	Intensity (a)
2 000	2 000	1 500	750	3°	750	2 500	1 125	75	N/A	N/A

Available mounting set options



Obelux MS-MI-H01 and MS-MI-H02
Flat surface horizontal mounting sets
These mounting sets include:

- 1 x Mounting Bracket
- 4 x M8 x 30 A4 DIN933 Screws
- 4 x M8 A4 DIN125 Washers
- 8 x M8 A4 DIN934 Nuts

All fasteners are AISI316 acid-proof stainless steel.

- **Order Code MS-MI-H01** (Mounting Bracket as AISI304 stainless steel)
- **Order Code MS-MI-H02** (Mounting Bracket as AISI316 acid-proof stainless steel)

Obelux MS-MI-V01
Vertical pipe mounting set
pipe min diameter 40 mm, max diameter 150 mm
This mounting set includes:

- 2 x M8 U-bolt
- 8 x M8 A4 DIN934 Nuts
- 4 x M8 A4 DIN125 Washers

All parts are AISI316 acid-proof stainless steel.

- **Order Code MS-MI-V01**