

DATASHEET

LIR Low-intensity IR Obstruction Lights

ICAO Low-intensity Type A 10cd, Type B 32cd and Type E 32cd
Low-intensity 50cd
FAA L-810
Infrared 850nm

OBELUX
AVIATION LIGHTS

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Optical characteristics

- ▶ 10cd fixed or flashing
- ▶ 32cd fixed or flashing
- ▶ 50cd fixed or flashing
- ▶ Colour aviation RED
- ▶ Horizontal beam 360°
- ▶ Vertical beam >10°
- ▶ Infrared 850nm (>25 mW/sr)

Specifications met

ICAO International Standards and Recommended Practices:
Aerodromes Annex 14 Volume 1,
7th Edition, July 2016, Chapter 6:
Low-intensity Type A
Low-intensity Type B
Low-intensity Type E

FAA Advisory Circular (9/28/2016)
AC 150/5345-43H:
L-810
L-810 (F)

Finnish Civil Aviation Authority, TraFi
(FIN)

Transport Styrelsen TSFS 2016:95
(SWE)

Luftfartstilsynet FOR-2014-07-15-
980 (NOR)

Ministerie van Infrastructuur en
Milieu (lage intensiteit), 30.9.2016
(NLD)

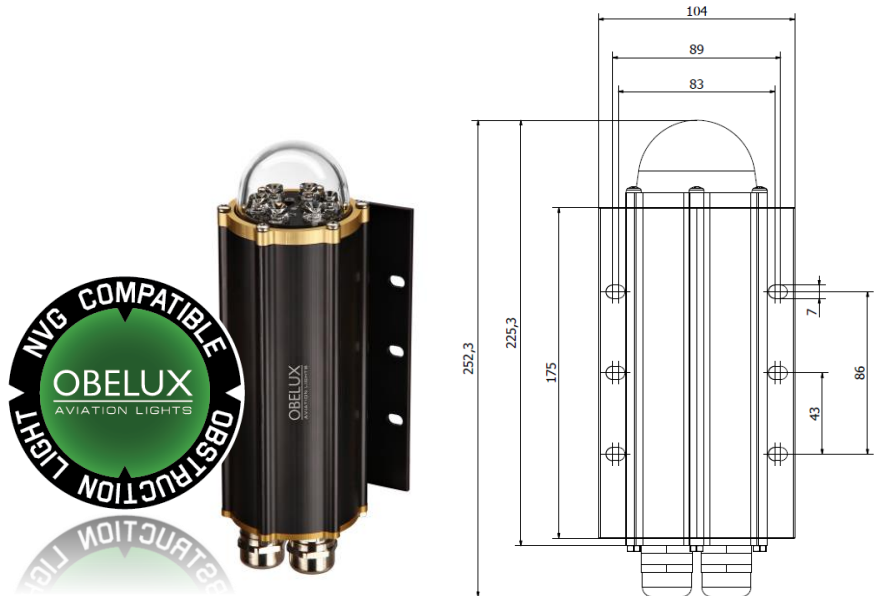


Photo only for illustration. Dimensions do not apply for LIR-024-F version.

LIR Low-intensity IR Obstruction Lights

LED Aviation Obstruction Lights

Obelux low-intensity light incorporates infrared which makes it completely Night Vision Goggle (NVG) compatible obstruction light. The light is designed for marking tall structures such as wind turbines, chimneys, masts, and towers. The product can offer unique features such as fault monitoring, photocell and switcher incorporated in the light. Lights can be connected to Obelux aviation light system through ModBUS serial lines.

Key Features

- ▶ Based on LED-technology
- ▶ Low-intensity RED fixed and flashing light
- ▶ NVG compliant infrared (IR) light
- ▶ Incorporated photocell for Day/Night switching available
- ▶ Both stand-alone (incorporated alarm signal) and ModBUS operations available
- ▶ Extremely low power consumption
- ▶ Provides long maintenance-free operating time
- ▶ 5-year warranty

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Electrical Characteristics

- ▶ ACW- models, wide AC voltage range:
Nominal 100...240V_{AC}, Nominal 50 ... 60Hz
- ▶ DCW- models, wide DC voltage range:
Maximum 10...60V_{DC}
- ▶ Overvoltage protection
- ▶ Day/Night switch function available
- ▶ Flash rates: 30fpm (L-810 F), other fpm available
- ▶ Alarm relay function available
- ▶ ModBUS (RS-485) operation function available
- ▶ Cold climate versions (CCV) available from all models (7W heater)

Mechanical Characteristics

- ▶ Anodized, marine grade aluminium body and end parts
- ▶ AISI316 acid-proof stainless-steel screws
- ▶ Glass cover, degree of protection IP65
- ▶ Operating temperature range -40...+55 °C
- ▶ Height 255 mm, diameter 104 mm
- ▶ Weight 1,3 kg (without mounting set)
- ▶ Terminal block for 1.5 ...4mm² wires

Mounting Set Options

- ▶ MS-HV80
- ▶ MS-EV60
- ▶ MS-EV100
- ▶ MS-EV150
- ▶ MS-DEV60
- ▶ MS-DEV100
- ▶ MS-RW
- ▶ MS-LVU
- ▶ MS-N1B
- ▶ MS-WT5

Order code	ICAO / FAA	Output	Op. volt.	Power cons.	Alarm Relay	ModBUS	Packing dimensions
LIR-024-F	-	IR	20-40VDC	<5 W (@33V)	No	No	280x130x100, 1,5kg
LIR-DCW-F	-	IR	10-60VDC	1.5 W	No	No	280x130x100, 1,5kg
LIR-ACW-F	-	IR	100-240VAC	4 VA	No	No	280x130x100, 1,5kg
LIR-DCW-A	-	IR	10-60VDC	2 W	Yes	No	280x130x100, 1,5kg
LIR-ACW-A	-	IR	100-240VAC	4.5 VA	Yes	No	280x130x100, 1,5kg
LIR-DCW-I	-	IR	10-60VDC	2 W	No	Yes	280x130x100, 1,5kg
LIR-ACW-I	-	IR	100-240VAC	5 VA	No	Yes	280x130x100, 1,5kg
LIR10-DCW-F	Type A	10cd+IR	10-60VDC	2 W	No	No	280x130x100, 1,5kg
LIR10-ACW-F	Type A	10cd+IR	100-240VAC	5 VA	No	No	280x130x100, 1,5kg
LIR10-DCW-A	Type A	10cd+IR	10-60VDC	3 W	Yes	No	280x130x100, 1,5kg
LIR10-ACW-A	Type A	10cd+IR	100-240VAC	5.5 VA	Yes	No	280x130x100, 1,5kg
LIR10-DCW-I	Type A	10cd+IR	10-60VDC	3 W	No	Yes	280x130x100, 1,5kg
LIR10-ACW-I	Type A	10cd+IR	100-240VAC	6 VA	No	Yes	280x130x100, 1,5kg
LIR32-DCW-F	Type B, L-810	32cd+IR	10-60VDC	3 W	No	No	280x130x100, 1,5kg
LIR32-ACW-F	Type B, L-810	32cd+IR	100-240VAC	6 VA	No	No	280x130x100, 1,5kg
LIR32-DCW-A	Type B/E, L-810	32cd+IR	10-60VDC	4 W	Yes	No	280x130x100, 1,5kg
LIR32-ACW-A	Type B/E, L-810	32cd+IR	100-240VAC	7 VA	Yes	No	280x130x100, 1,5kg
LIR32-DCW-I	Type B/E, L-810	32cd+IR	10-60VDC	4 W	No	Yes	280x130x100, 1,5kg
LIR32-ACW-I	Type B/E, L-810	32cd+IR	100-240VAC	7.5 VA	No	Yes	280x130x100, 1,5kg
LIR50-DCW-F	NLD	50cd+IR	10-60VDC	5 W	No	No	280x130x100, 1,5kg
LIR50-ACW-F	NLD	50cd+IR	100-240VAC	7.5 VA	No	No	280x130x100, 1,5kg
LIR50-DCW-A	NLD	50cd+IR	10-60VDC	5 W	Yes	No	280x130x100, 1,5kg
LIR50-ACW-A	NLD	50cd+IR	100-240VAC	8.5 VA	Yes	No	280x130x100, 1,5kg
LIR50-DCW-I	NLD	50cd+IR	10-60VDC	5 W	No	Yes	280x130x100, 1,5kg
LIR50-ACW-I	NLD	50cd+IR	100-240VAC	9 VA	No	Yes	280x130x100, 1,5kg

Model with CCV Cold Climate Version (7W heater): LIRxx-xxx-H-x

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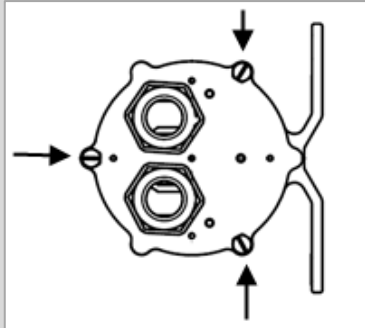
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Installation specifications

- ▶ Cable gland M25
- ▶ Cable diameter 11 to 17 mm (includes cable gland seal 6-13mm)
- ▶ Wire diameter max. 6 mm²
- ▶ Recommended cable 3x1.5 mm² or 3x2.5 mm²

Options

- ▶ CGS-20 smaller cable glands set (includes 2pcs M20 cable glands with M25-M20 adapters for 7-13 mm cables)



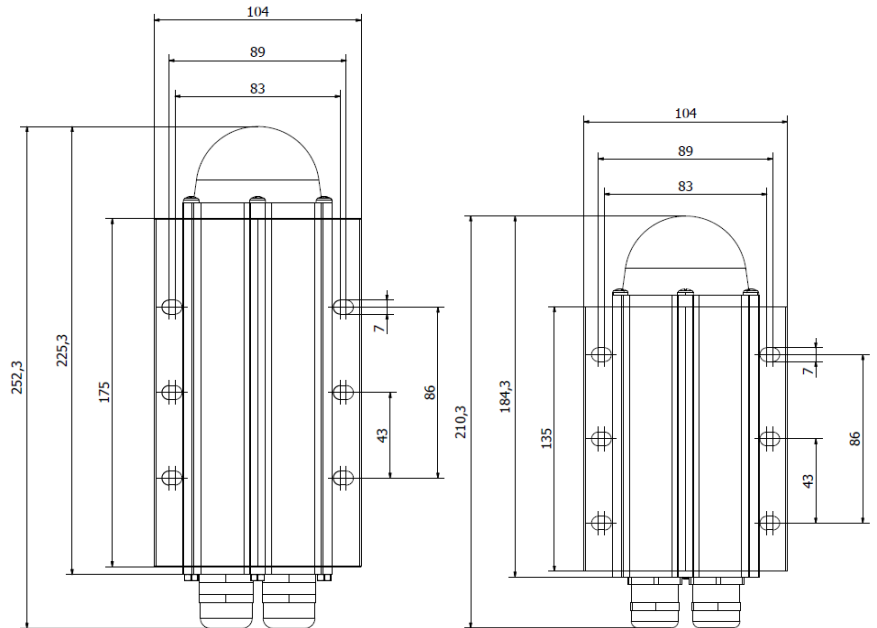
1. Bottom plate screws



2. Bottom plate slide open

Installation instructions

Open the three bottom plate screws. Bottom plate and the main circuit board slides out. Route power and data cables using cable gland(s) on the bottom side of light unit. Connect the cable wires securely to appropriate terminal block connectors. Slide the bottom plate properly in its place and securely tighten all screws. Make sure that all unused glands or gland holes are plugged shut.



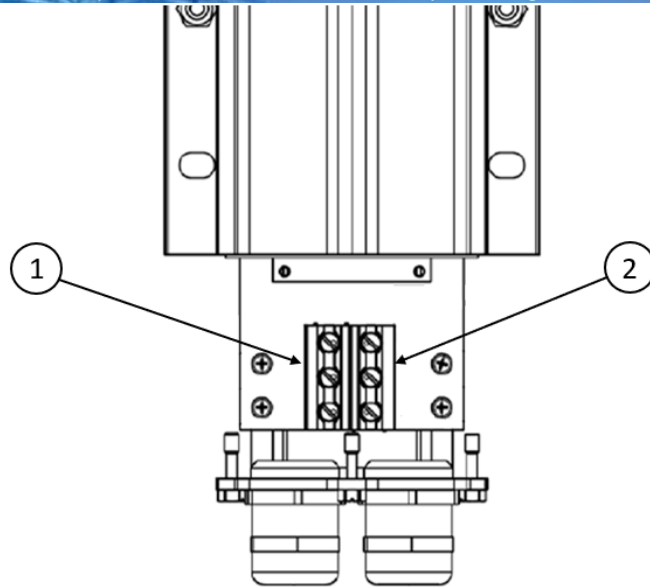
All other models

LIR-024-F version

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ACW-F, DCW-F and -024-F

1 Power input

	Mark	Description	Information
-ACW	L	Live	Colour typically brown.
	N	Neutral	Colour typically blue.
	PE	Protective earth	Colour typically yellow/green
-DCW	+	Positive	Power supply positive
	-	Negative	Power supply negative
	PE	Protective earth	Protective earth
-024	+	Positive	Power supply positive
	-	Negative	Power supply negative
	PE	Protective earth	Protective earth

Tighten the connector screws using flat-head (straight) screwdriver.

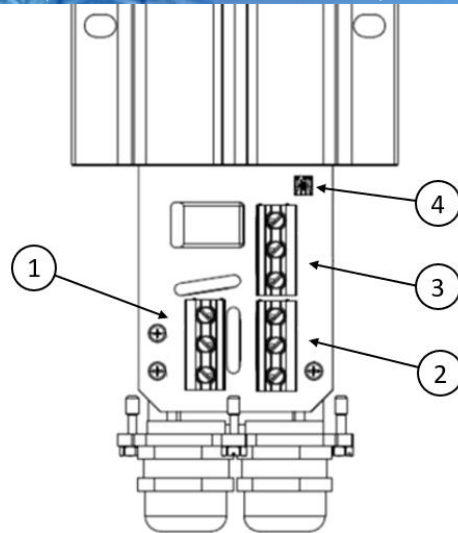
2 Power output

	Mark	Description	Information
-ACW	L	Live	Colour typically brown.
	N	Neutral	Colour typically blue.
	PE	Protective earth	Colour typically yellow/green
-DCW	+	Positive	Power supply positive
	-	Negative	Power supply negative
	PE	Protective earth	Protective earth
-024	+	Positive	Power supply positive
	-	Negative	Power supply negative
	PE	Protective earth	Protective earth

Tighten connectors securely using flat-head (straight) screwdriver.

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ACW-A and DCW-A

1 Power input

	Mark	Description	Information
-ACW	L	Live	Colour typically brown.
	N	Neutral	Colour typically blue.
	PE	Protective earth	Colour typically yellow/green
-DCW	+	Positive	Power supply positive
	-	Negative	Power supply negative
	PE	Protective earth	Protective earth

Tighten the connector screws using flat-head (straight) screwdriver.

2 Power output

	Mark	Description	Information
-ACW	L	Live	Colour typically brown.
	N	Neutral	Colour typically blue.
	PE	Protective earth	Colour typically yellow/green
-DCW	+	Positive	Power supply positive
	-	Negative	Power supply negative
	PE	Protective earth	Protective earth

Tighten connectors securely using flat-head (straight) screwdriver.

3 Alarm relay

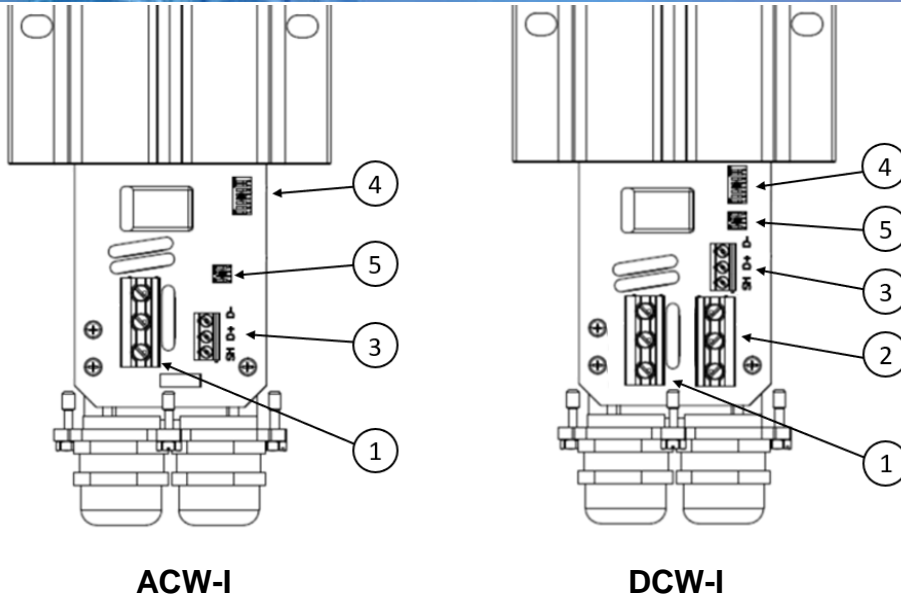
Mark	Description	Information
NO	Normally Open	In alarm, connected with COM
COM	Common	Common relay contact
NC	Normally Connected	During normal operation, connected with COM

Tighten connectors securely using flat-head (straight) screwdriver.

4 Configuration DIP switches

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1 Power input

	Mark	Description	Information
-ACW	L	Live	Colour typically brown
	N	Neutral	Colour typically blue
	PE	Protective earth	Colour typically yellow/green
-DCW	+	Positive	Power supply positive
	-	Negative	Power supply negative
	PE	Protective earth	Protective earth

Tighten the connector screws using flat-head (straight) screwdriver.

2 Power output (only DCW version)

Mark	Description	Information
+	Positive	Power supply positive
-	Negative	Power supply negative
PE	Protective earth	Protective earth

Tighten the connector screws using flat-head (straight) screwdriver.

3 RS485 input

Mark	Description	Information
D+	Data +	RS485 non-inverting pin
D-	Data -	RS485 inverting pin
SH	Shield	Shield

The RS-485 network (Modbus) input

4 Configuration DIP switches

5 RS485 termination DIP switch (DIP4)

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Configuring Obelux LIR Series

Basic model (-F version)

No DIP configuration is needed.

Stand-alone model (-A version)

Configuration DIP switches 1-4 are used to control the photocell mode (enabled/disabled), the threshold values, and the flashing settings.

The factory default setting is all switches OFF (steady-burning mode without photocell control). With the photocell operation enabled, the obstruction light turns on when the ambient light level has dropped below the selected level. The light turns off when the ambient light level has exceeded the selected value. The turn-off and turn-on times are approx. 3 min.

DIP Switch		Operating mode (Photocell)
1	2	
OFF	OFF	Photocell disabled
ON	OFF	200 lx
OFF	ON	400 lx
ON	ON	1600 lx

DIP Switch		Flash rate
3	4	
OFF	OFF	Steady-burning i.e. fixed
ON	OFF	30 flashes per minute
OFF	ON	40 flashes per minute
ON	ON	60 flashes per minute

ModBUS model (-I version)

Turn on DIP 8 to configure the light in to Modbus (RS-485) operation. Configuration DIP switches 1-4 are used to give the light RS485 bus address. Duplicate addresses on the same bus are not allowed.

DIP switch				Modbus Address
1	2	3	4	
on	off	off	off	Address 01
off	on	off	off	Address 02
on	on	off	off	Address 03
off	off	on	off	Address 04
on	off	on	off	Address 05
off	on	on	off	Address 06
on	on	on	off	Address 07
off	off	off	on	Address 08
on	off	off	on	Address 09
off	on	off	on	Address 10
on	on	off	on	Address 11
off	off	on	on	Address 12
on	off	on	on	Address 13
off	on	on	on	Address 14
on	on	on	on	Address 15

RS-485 bus should be terminated with on-board 120ohm resistors on both ends of the communications bus. Turn on DIP4 on from the termination DIP switches.

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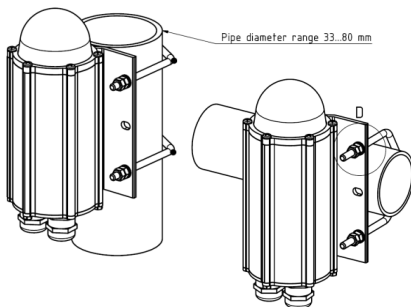
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Available mounting sets as an option



Obelux MS-HV80

Mounting set for 33-80 mm vertical or horizontal pipe.

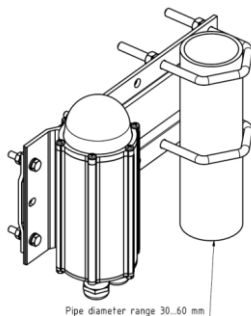
This mounting set includes:

- ▶ 2 pcs M6 U-bolt
- ▶ 8 pcs M6 hex nut
- ▶ 4 pcs 6/12 mm washer

All parts are AISI316 acid-proof stainless steel.

More detailed mechanical data: see MS-HV80 datasheet

▶ Order Code MS-HV80



Obelux MS-EV60

Mounting set with extension plate for 30-60 mm vertical pipe installation.

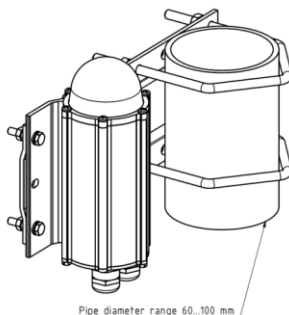
This mounting set includes:

- ▶ 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 pcs extension plate

Extension plate marine grade anodized aluminium, other parts AISI316 acid-proof stainless steel.

More detailed mechanical data: see MS-EV60 datasheet

▶ Order Code: MS-EV60



Obelux MS-EV100

Mounting set with extension plate for 60-100 mm vertical pipe installation.

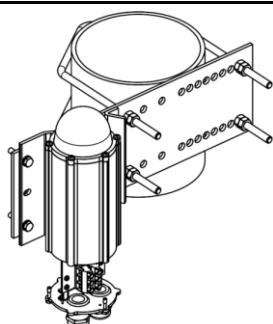
This mounting set includes:

- ▶ 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 pcs extension plate

Extension plate marine grade anodized aluminium, other parts AISI316 acid-proof stainless steel.

More detailed mechanical data: see MS-EV100 datasheet

▶ Order Code: MS-EV100



Obelux MS-EV150

Mounting set with extension plate for 100-150 mm 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 pcs extension plate

Extension plate hot dipped galvanised steel, other parts AISI316 acid-proof stainless steel.

More detailed mechanical data: see MS-EV150 datasheet

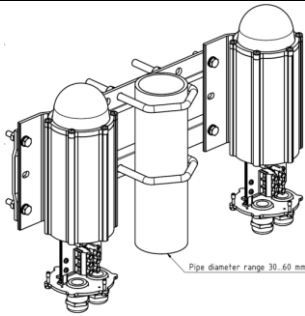
▶ Order Code: MS-EV150

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**Obelux MS-DEV60**

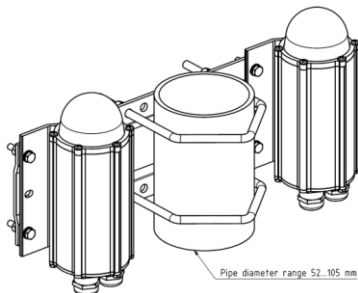
Double mounting set with extension plate for 30-60 mm vertical pipe installation. Mounting set include:

- ▶ 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 acid-proof stainless steel.

More detailed mechanical data: see MS-DEV60 datasheet

▶ **Order Code: MS-DEV60**

**Obelux MS-DEV100**

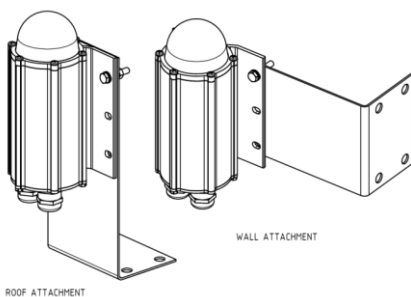
Double mounting set with extension plate for 60-100 mm vertical pipe installation. Mounting set include:

- ▶ 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 acid-proof stainless steel.

More detailed mechanical data: see MS-DEV100 datasheet

▶ **Order Code: MS-DEV100**

**Obelux MS-RW**

Mounting set for horizontal plate or wall installation.

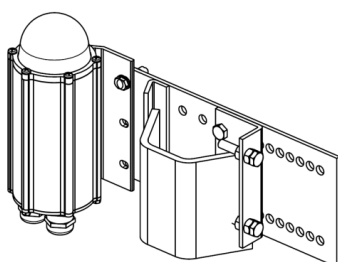
Mounting set includes:

- ▶ 4 pcs M6x30 bolt, 8 pcs M6 hex nut, 4 pcs 6/12 washer
- ▶ 1 pcs L-shape 2 mm plate

All parts AISI 316 acid-proof stainless steel.

More detailed mechanical data: see MS-RW datasheet

▶ **Order Code: MS-RW**

**Obelux MS-LVU**

Mounting set for L and V -shape profiles

Mounting set includes:

- ▶ 1 set accessories for light unit fitting to plate
- ▶ 1 pcs extension plate with adjusting plate and accessories

Extension plate hot dip galvanized steel, other parts AISI316 acid-proof stainless steel.

More detailed mechanical data: see MS-LVU datasheet

▶ **Order Code: MS-LVU** (with galvanized extension plate)
 ▶ **Order Code: MS-LVA** (with AISI316 extension plate)

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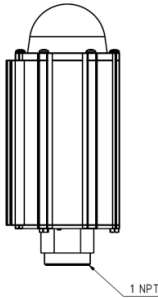
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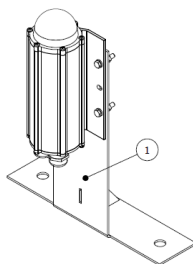
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Obelux MS-N1B :
Mounting set for 1" NPT at bottom

More detailed mechanical dimensions: see MS-N1B datasheet.

► Order Code: MS-N1B



Obelux MS-WT5:
Mounting set for LI series

Mounting holes 2 x Ø17, 240mm.

► Order Code: MS-WT5