

obsta[®]

RELIABILITY
IN OBSTRUCTION
LIGHTING

EDITION 9



POWERLINES
TELECOM
BROADCASTING TOWERS
CHIMNEY
AIRPORT
WINDTURBINES
CONSTRUCTION





RELIABILITY IN OBSTRUCTION LIGHTING



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Company history

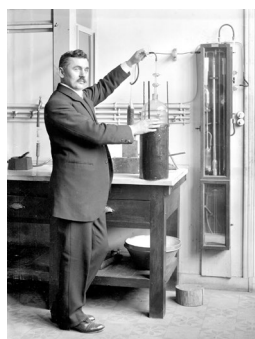
OBSTA, a subsidiary of CITEL group (www.citel.fr) is part of an industrial group that engineers, manufactures and sells obstruction lights for transmission lines, telecom, broadcasting towers and all kind of obstacle to air navigation since more than 30 years. Our obstruction lights are manufactured by us compliant with ICAO annex 14 chapter 6 (International Civil Aviation Organization) recommendations and the FAA (Federal Aviation Administration).

OBSTA has manufacturing facilities in France and has sales offices located in France, Germany, USA, and China through Citel.



A long history

Before joining Citel in the years 90, Obsta was part of the company Claude that was manufacturing all kind of lamps. This company was created by Georges Claude (September 24th 1870 – May 23th 1960) a French physicist and chemist :



1902 : Extraction of rare gas from the air (neon, argon, xenon..) and creation of the company Air liquide

1910 : Invention of the first modern patented discharge lamp tube and creation of Claude company manufacturing all kind of discharge and incandescence lights

1960 : Invention of the first balisors for transmission lines

1992 : Bought by Citel manufacturing gas tube and surge protection

2003 : New led NAVILITE obstruction lights red fixed

2008 : New obstacle light with linear optic for discharge and LED lights.

2012 : New medium and high intensity LED lights.

Specialist in obstruction lighting

Over the years, three large product families (neon xenon and led type) have been developed in the respect of the most severe standards, requested by our customers. OBSTA lights are designed in the respect of the latest international standards that are ICAO and FAA. They constitute a complete range of low intensity or L-810, medium intensity or L-865/L-864 and also high intensity obstruction lights, ideal for broadcasting towers, telecom mast, transmission lines, stacks and wind turbines.

- Cold neon discharge lights,
- pure cold neon discharge 5 and 13 turns OBSTA® HI STI & STI,
- 33 & 49 turns BALISOR® (conductor warning lights) red fixed obstruction lights.



Led NAVILITE® red fixed obstruction lights (low intensity and L-810) since 2003 The NAVILITE series is dedicated to night only obstruction lights especially for telecom mast, buildings close to airports and all kind of obstacle below 45 meters high. Completely molded with 64 leds divided in 16 independent led circuits, they are ideal for all kind of obstacle

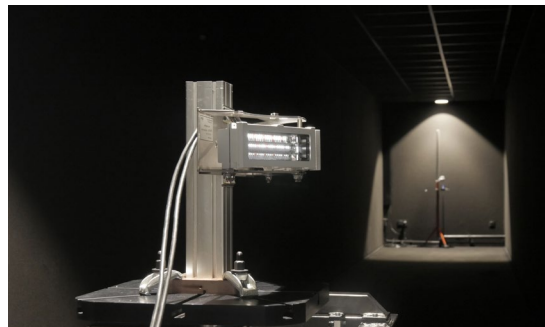


- Led and Xenon OBSTAFLASH : OBSTAFLASH white and red flashing for high structures medium intensity type A and B/C, L-865/L-864, L-865, L-864 and L-810.
- High intensity type A and B

Test facilities

In order to test its products internally for standards compliance and to evolve toward greater reliability OBSTA has several test sites (France, USA) equipped with :


- Photometric band with visible and infrared capability
- 1.2/50-8/20 μ s hybrid wave generators up to 20 kV/10 kA
- HT digital Oscilloscope fast
- Material for test environment (damp heat, climate, shock)



An international company

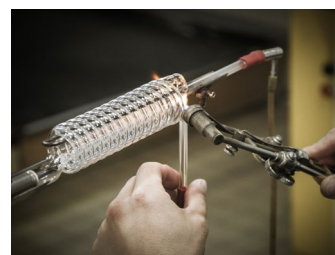
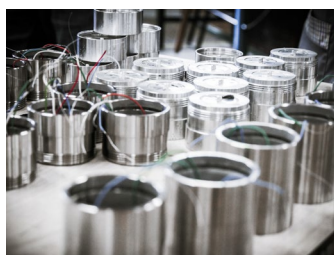
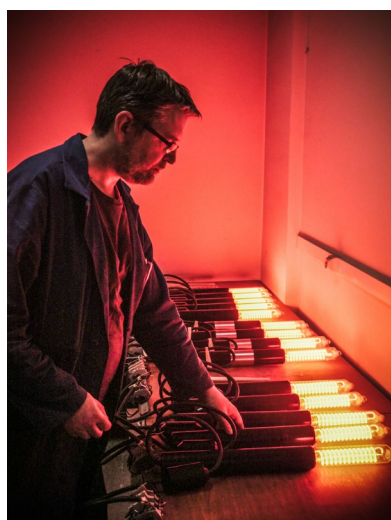
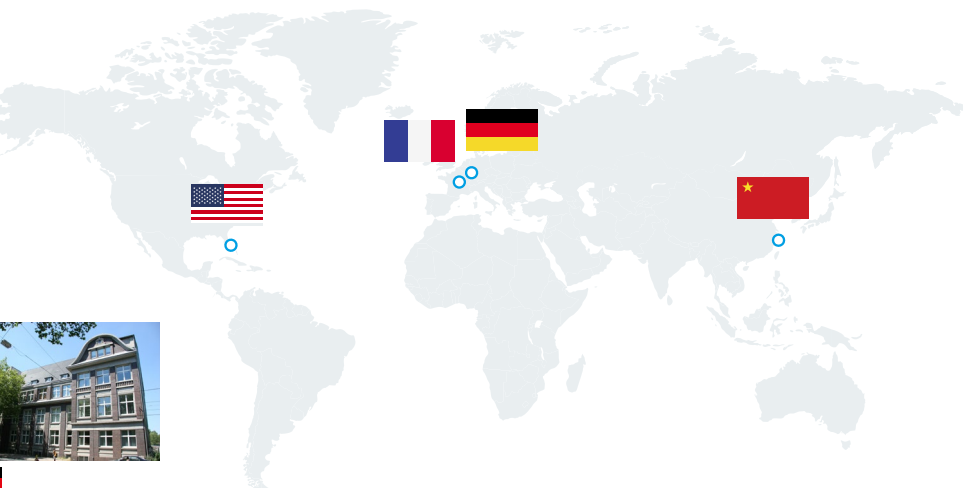
Obsta is part of CITEL group with international commercial subsidiaries.




Sèvres -
Head Office - France and
Export Sales Office




Reims -
Production plant
and logistics platform





Any object which could represent a hazard for low-flying aircraft must be marked by beacon lights. The ICAO (International Civil Aviation Organization - appendix 14, Chapter 6) and the FAA (Federal Aviation Administration - USA) lay down internationally-applicable rules on the characteristics of the beacons and their installation.

Some points of the regulations (depending on the type of obstacles which must be marked), and the corresponding installation rules, are given below.

Intensity	Color	Type		flashes per minute	Night (Cd)	Day (Cd)	Twilight (Cd)
		ICAO	FAA				
LOW	Red	B	L-810	Steady or flashing with L-864	≥ 32.5	light OFF	
MEDIUM	Red	B	L-864	30 fpm	2,000 ± 25%	light OFF	
	Dual Color	A & B	L-865 / L-864	40 fpm (white) 30 fpm (red)	2,000 ± 25%	20,000 ± 25%*	20,000 ± 25%*
	White	A	L-865	40 fpm	2,000 ± 25%	20,000 ± 25%*	20,000 ± 25%*
HIGH	White	A	L-856	40 Fpm	2,000 ± 25%	270,000 ± 25%*	20,000 ± 25%*

* : FAA requires a flash duration of 100ms max with Blondel-Rey formula for effective intensity.
NVG compatible for L-810 and L-864 lights

Extract from annex 14 ICAO

Extract from table 6-3. Characteristics of obstacle lights

Position of the obstruction lights

6.3.11 One or more low-, medium- or high intensity obstacle lights shall be located as close as practicable to the top of the object. The top lights shall be so arranged as to at least indicate the points or edges of the object highest in relation to the obstacle limitation surface.

6.3.12 **Recommendation** - In the case of chimney or other structure like function, the top lights should be placed sufficiently below the top so as to minimize contamination by smoke etc...

6.3.14 In the case of an extensive object or of a group of closely spaced objects, top lights shall be displayed at least on the points or edges of the objects highest in relation to the obstacle limitation surface, so as to indicate the general definition and the extent of the objects. If two or more edges are of the same height, the edge nearest the landing area shall be marked. Where low-intensity lights are used, they shall be spaced at longitudinal intervals not exceeding 45 m (150ft). Where medium-intensity lights are used, these shall be spaced at longitudinal intervals not exceeding 900 m (2950ft)

6.3.15 **Recommendation** - When the obstacle limitation surface concerned is sloping and the highest point above limitation surface is not the highest point of the object, additional obstacle lights should be placed on the highest point of the object.

6.3.22 The number and arrangement of low-, medium- or high-intensity obstacle lights at each level to be marked shall be such that the object is indicated from every angle in azimuth. Where a light is shielded in any direction by another part of the object, or by an adjacent object, additional lights shall be provided on that object to be lighted. If the shielded light does not contribute to the definition of the object to be lighted, it may be omitted.

In order to help you choosing the proper light you need, you will find below the most common configurations.
The recommendations and rules mentioned below **are only given for information based on the ICAO recommendations, and ICAO aerodrome design manual.**

Night time marking (Red only)

The night time marking is done with **red obstruction lights**:

- low intensity type A or B (L-810)
- and/or medium intensity type B (L-864)

Day time marking (White flashing only)

The day time marking is done with **white flashing obstruction lights**:

- medium intensity type A (L-865)
 - or high intensity type A or B (L-856, L-857)
- (For obstacle below 150 meters the use of white strobe flashing light during day time eliminate the need to paint the obstacle with red and white stripes).

Day and night time marking (White flashing or Dual Color)

The day and night time marking can be realized by using either:

- white medium intensity light working day and night
- dual color lights, white flashing during day time and red during night time

Obstruction light choices

ICAO	OBSTA designation	OBSTA part number	Compliance statement
Low intensity type A (red steady burning)	NAVILITE-SOL, OBSTA-STI-48V, OBSTA-STIF-12V, BALISOR 63KV to 500KV	all	ICAO compliant (7th Edition_July 2018) EASA (European Aviation Safety Agency)
Low intensity type B (red steady burning)	NAVILITE-48V, NAVILITE-24V, NAVILITE-12V, NAVILITE-230; NAVILITE-120-240		
Low intensity type B (red steady burning) + infrared (fixed or flashing)	Combi light NAVILITE-RI-48V		
Medium intensity type A (white flashing), type B (red flashing), type C (red steady burning) and dual color	Obstaflash medium intensity series		
High intensity type A (white flashing)	OFH-120	113735	Verified by Ministry of Transportation of Germany
Medium intensity type A + feu W rot	OF360-FW-240		

FAA & ICAO type		OBSTA designation	OBSTA part number (FAA)	Compliance statement
L-810	Low intensity type B	NAVILITE-FAA	113969IR	FAA (150-5345-43J) ETL certified + compliant with ICAO low intensity type B
L-865	Medium intensity type A (white flashing light)	Obstaflash OF360-WW-240-U; OFI360-WW-240-U; OFI120-WW-048-U; OFI120-WW-048/240-U; OFI120-WW-240-U; OFI-WW-048-U	113723U; 113723UI; 113711U; 113757U; 113713U; 113791U	FAA (150-5345-43J) L-865 ETL certified + compliant with ICAO medium intensity type A
L-864	Medium intensity type B (red flashing light)	Obstaflash OF360-R-240; OFI360-R-240; OFI120-R-048-U; OFI120-R-048/240-U; OFI120-R-240-U; OFI-R-048; OFC-RR-240; OFC-RR-048	113724; 113724I; 113710U; 113756U; 113714U; 113790; 113790RR-240; 113790RR-048	FAA (150-5345-43J) L-864 ETL certified + compliant with ICAO medium intensity type B
L-865/L-864	Dual color medium intensity type A and B	Obstaflash OF360-RW-240-U; OFI-RW-240-U; OFI120-RW-240-U; OFI120-RW-48/240-U; OFI120-RW-048-U; OFI360-RW-048-U	113725U; 113725UI; 113715U; 113758U; 113712U; 113792U	FAA (150-5345-43J) L-865/L-864 ETL certified + compliant with ICAO medium intensity type A & B
L-864 OFC	Medium intensity type B (red)	Combi lights OFC-RI-240; OFC-RI-048	113790RI-240; 113790RI-048	FAA (150-5345-43J) L-864 ETL certified + compliant with ICAO medium intensity type B
L-856	High intensity	Obstaflash OFH-120-WW-240-U	113780U	FAA (150-5345-43J) L-856 pending

Led NVG compatible obstruction lights

All our medium intensity or high intensity (red or dual color mode) are Night Vision Compatible as per FAA AC 150/5345-43J. Only our low intensity and L-810 remains available in 2 options: with or without infrared

Those energy-saving LED lights are providing years of operation and are maintenance-free. They are also NVG friendly : Aviation authorities such as FAA, CAR (Canadian Aviation Regulation), MOD (UK) and OFAC (Switzerland) have issued safety alerts warning that common LED obstruction lights pose a hazard to pilots using Night Vision Goggles (NVGs). This is due to the fact that NVGs typically use filters to block cockpit lighting from saturating the imaging system. This has the unintended effect of making LED obstruction lights invisible to pilots.

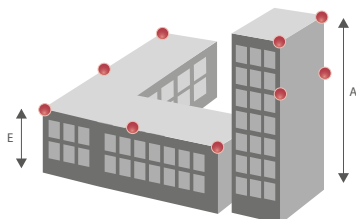
In response, Night Vision Goggles based on infrared technology provide pilots using night vision goggles unmatched visibility of airfield perimeters, buildings, wind turbines and towers. Our FAA led obstruction lights ensure that your structure remains visible to all pilots.



Night Vision Goggles compatible according to FAA & OFAC directive (Switzerland)



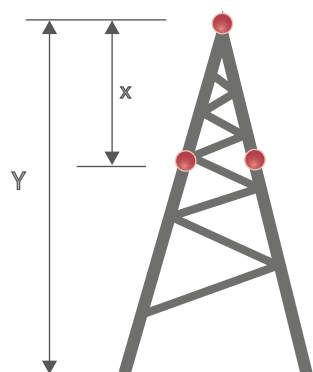
BUILDING (see diagram p 10-11)



Height	Night marking (red lights working at night only)	Day and Night marking (white flashing light for day mode and red lights for night mode)
Below 45m (150ft)	Low intensity lights type A on the perimeter of the building every 45 meters maximum	Low intensity type A on the perimeter of the building every 45 meters max. with medium intensity type A working during day time only
45m (150ft) and above	Medium intensity type B at the top with eventually intermediate levels of low intensity type B and medium intensity type B if the building is not masked by other construction	Dual color medium intensity type A+B (white during the day and red during the night) at the top with optional low intensity type B at intermediate levels if the building is not masked by other construction
In option: 150m (500ft) and above	Alternative: above a height of 150m (500ft) high intensity lights every 105m (350ft) maximum.	

Note : Intermediate levels are recommended only if there are higher than the top fo nearby buildings.

POLE / TOWER (see diagram p 12-13)

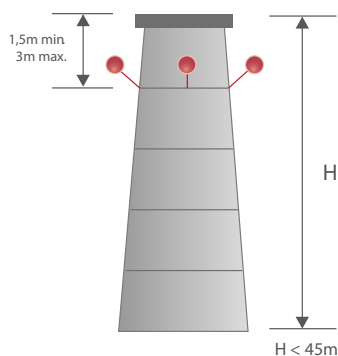


$$\text{Number of lights} = N = \frac{Y(m)}{45}$$

$$\text{Distance between lights} = X = \frac{Y}{N} < 45m$$

Height	Night marking (red lights working at night only)	Day and night marking (white flashing light for day mode and red lights for night mode)
Below 45m (150ft)	1 or 2 low intensity type A or B at the top (L-810)	1 or 2 white medium intensity type A (L-865) at the top of the pole with low intensity working at night
45m (150ft) and above	1 or 2 medium intensity type B at the top with intermediate levels of medium intensity type B every 105 meters max., with low intensity type B in between each level of medium intensity	1 or 2 dual color medium intensity type A+B at the top with intermediate levels of dual color medium intensity type A+B every 105m max., with low intensity type B in between each level of medium intensity.
In option: 150m (500ft) and above	High intensity type A at the top with intermediate lights every 105 m maximum working during day time only and red low intensity type B and medium intensity type B working at night only. White flashing lights type A can also work day and night.	

STACK (see diagram p 14-15)

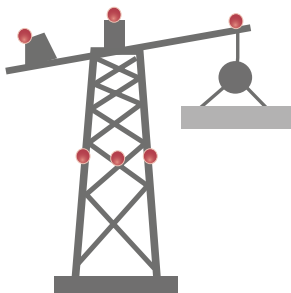


Height	Night marking (red lights working at night only)	Day and Night marking (white flashing light for day mode and red lights for night mode)
Below 45m (150ft)	3 low intensity type A below the top of the stack	3 low intensity type A working at night only and medium intensity type A working during daytime only. The lights should be below the top of the stack
45m (150ft) and above	3 medium intensity type B below the top of the stack with optional intermediate level of low intensity type B every 45 meters high around the stack	3 dual color medium intensity type A+B (white during the day and red during the night) below the top of the stack, with in option 3 or more low intensity type B at intermediate levels at the top of stack
In option: 150m (500ft) and above	Alternative: above a height of 150m (500ft) high intensity lights every 105m (350ft) maximum.	

Note : for stack with diameter between 6 and 30 meters, 4 lights per level are required. For stack with diameter between 30 and 60 meters, 6 lights are required per level. And for stack with diameter above 60 meters, 8 lights per level are required per level.

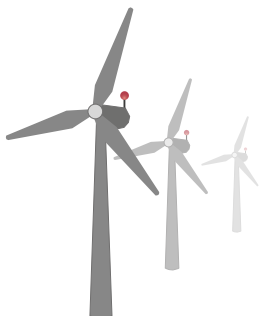


CRANE (see diagram p 16)



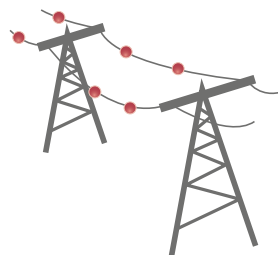
Height	Night marking only	Day marking
Below 45m (150ft)	Low intensity type A at the top of the crane-top and at each extremity of the jib and counter jib. 1 medium intensity type B (L-864) at the top of the crane-top.	1 medium intensity dual color at the top of the crane-top.
45m (150ft) and above		
105 m and above		

WIND TURBINE (see diagram p 17)



Night marking only	Day and night marking
1 or 2 Medium Intensity type B (L-864)	1 or 2 Medium Intensity dual color type A+B (L-865/L-864)

TRANSMISSION LINES (see diagram p 18)



Height	Night marking only		Day marking only
Poles	Same configuration than in the first case «pole and tower»	If it is not possible to install a light on the poles, 2 Balisors placed on each side of the pole at 10m (30ft) maximum and placed on the highest cable	Same configuration than in the first case «pole and tower»
High voltage cable	Balisors every 70m (230ft) near airport and every 105m (350ft) in other cases.		Warning spheres of 600mm diameter (2ft) every 30m (100ft)

In the case of an extended obstacle (wind turbine farm, cranes, etc...) the beacons need to be synchronized.
Beacons need to be backed up with a 12hour battery life in case of a loss of the main power line.

OBSTRUCTION LIGHTING FOR AIRPORT

Use case for an airport with building below 45 meters high except control tower higher than 45 meters



1 WHITE THE DAY / RED AT NIGHT



OBSTAFASH DUAL COLOR
Medium Intensity White & Red
L-865/L-864

2 ONLY AT NIGHT



NAVILITE 230 VAC
Low intensity
every 45 meters

or



neon HISTI 110 to 240 VAC
Low intensity
every 45 meters

or



NAVILITE FAA L810 IR
Low intensity
every 45 meters

OBSTRUCTION LIGHTING FOR BUILDINGS

Three typical configurations depending on height



1 OBSTAFLASH RED COMPACT
Medium Intensity Red only



2 OBSTAFLASH DUAL COLOR
Medium Intensity White & Red



3 OBSTAFLASH 120° or 180°
Medium Intensity White & Red



4 NAVILITE
Low Intensity Red



5 OBSTAFLASH HI
High Intensity White

>150m

5 TOP LEVEL

5 MID LEVEL

<150m

TOP LEVEL **1** OR **2**

INTERMEDIATE LEVEL **4**

MID LEVEL **3**

INTERMEDIATE LEVEL **4**

45m

Every 45 meters



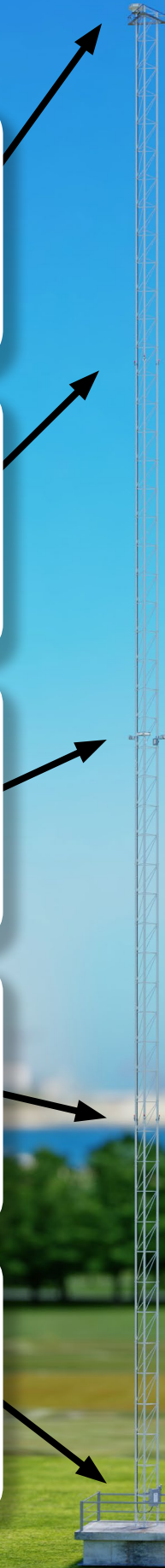
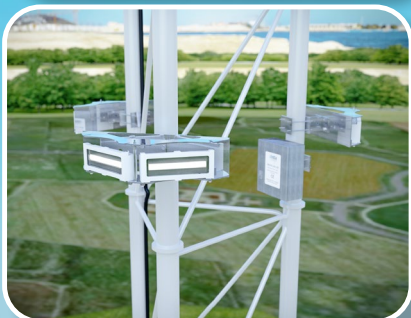
HELITE-G
Helipad light (TL0F)

OBSTRUCTION LIGHTING FOR TOWER

Towers from 105m to 150m

Day and night operation.

(The use of white flashing light during the day eliminates the need to paint the tower)

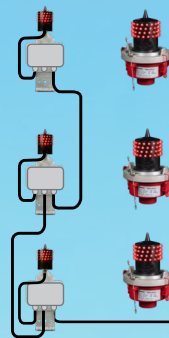


LED OBSTAFLASH 360
dual color medium
intensity L-865/L-864
at top level

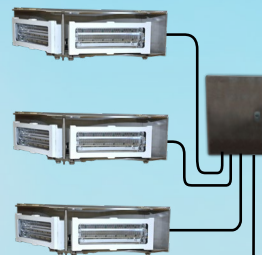
or FAA
fixture



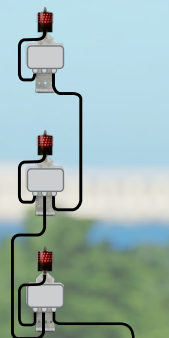
(or red only
for tower with
red & white
painted stripes)



3 NAVILITE low intensity type B
between the intermediate level
and top level.



3 LED OBSTAFLASH
120 dual color medium
intensity L-865/L-864
at intermediate level



3 NAVILITE low intensity type B
between the bottom and the
intermediate level.



110 to 240 VAC



110 to 240 VAC
power supply
and Photocell
at the bottom

110 to
240 VAC

OBSTRUCTION LIGHTING FOR TOWERS

Use cases for towers from 45m to above 105m

Night only operation

- 


1 OBSTAFLASH RED COMPACT
Medium Intensity Red only
- 


2 OBSTAFLASH 120° or 180°
Medium Intensity Red
- 


3 NAVILITE FAA
Low Intensity Red

UP TO 45M

3 MID LEVEL

105-150M

1 TOP LEVEL

3 INTERMEDIATE LEVEL

46-105M

1 TOP LEVEL

1 OR **2** MID LEVEL

3 MID LEVEL

3 INTERMEDIATE LEVEL

OBSTRUCTION LIGHTING FOR STACK

Stack without red & white stripes 45 to 105 meters high. Lights operating Day and night.

3 LED OBSTAFLASH120 dual color medium intensity
ICAO compliant and L-865 / L-864 FAA ETL verified
below the top to avoid the smoke to hide the lights

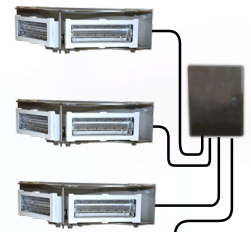
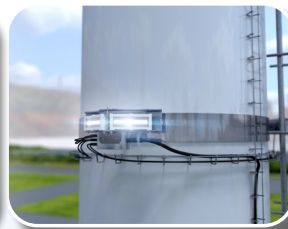


STAC

RED AT NIGHT



WHITE AT DAY



3 NAVILITE at mid level

RED FIXED AT NIGHT



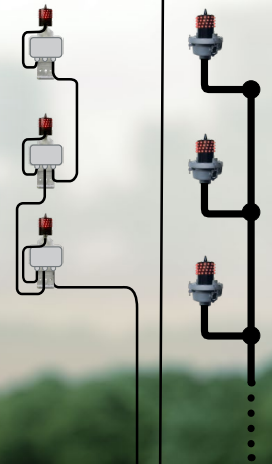
DAY OFF



ICAO
low intensity
type B

Or

FAA L-810
type with
NPT pipe



110-240 VAC power supply and Photocell
at the bottom with or without batteries



Photocell
north oriented



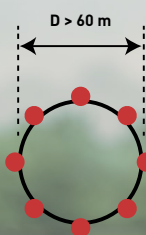
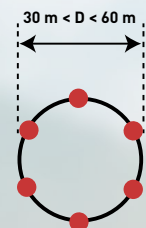
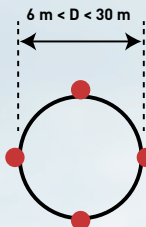
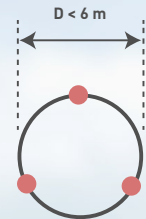
110 to 240 VAC



OBSTRUCTION LIGHTING FOR STACK

Painted stack (red & white stripes) 45 to 105 meters high, lights operating only at night.

Number of lights
per level depending
on the diameter
of the chimney



These configurations
can be modified if stack
are close to each other

3 LED OBSTAFLASH120 red medium intensity
ICAO compliant and L-864 FAA ETL certified
below the top to avoid the smoke to hide the lights



STAC

RED AT NIGHT

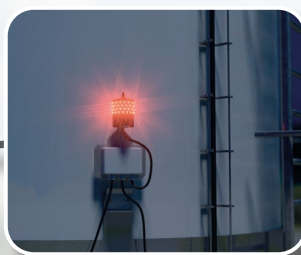


DAY OFF

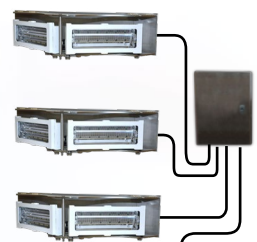


3 NAVILITE at mid level

RED FIXED AT NIGHT



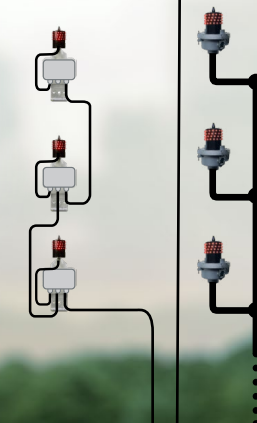
DAY OFF



ICAO
low intensity
type B

Or

FAA L-810
type with
NPT pipe



110-240 VAC power supply and Photocell
at the bottom with or without batteries



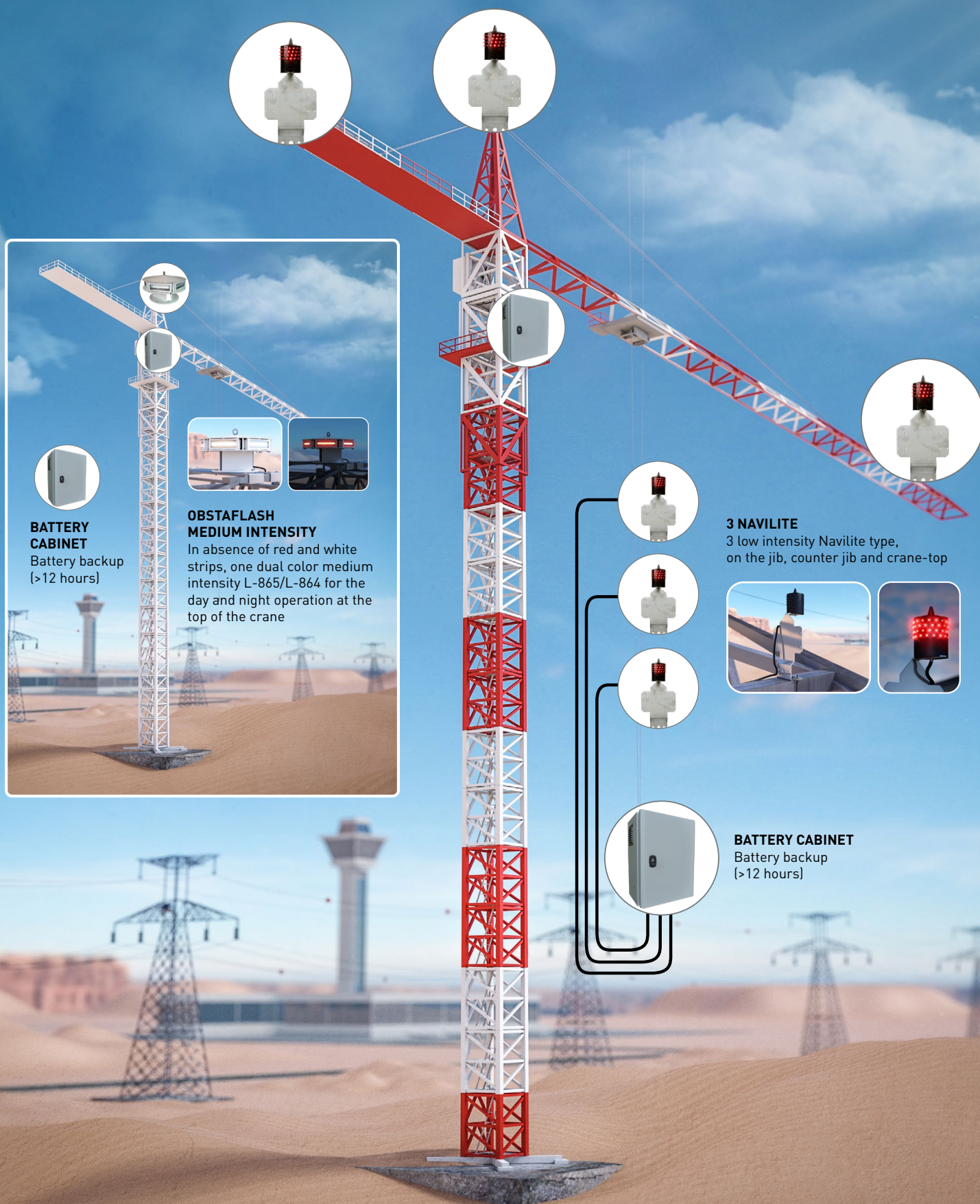
Photocell
north oriented



110 to 240 VAC

OBSTRUCTION LIGHTING FOR CRANE

Use case for crane with or without red and white strips.



OBSTRUCTION LIGHTING FOR WIND TURBINE

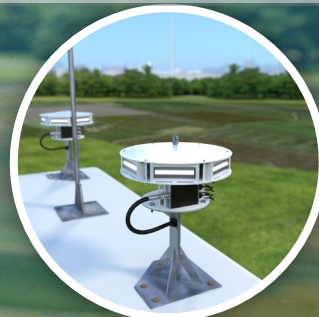
TOP LEVEL

Red compact medium intensity



Or

Dual color medium intensity



MID LEVEL

In option low intensity type E
3 Navilite



OBSTRUCTION LIGHTING FOR POWERLINE Day & night operation (Pylon >45m)

1

OFI

Medium Intensity White & Red at top level

White during daytime and red during night



- Type A & B compliant to ICAO, CAA and FAA L-865/ L-864 certified
- IP66 verified
- Easy installation with only captive parts
- 6 LED projectors in hard glass and aluminium
- 2 lights in one with 2 LED circuits in redundancy
- Surge protection included
- Optional GPS interface for synchronisation
- 50cm diameter x 30cm height - Weight: 14kg

OFC

Medium Intensity Red Only or Dual color at top level



or

- Type B & C compliant to ICAO, CAA and FAA L-864
- Self contained and compact solution
- 6 LED Optics in hard glass and aluminium cover (no plastic)
- IP66 verified
- Easy installation with only captive parts
- 2 lights in one with 2 LED circuits in redundancy
- Very low consumption : 3W @ 20 FPM (ICAO setting)
- Surge protection included
- Optional GPS interface for synchronisation
- Available with Infrared
- Dimensions: 20cmx20cmx20cm - Weight: 5 kg

2

NAVILITE (optional)

Low intensity Red at intermediate level

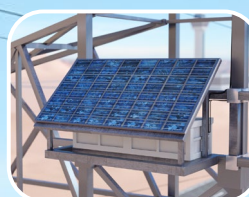


- Type A & B compliant to ICAO, CAA
- Very compact with one mounting screw
- 64 LED in redundancy, resin molded
- Beacon light not grounded (Class II)
- Fully waterproof (IP67)
- No corrosion
- Bird spike
- 6cm diameter x 10cm height - Weight: 370g

3

SOLAR KIT

Autonomous power supply



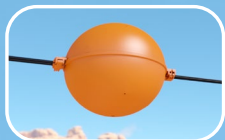
- Size calculated from localization and flash per minute
- Long life solar gel batteries
- Initial capacity with at list 6 days of autonomy
- Protection of the battery against deep discharges
- Surge protection
- Option GPS synchronization & 3G modem communication

4

> 45M

5 PLASTIC WARNING SPHERE 600MM

Every 30M on OPGW or conductor up to 132kV



- ICAO and CAA compliant
- Polyethylene, fast mounted per half
- EPDM clamps to not damaged the cable
- No need of armor rod unless specified
- 8 drainage holes to prevent water accumulation
- Available in red, white and orange aviation

6 ALUMINIUM WARNING SPHERES 600MM

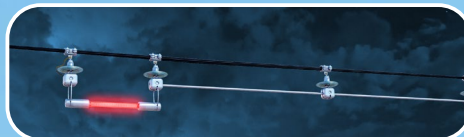
Every 30M on power cables up to 420kV and 250°C



- ICAO Compliant
- Fast mounting per half with latches
- Only 1 personne required for installation, only captive parts
- 8 drainage holes to prevent water accumulation
- Long durability in all climate conditions
- Available in white and red aviation

4 BALISOR - CONDUCTOR WARNING LIGHT

Night Time every 70M nearby airport, 105M otherwise



- Versions from 60KV to 550KV
- ICAO compliant Low Intensity Red steady-burning light
- Hard glass cold neon discharge tube
- OBSTA patented and manufactured in-house from 1938
- Self generation of energy in conductor
- No maintenance through decades
- Interference suppression included

7 BIRD-FLIGHT Diverter spiral or disk type



- Made with high impact PVC with UV protection
- Full unit or half available
- Low weight
- Quick and easy manual installation
- Positive grip on the conductor
- Long service life without deterioration
- Wind resistant
- Available in dark gray, yellow or red.

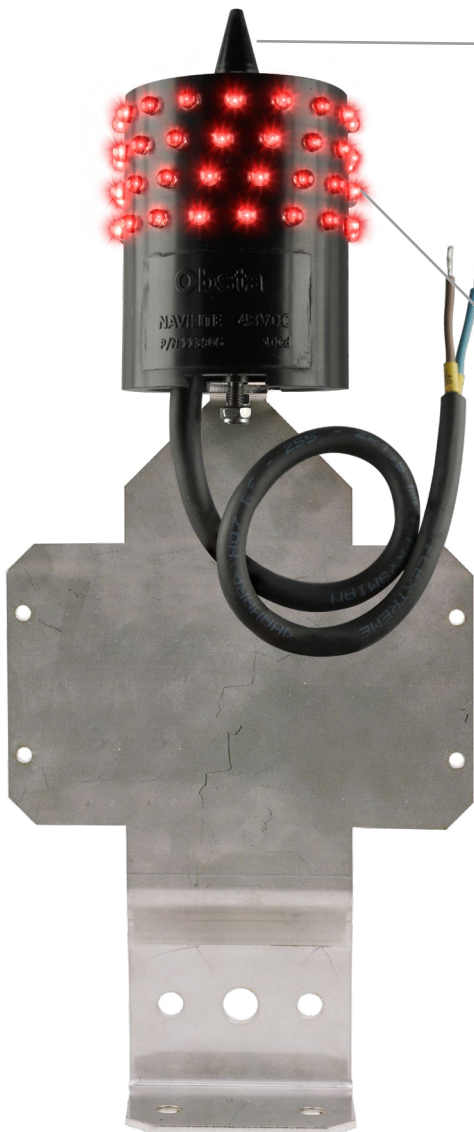
GROUND CABLE

5

6

NAVILITE 12 - 24 - 48 VDC

Low intensity type A and B

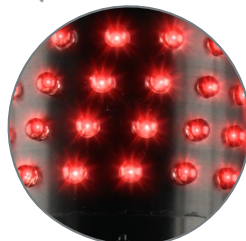


NAVILITE-48V-cable + stainless bracket



One-piece molded

- perfectly waterproof
- no corrosion risk
- lifetime 10 times higher than for incandescent lights
- no rise from the ground potential (due to lightning for example)
- bird spike



LED light

- Total of 64 diodes
- 16 circuits of 4 LEDs
- LED wiring 4 by 4 in active redundancy @ 90°
- molding provides perfect support of the LED inclination angle
- excellent heat dissipation



Wiring by pod

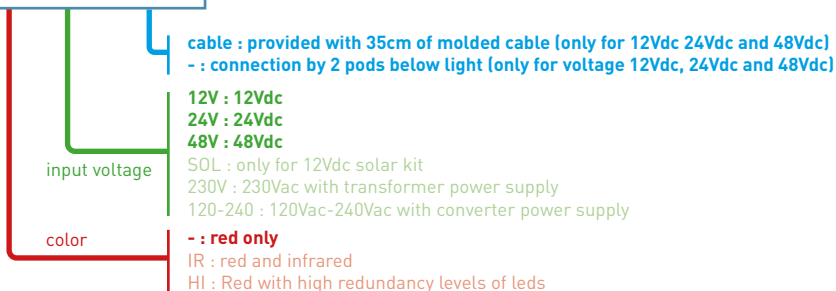


Molded cable

2 options : Pods or cable

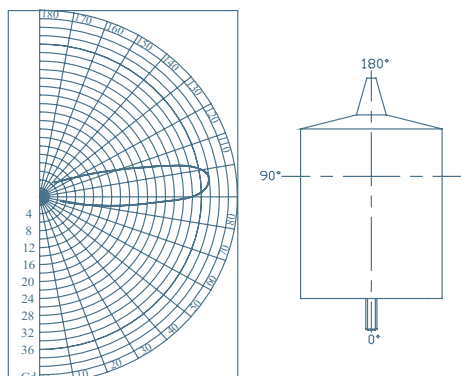
- Continuous current 12, 24 and 48 VDC
- optional power supply through a backup power source for continuity of the marking (batteries) or through solar generator.
- Available with terminal connection or 35cm cable

NAVILITE - XX - XXX - cable





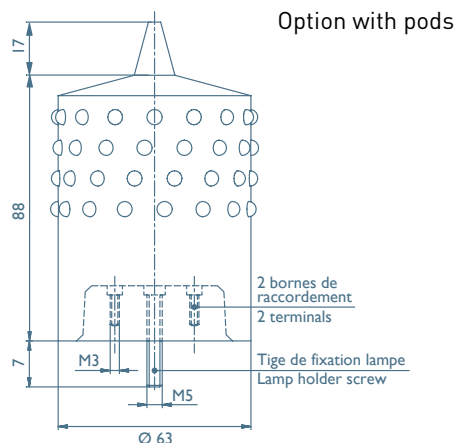
LIGHT INTENSITY DIAGRAM



	NAVILITE Type A and B
IP degree	66
Operating temperature	-40° + 55°C
Power supply	12, 24, 48 VDC (+/-10%)
Light weight	370 g
Attachment	M5 screw (provided)
Maintenance	none

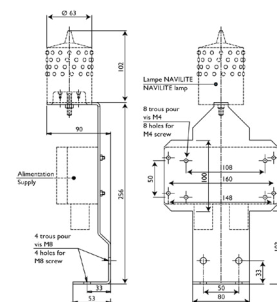
* The weight of the fixing bracket is 0.75kg

DIMENSIONS (IN MM)



ACCESSORIES

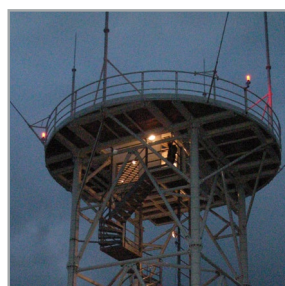
- Stainless steel mounting bracket - P/N 113920 for Navilite & optional box.



- Monitoring box for Navilite 48V (see page 30)
- Junction box (P/N 113943) (see page 30)
- Battery Cabinet with 12 hours power backup (see page 50)

MAIN REFERENCE

	Designation	Part number	Power supply	Luminous intensity	Electrical current	Nominal power	Lifetime
Pod	NAVILITE-48V	113900	48 VDC	> 32 Cd	125 mA	6 W	decades
	NAVILITE-24V	113901	24 VDC	> 32 Cd	250 mA	6 W	
	NAVILITE-12V	113902	12 VDC	> 32 Cd	500 mA	6 W	
Cable	NAVILITE-48-cable	113905	48 VDC	> 32 Cd	125 mA	6 W	
	NAVILITE-24-cable	113906	24 VDC	> 32 Cd	250 mA	6 W	



SOLAR NAVILITE 12 VDC

Low intensity type A



One-piece molded

- perfectly waterproof
- no corrosion risk
- lifetime 10 times higher than for incandescent lights
- no rise from the ground potential (due to lightning for example)
- bird spike

LED light

- Total of 64 diodes
- 16 circuits of 4 LEDs
- LED wiring 4 by 4 in active redundancy
- molding provides perfect support of the LED inclination angle
- excellent heat dissipation

OBSTA Solar kit

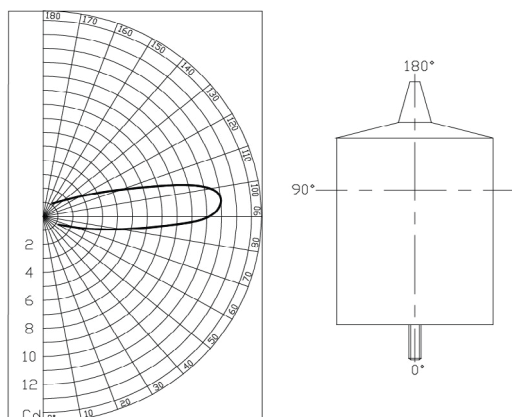
- Continuous current 12 VDC with regulation
- optional Obsta solar generator.
- Size depending on latitude and longitude.

NAVILITE - SOL + stainless bracket

NAVILITE - XX - XXX - cable



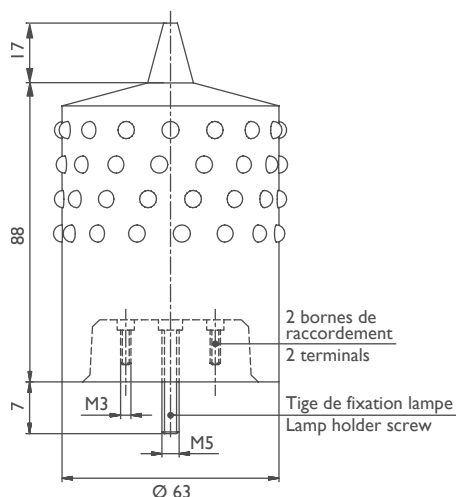
LIGHT INTENSITY DIAGRAM



	NAVILITE Type A
IP degree	66
Operating temperature	-40° + 55°C
Power supply	>12 VDC from Obsta Solar Kit
Light weight	370 g
Attachment	M5 screw (provided)
Maintenance	none

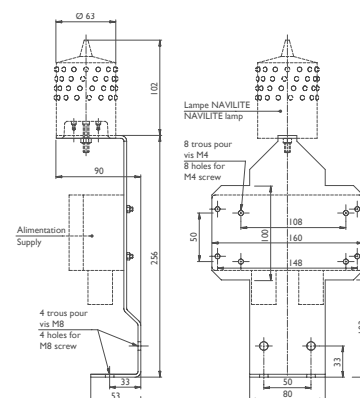
* The weight of the fixing bracket is 0.75kg

DIMENSIONS (IN MM)



ACCESSORIES

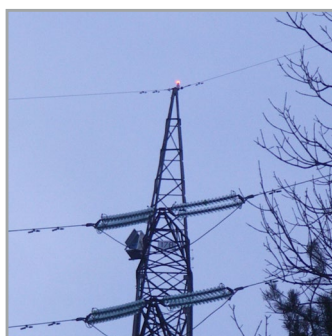
- Stainless steel mounting bracket - ref. 113920



- "Main and back-up" command box P/N 113942 for 2 NAVILITE-SOL
- Solar kit P/N 1003SOL (see page 49)

MAIN REFERENCE

Designation	Part number	Power supply	Luminous intensity	Electrical current	Nominal power	Lifetime
NAVILITE-SOL	113903	12 VDC	> 10 Cd	250 mA	< 3 W	Decades



NAVILITE 110-240 VAC

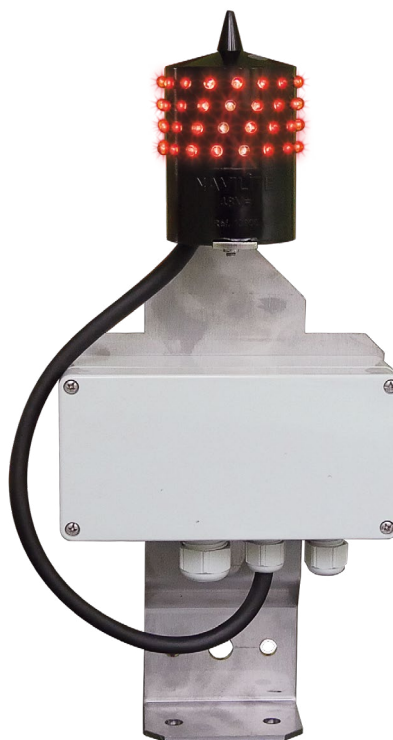
Low intensity type A and B



NAVILITE-240i
P/N 113909i
+ stainless bracket P/N 113920

- for navilite-240i

- same light than Navilite-48V but with AC/DC converter and surge protection built inside

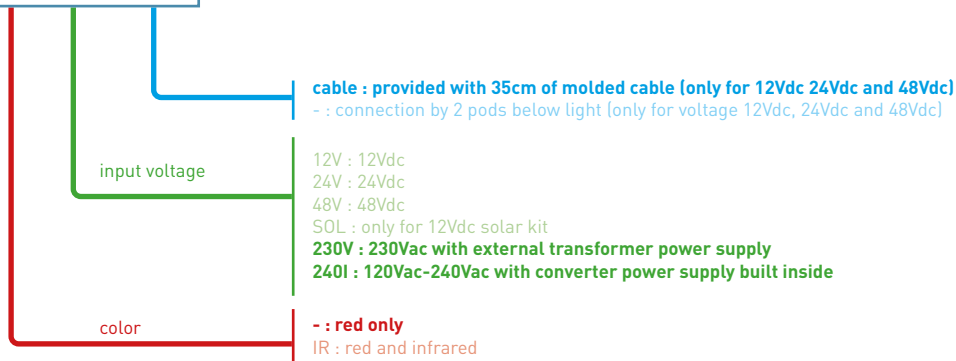


NAVILITE-230V
P/N 113909 (113905+113911)
+ stainless bracket P/N 113920

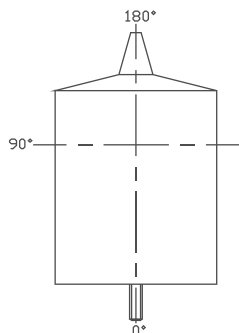
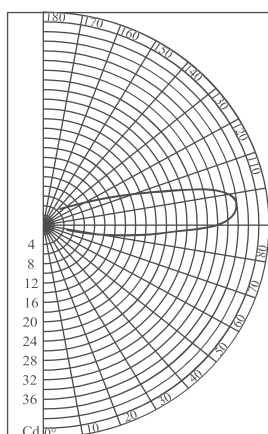
- for navilite-230V

- 230VAC power transformer providing galvanic isolation with the light (see page 31 for more information for the power supply 113911)

NAVILITE - XX - XXX - cable



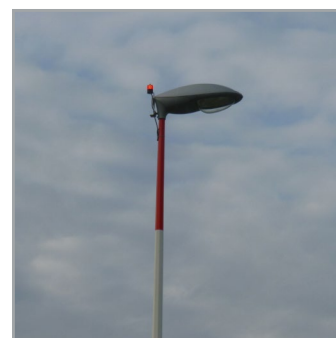
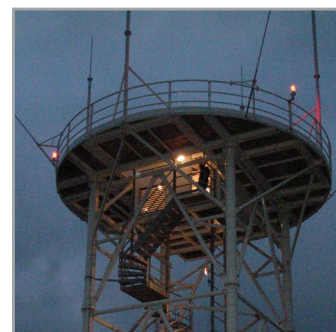
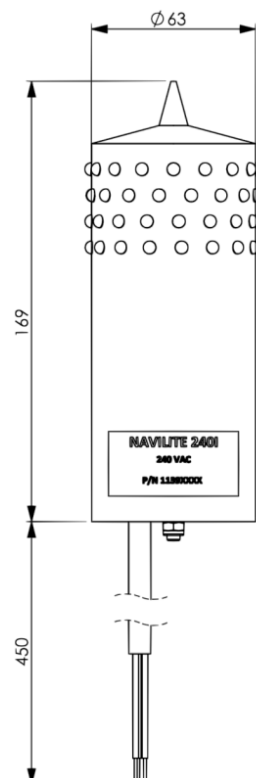
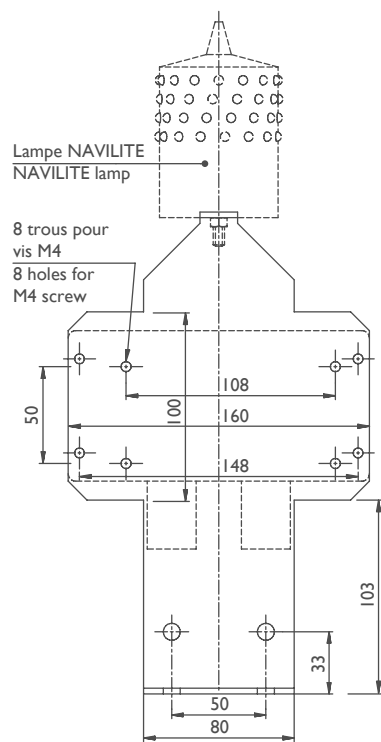
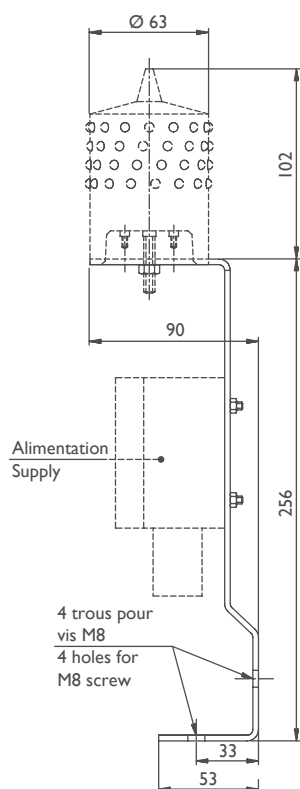
LIGHT INTENSITY DIAGRAM



	NAVILITE Type A and B
IP degree	66
Operating temperature	-40° to + 55°C
Power supply	230 VCA (+/- 10 %) = 113909 110 à 240 V (+/- 10%) = 113909I
Weight (light) (excluding fixing bracket*)	370 g = 113909 950 g = 113909I
Attachment	by screw M5 (provided)
Maintenance	none

* The weight of the fixing bracket is 0.75kg

DIMENSIONS (IN MM)



ACCESSORIES

- Stainless steel mounting bracket ref. 113920

MAIN REFERENCE

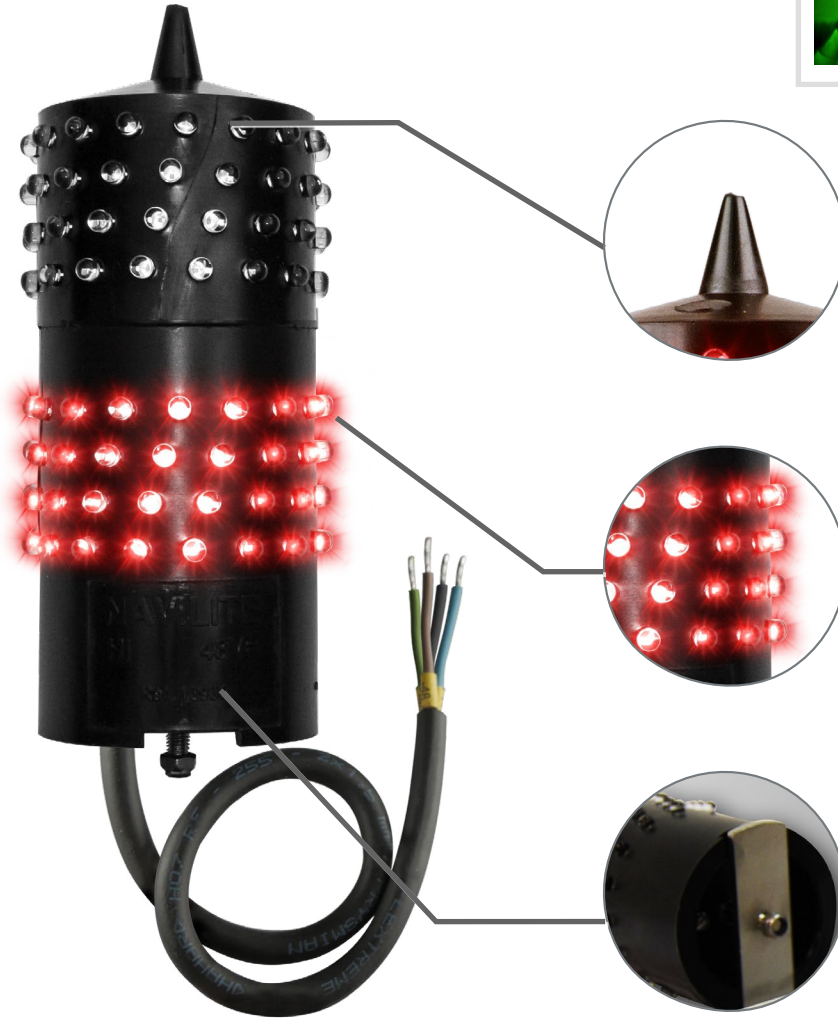
Designation	Part number	Power supply	Luminous intensity	Electrical current	Nominal power	Lifetime
NAVILITE-230V	113909	230 VAC	> 32 Cd	70 mA	6 W	decades
NAVILITE-240I	113909I	120-240 VAC	> 32 Cd	70 mA	6 W	

NAVILITE IR

Led low intensity type A and B + infrared



Night Vision Goggles compatible according to OFAC directive (Switzerland)



One-piece molded

- perfectly waterproof
- no corrosion risk
- no rise from the ground potential (due to lightning for example)
- bird spike

LED light

- Total 64 red diodes + 64 infrared diodes
- 2x 16 circuits of 4 LEDs
- LED wiring 4 by 4 in active redundancy @ 90°
- molding provides perfect support of the LED inclination angle
- 2 independent circuits for red and infrared

Power supply

- Continuous current 12, 24 and 48 VDC
- optional 230VAC command box for infrared leds blinking mode.

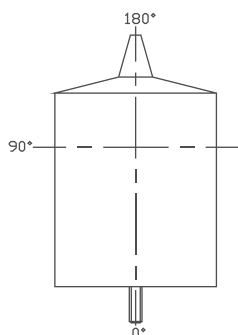
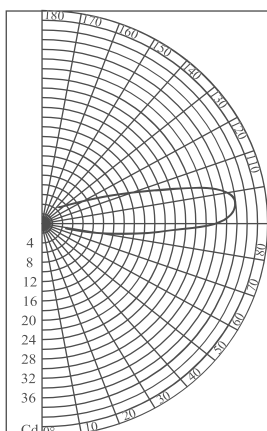
NAVILITE-48V-cable

NAVILITE - XX - XXX - cable





LIGHT INTENSITY DIAGRAM

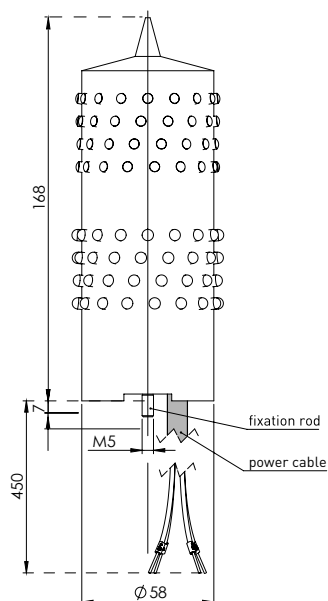


	NAVILITE Type A and B
IP degree	66
Operating temperature	-40° + 55°C
Power supply	12, 24, 48 VDC (+/-10%)
Light weight	0.92kg (excluding fixing bracket*)
Attachment	by screw M5 (provided)
Maintenance	none

* The weight of the fixing bracket is 0.75kg

DIMENSIONS (IN MM)

113905IR+113925+113943-AL



ACCESSORIES

- Stainless bracket part number 113920
- Stainless bracket for ground cable part number 113925
- Optional accessories
- junction box part number 113943-AL
- 100-240Vac command box part number 113912 for infrared blinking mode
- 48Vdc command box part number 113915 for infrared blinking mode



MAIN REFERENCE

	Designation	part number	Power supply	Luminous intensity	IR intensity and wavelength	Nominal power	Lifetime
cable	NAVILITE-IR-48V-cable	113905IR	48 VDC	> 32 Cd	150mW/sr @ 850nm	< 12 W	decades

NAVILITE FAA L810

FAA L-810 compliant with ICAO low intensity type B

L-810(L) as per FAA 150-5343H



NAVILITE-FAA-100-240Vac

One-piece molded

- Light perfectly waterproof
- no corrosion risk
- no losing parts
- bird spike
- 2 x 1" NPT threaded holes

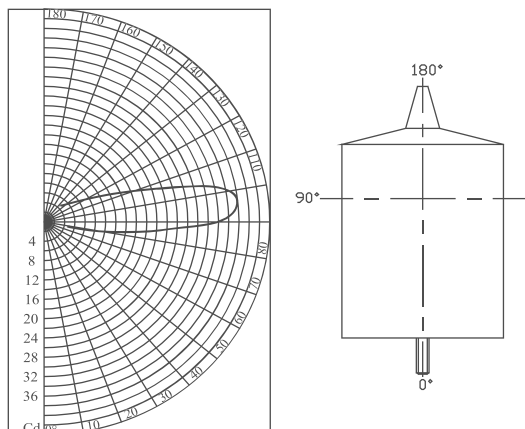
LED light

- Total of 64 diodes
- 16 circuits of 4 LEDs
- LED wiring 4 by 4 in active redundancy at 90°
- provide perfect support of the LED inclination angle
- excellent heat dissipation

Power supply

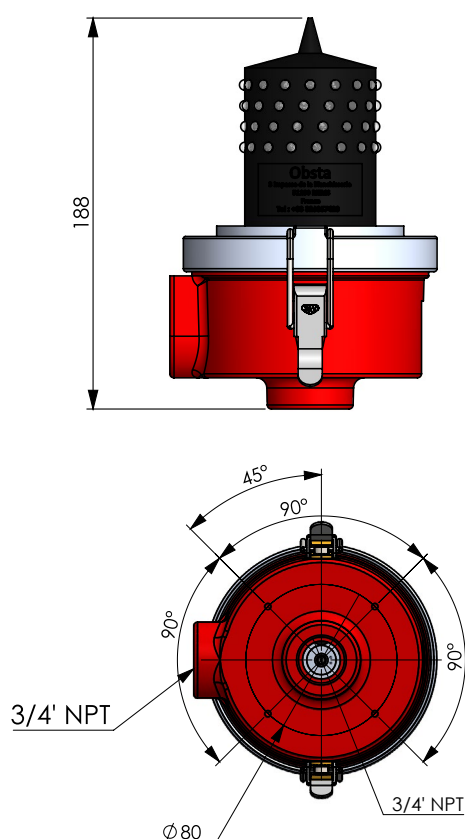
- Modular design with separate power supply in aluminium housing mounted
- 48 VDC or 110 VAC to 240 VAC power supply
- Surge protection included
- Alarm relay included
- 2 x ¾" NPT threaded holes for mounting (or with stainless bracket P/N113928 and standard cable entry in absence of FAA rigid conduit)

LIGHT INTENSITY DIAGRAM



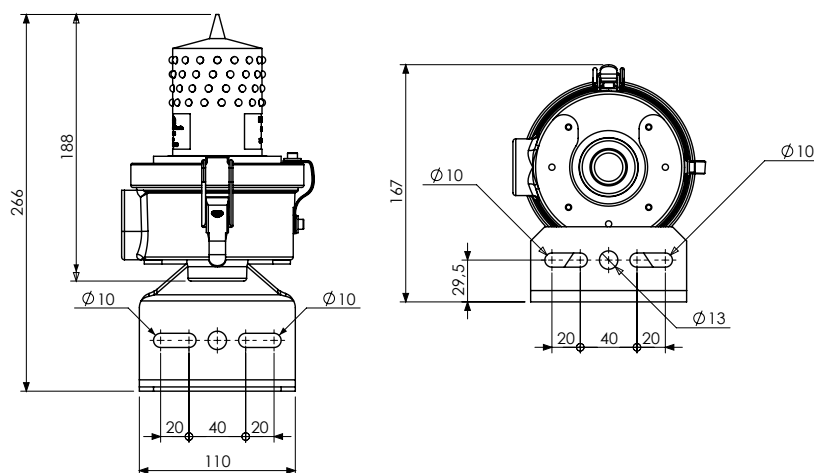
	NAVILITE L-810
IP degree	65 in vertical position
Operating temperature	-40° to + 55°C
Power supply	110 VAC to 240VAC and 48VDC (+/- 10%)
Weight (light)	370 g (excluding aluminium base)
Weight (light + base)	1.4 kg (fixed through vertical or horizontal NPT)

DIMENSIONS (IN MM)



ACCESSORIES

- Support for horizontal or vertical attachment P/N 113928
- 100-240Vac command box part number 113942 for NAVILITE 48Vdc P/N 113965.



With bracket P/N113928

MAIN REFERENCE

Designation	Part number	Power supply	Luminous intensity	Nominal power	Theoretical lifetime
NAVILITE-FAA-100-240V	113969	110 VAC to 240 VAC	As per FAA 150-5343H	6 W	decades
NAVILITE-FAA-48V	113965	48 VDC		6 W	decades

NAVILITE FAA L810 IR

FAA L-810 compliant with ICAO low intensity type B

L-810(L) as per FAA 150-5343J ETL certified



NAVILITE-IR-FAA-120-240V

One-piece molded

- Light perfectly waterproof
- no corrosion risk
- no losing parts
- bird spike
- 2 x 1" NPT threaded holes

LED light

- Total of 128 diodes
- 16 circuits of 4 LEDs with Infrared
- LED wiring 4 by 4 in active redundancy at 90°
- provide perfect support of the LED inclination angle
- excellent heat dissipation

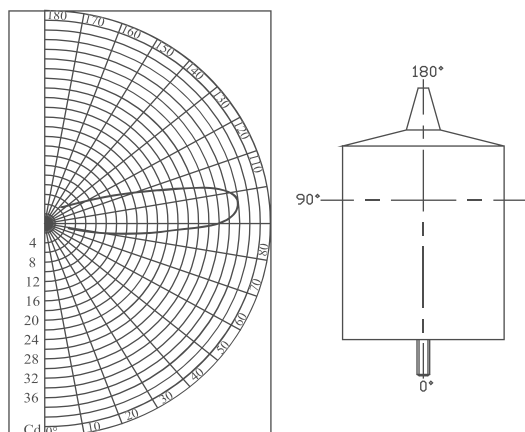
Power supply

- Modular design with separate power supply in aluminium housing mounted
- 110 VAC to 240 VAC power supply
- Surge protection included
- Alarm relay included
- Mimic with L-864 medium intensity (flashing mode) or fixed mode
- 2 x ¾" NPT threaded holes for mounting (or with stainless bracket P/N113928 and standard cable entry in absence of FAA rigid conduit)



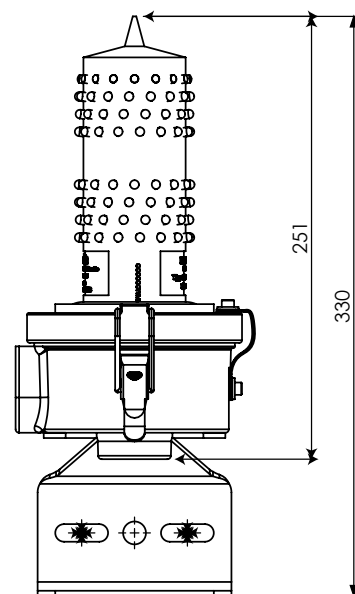
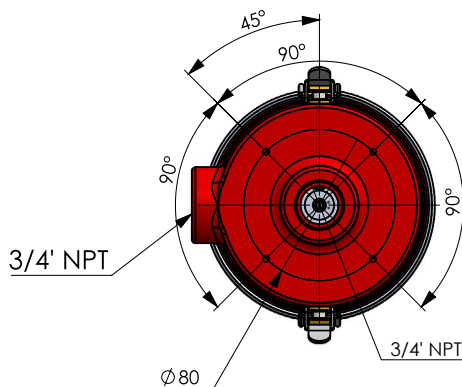
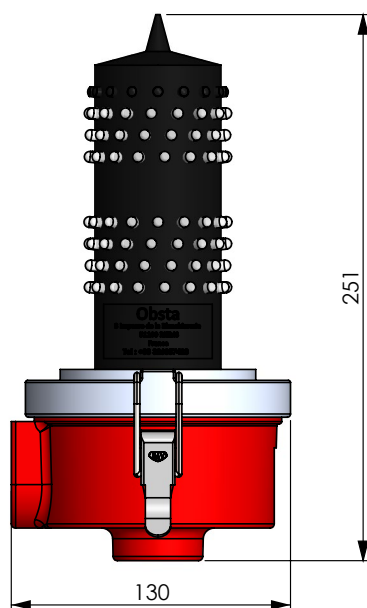
Night Vision Goggles according to FAA 150-5343J

LIGHT INTENSITY DIAGRAM



	NAVILITE L-810
IP degree	65 in vertical position
Operating temperature	-40° to + 55°C
Power supply	110 VAC to 240VAC 48Vdc +/- 10%
Weight (light + base)	1.4 kg (fixed through vertical or horizontal NPT)

DIMENSIONS (IN MM)



With bracket P/N 113928

ACCESSORIES

- Support for horizontal or vertical attachment P/N 113928

MAIN REFERENCE

Designation	Part number	Power supply	Luminous intensity	Nominal power	Theoretical lifetime
NAVILITE-IR-FAA-100-240V	113969IR	110 VAC to 240 VAC	As per FAA 150-5343J	8 W (fixed mode)	decades
NAVILITE-IR-FAA-048	113965IR*	48 VDC	As per FAA 150-5343J	8 W (fixed mode)	decades

* not ETL listed

ACCESSOIRES FOR NAVILITE

Monitoring and control boxes offered with the NAVILITE are designed for an easy use and installation follow up on the complete obstruction lights system.

JUNCTION BOX FOR NAVILITE, OBSTA HI/STI AND OFC



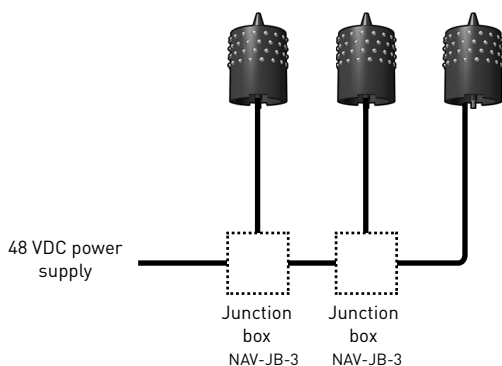
Main characteristics

- Polycarbonate box
- Junction box for 1 or 2 NAVILITE to power cable
- Suitable for all voltage
- 4 cable entries
- Terminals connections for the wires

References

Designation	part number	voltage	Number of cable entries	Cable cross section
NAV-JB-4	113946	all	4	2.5 mm ²
NAV-JB-3-AL	113943-AL	all	3	4 mm ²

Typical configuration with Navilite-48V



230 V POWER SUPPLY FOR NAVILITE 48 VDC



Main characteristics

- 230VAC power transformer providing galvanic isolation with the light
- 3 cable entries
- Up to 4 NAVILITE-48VDC can be connected to the power supply

Reference

Designation	part number	input voltage	Number of lights	main and back-up	simultaneously	alarm	remote alarm
48V-NAV-PW-240	113911	230VAC	1-4 Navilite-48V	no	yes	no	no

COMMAND BOX FOR NAVILITE 48 VDC AND NAVILITE-SOL



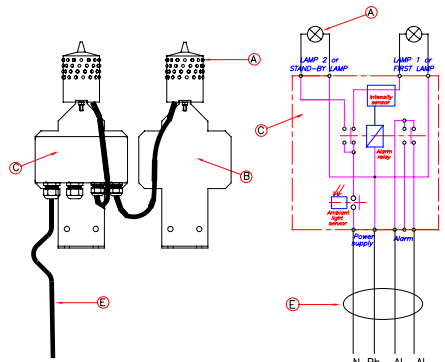
Main characteristics

- Polycarbonate box with or without transparent cover
- Redundancy wiring (one main light and one backup light)
- Integrated photocell
- Alarm monitoring in case of lights or power supply failure
- Switch from main light to backup one in case of failure
- Blinking mode (Low intensity type E, L-810(F), Navilite-RI-48V)
- Configuration done by dip-switches

Command box for navilite 48 Vdc

Designation	part number	input voltage	Number of lights	main and back-up or simultaneous	Photocell	Surge protection	remote alarm	Mimic with Red medium intensity
48V-NAV-CMD-100/240	113912	100-240VAC	1-4 Navilite-48V	yes	yes	yes	yes	yes
NAV-CMD-48-B	113915	48VDC	1-4 Navilite-48V	yes	yes	yes	yes	yes

Typical configuration with 2 Navilite-48V



Alarm conditions :

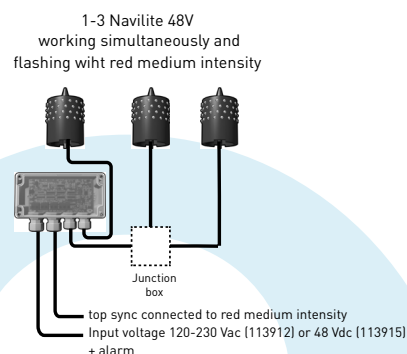
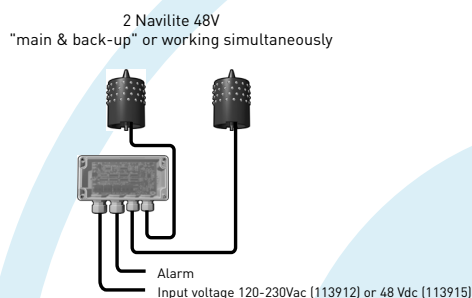
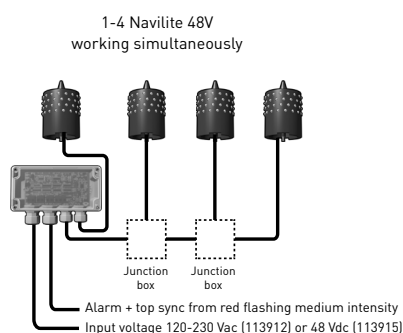
- Low intensity of the lamp(s)
- Short-circuit of the lamp(s)
- Power supply failure

Nomenclature / Bill of materials

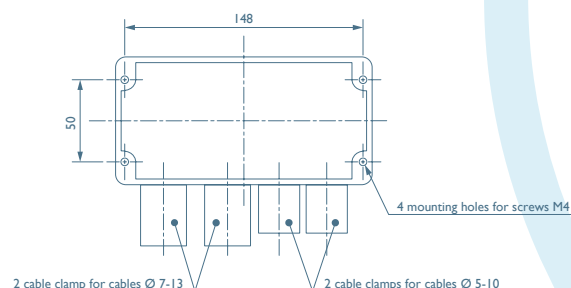
Reference	Quantity	Part number	Designation
A	2	113905	Navilite 48VDC
B	2	113920	Navilite bracket
C	1	113912 or 113915	Command box
E	-	113160	5G1.5 flexible cable

Cable must be shielded when used in electro-magnetic fields

Other configurations



WEIGHT & DIMENSIONS (FOR ALL MODEL)

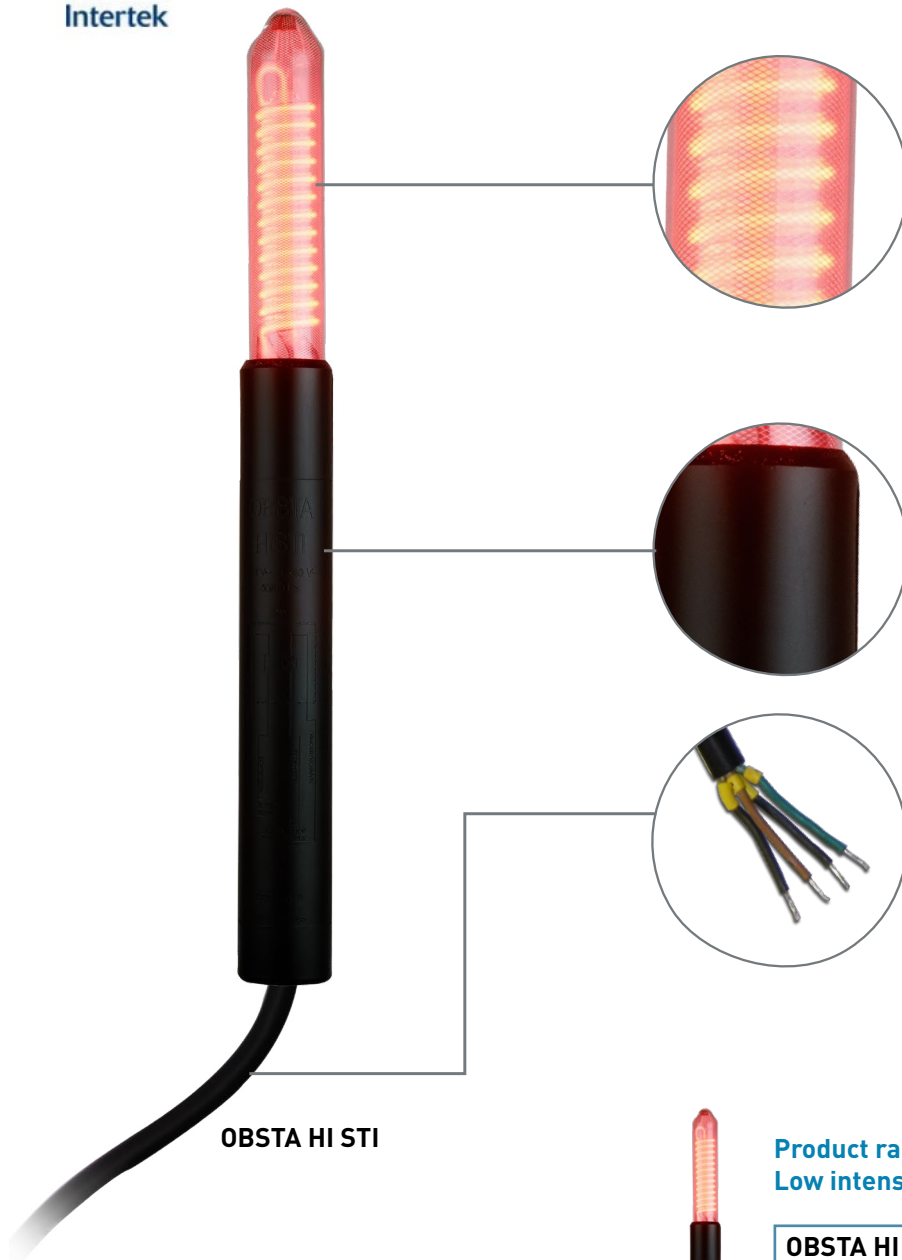


IP degree (in vertical position)	65
Power Cable diameter	from 7 to 13 mm
Wire cross section	from 1 to 2.5 mm ²
Attachment	4 screws type M4

OBSTA HISTI 110 to 240 VAC

The OBSTA HI STI is devoted to the marking of all kinds of obstacles such as buildings, airports, broadband towers, high voltage power poles. One model allow can cover every voltage from 110VAC up to 240VAC.

L-810 FAA 150-5343G



OBSTA HI STI

Neon light

- 13 turns
- hard glass cover and tube
- «aviation» red color
- very long life expectancy in all climatic environment
- great light efficiency
- luminosity substantially higher than what is recommended by ICAO and FAA
- low power consumption

One-piece molded

- perfectly waterproof
- no grounding issue
- all wiring configuration available
- no rise from the ground potential (due to lightning for example)
- increased reliability

Power cable

- 110 VAC up to 240 VAC
- protected against transient overvoltages
- alarm relay in case of lamp failure or low power

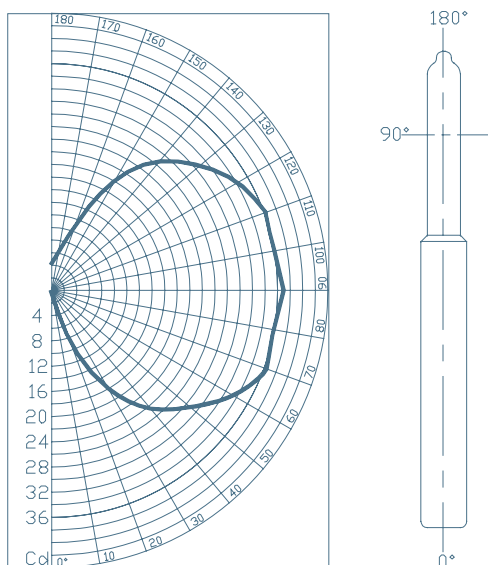
Product range HI STI Low intensity cold neon discharge 32CD

OBSTA HI STI - F - APR

- : class II
APR : class I (only 110 up to 240VAC)

240V : 110 up to 240VAC
F 24V: 24Vdc

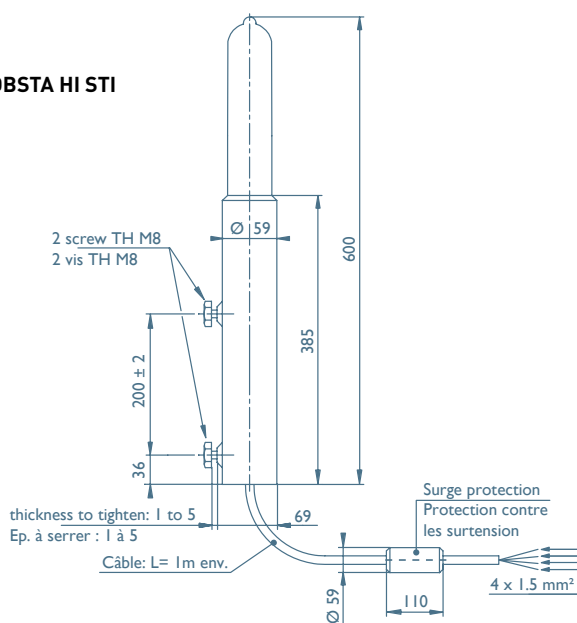
LIGHT INTENSITY DIAGRAM



	HISTI
IP degree	66
Operating temperature	-30° + 60°C
Power supply voltage	from 110 up to 240V (+/-10%) 50/60 Hz
Weight	2.3 kg
Attachment	2 screws type M8 (provided) Thickness to screw into : 1 up to 5 mm
Wiring	On stripped wires (2 power wires, 2 alarm wires)

DIMENSIONS (IN MM)

OBSTA HI STI



SPECIAL PRECAUTIONS

For chimney installation, install the light under the top (1.5 to 3m, 5 to 10ft), as per ICAO and FAA recommendations.
For installation in intense electromagnetic fields, the use of shielded wire is highly recommended.

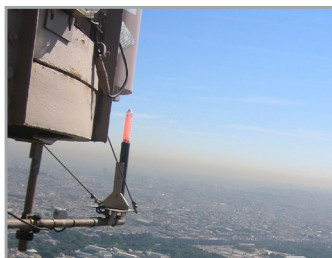
OTHER FUNCTIONS

- Failure remote signalization by relay (see diagram)
- «Active redundancy» configuration allows the automatic turn on of a backup light and/or of an alarm in case of failure of the main light (see diagram)
- Photocell controlled
- Light shielded as per standard EN 55011, class B
- **Stainless steel mounting bracket** (ref. 113121 for one light and 113124 for two lights)
- **Connection accessories** (see page 36)

MAIN REFERENCE

Designation	OBSTA part number	Power supply	Luminous intensity	Current consumption	Nominal power	Theoretical lifetime (without any light decrease*)
OBSTA HI STI	113110	from 110 V eff. up to 240 V 50/60 Hz	> 32 Cd	110V - 730 mA 240 V - 370 mA	45 W	10 years
OBSTA HI STI-APR	113113	from 110 V eff. up to 240 V 50/60 Hz	> 32 Cd	110V - 730 mA 240 V - 370 mA	45 W	10 years

* with power supply stabilized



OBSTAFLASH COMPACT OFC

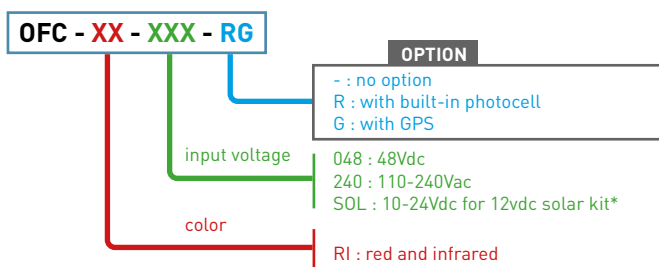
L-864 FAA (AC 150/5345-43J) certified with IR compatible with night vision goggles (NVG)
ICAO Red Medium intensity type B & C / CAA compliant (fixed mode)



Characteristics

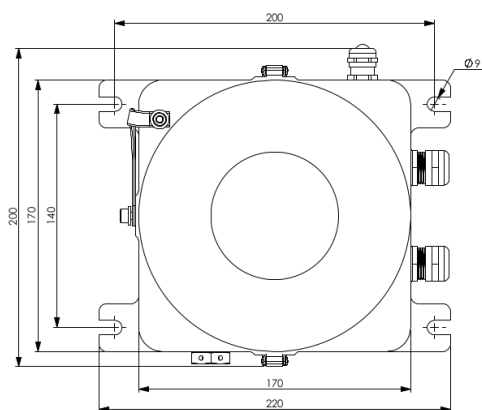
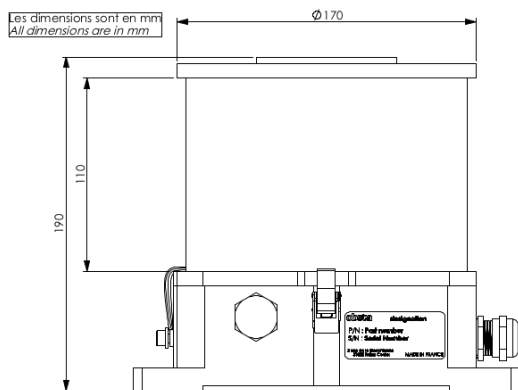
- Hard glass cover (no plastic) and aluminum based
- Easy installation with only captive parts
- 2 LED circuits with red and infrared leds
- Adjustable configuration through dip-switch inside the flash-head as per ICAO MI type B (20 to 60 flashead per minutes) or ICAO MI type C & CAA (fixed mode) or FAA L-864 (30 flashes per minutes)
- Alarm in case of light or power failure (normally open and normally close relay both available)
- Low consumption
- Surge protection included
- "Night Vision compatible"
- Photocell and GPS built-in in option
- New : condensationless valve

Product range OBSTAFLASH COMPACT OFC ICAO Red Medium intensity type B & C / L-864 / CAA / STAC



* ETL not listed

WEIGHT & DIMENSIONS (IN MM)



Mechanical characteristics	OFC
IP degree	66
Operating temperature	-40°C to +55°C
Cable entries	2 nickel-plated brass
Weight	5kg

ACCESSORIES

- Built in GPS for wireless synchronisation
- Built in Photocell for night only operation

External accessories

- junction box part number 113946
- monitoring box for OFC & Navilite part numbers 113176-240 (AC) and 113176-048 (DC)
- Photocell part number 100756 (AC) or 100757 (DC)

MAIN REFERENCE

designation	part number	Voltage	Color	Infrared intensity and wavelength	Red Luminous intensity	Average power consumption
OFC-RI-048	113790RI-048*	48 Vdc	red	600mW/sr @ 800-900nm	2000cd RMS	3 to 30 W depending on the configuration (10W for L-864)
OFC-RI-240	113790RI-240*	100-240 Vac	red			
OFC-RI-SOL	113790-RI-SOL*	12-24 Vdc	red			

* option "G" to be added for built-in GPS for day/night and/or flash synchronisation

* option "R" to be added for built-in photocensor

* option "RG" to be added for built-in GPS for flash synchronisation and built-in photocell

OBSTAFLASH OFI360

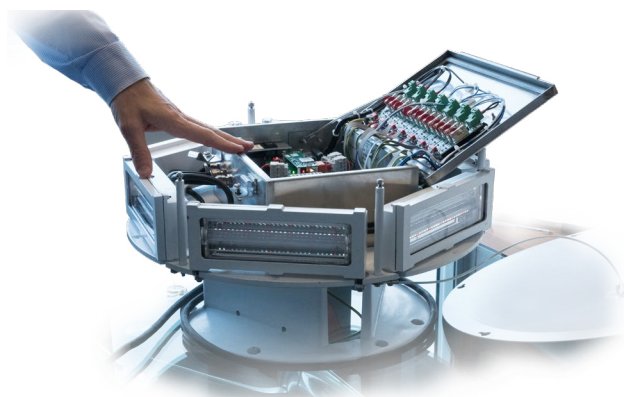
L-865/864 FAA (AC 150/5345-43J) Certified
ICAO white & red Medium intensity type A+B & C / CAA compliant (fixed mode)



Flashhead with integrated 48VDC power supply
Patent : EP 1966535B1 & US 7816843

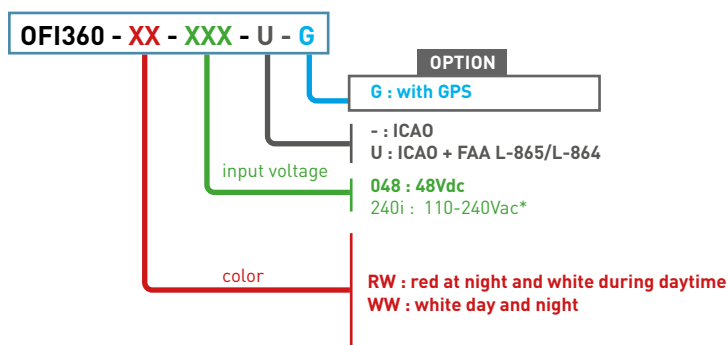
Dual color Flashhead

- 6 led replaceable projectors
- Aluminium and glass envelope
- Modular design
- Easy maintenance
- Precise optic , low led current for optimal lifetime
- Integrated 48 VDC power supply inside the flashhead
- Luminous indicator for each led circuits
- Captive parts
- 48 Vdc surge protection included
- Test button and luminous indicators
- SNMP capability through additional controller



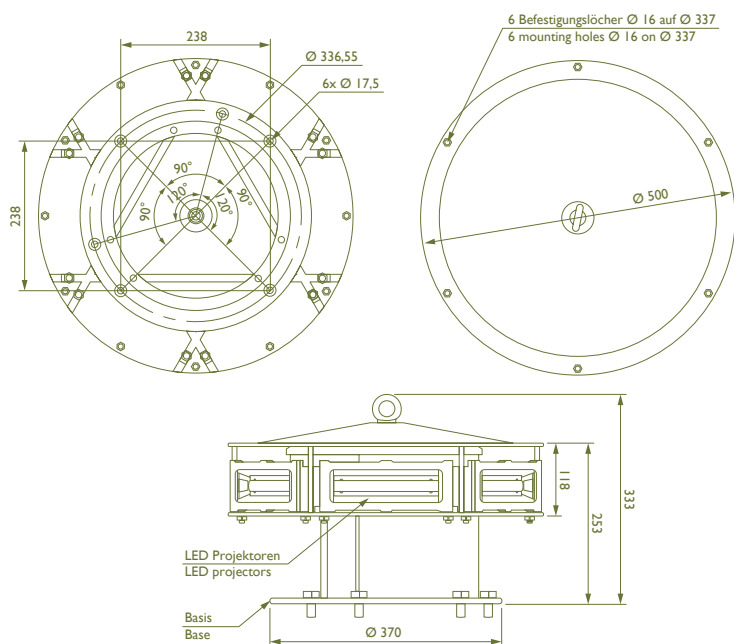
Product range OBSTAFLASH OFI360

Obstaflash Medium intensity with 48Vdc integrated power supply
ICAO White and Red Medium Intensity type A and B & C / CAA /STAC



WEIGHT & DIMENSIONS (IN MM)

Flashhead



IP degree for power cabinet	65 in vertical position
Operating temperature	-30° to +55°C
Input voltage	48 Vdc +/- 10%
Cable entry for flashhead, power supply, photocell and alarm	1 nickel plated brass

ACCESSORIES

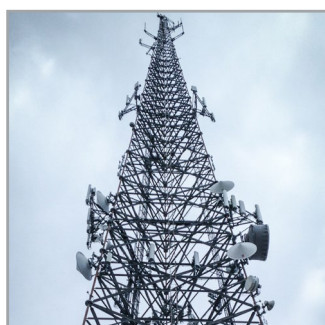
- GPS inside flashhead part number 1137461 for wireless synchronization
- 48vdc photocell part number 100755
- 48Vdc battery cabinet (input voltage 100-240VAC) for 12 hours back-up part number 113956 (see page 50) or with stainless enclosure part number 113509

MAIN CHARACTERISTICS

Main characteristics	Effective Luminous output on site at 0°		Color		Beam Spread		Flashes per minute
	Day	Night	Day	Night	Vertical	Horizontal	
Red only (L864)	light off	2000 Cd	light off	Red	> 3°	360°	As per ICAO or FAA
White only (L865)	20 000 Cd	2000 Cd or off	White	White or off			
Dual color (L865/L864)	20 000 Cd	2000 Cd	White	Red			

MAIN REFERENCE

Designation	part number	input voltage	ICAO category	FAA category	Color
OFI360-RW-048-U	113792U	48Vdc	Medium intensity type A & B	L-865/L-864	dual color
OFI360-WW-048-U	113791U		Medium intensity type A	L-865	white
OFI360-RW-048	113792		Medium intensity type A & B or C	-	dual color
OFI360-WW-048	113791		Medium intensity type A	-	white
OFI360-R-048-U	113790		Medium intensity type B (or C, CAA)	L-864	red
OFI240-RW-240-G	113792-240-G	110-240VAC	Medium intensity type A and B/C	-	dual color



KIT OBSTAFLASH OFI360 110-240 Vac

L-865/864 FAA (AC 150/5345-43J) Certified

ICAO white & red Medium intensity type A+B & C / CAA compliant (fixed mode)



Flashhead with integrated 48VDC power supply

Patent : EP 1966535B1 & US 7816843

Flashhead

- 6 led replaceable projectors
- Aluminium and glass envelope
- Modular design
- Easy maintenance
- Precise optic , low led current for optimal lifetime
- Integrated 48 VDC power supply inside the flashhead
- Luminous indicator for each led circuits
- Captive parts
- 48 Vdc surge protection included
- Test button and luminous indicators



120-230 VAC Power cabinet

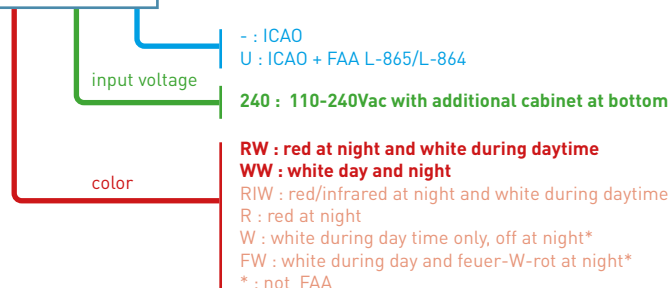
- Available in 120 /230 Vac
- Surge protection
- Automatic day/night switch with photocell
- Test button for day and night
- Modular design
- Two side lights in option, low intensity type
- Alarm contact
- Master/slave configuration for multiple lights synchronization
- SNMP ready

Product range OBSTAFLASH OFI360

Obstaflash Medium intensity with 48Vdc integrated power supply

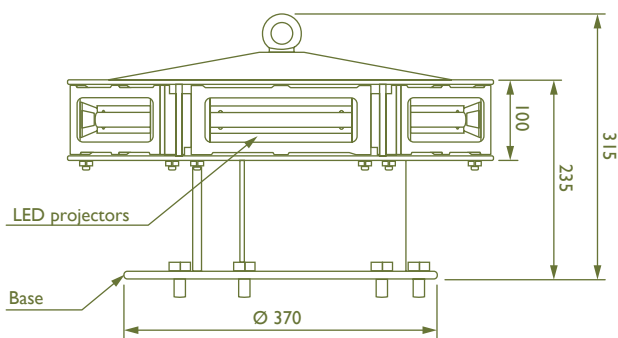
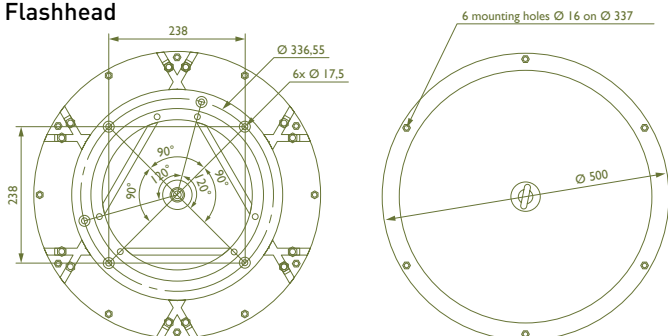
ICAO White and Red Medium Intensity type A and B & C / CAA /STAC

OFI360 - XX - XXX - U



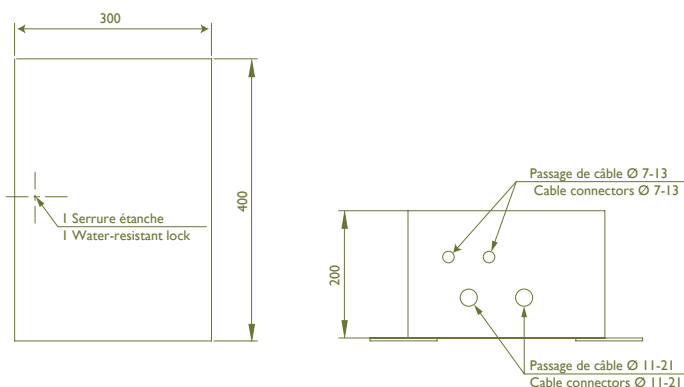
WEIGHT & DIMENSIONS (IN MM)

Flashhead



Weight: 14 kg - IP degree IP66

Control cabinet

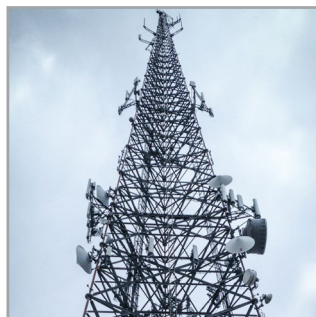


SETS COMPOSITION

IP degree for power cabinet	65 in vertical position
Operating temperature	-30° to +55°C
Input voltage	110 VAC to 240 VAC +/-10% 50 to 60 Hz
Cable entry for flashhead, power supply, photocell and alarm	4 nickel plated brass

ACCESSORIES

- GPS module for wireless synchronization in case it is not possible to connect the lights by wires part number 113746, see page 55
- Photocell part number 100755, see page 51



MAIN CHARACTERISTICS

Main characteristics	Effective Luminous output on site at 0°		Color		Beam Spread		Flashes per minute
	Day	Night	Day	Night	Vertical	Horizontal	
Red only (L864)	light off	2000 Cd	light off	Red	> 3°	360°	As per ICAO or FAA
White only (L865)	20 000 Cd	2000 Cd or off	White	White or off			
Dual color (L865/L864)	20 000 Cd	2000 Cd	White	Red			

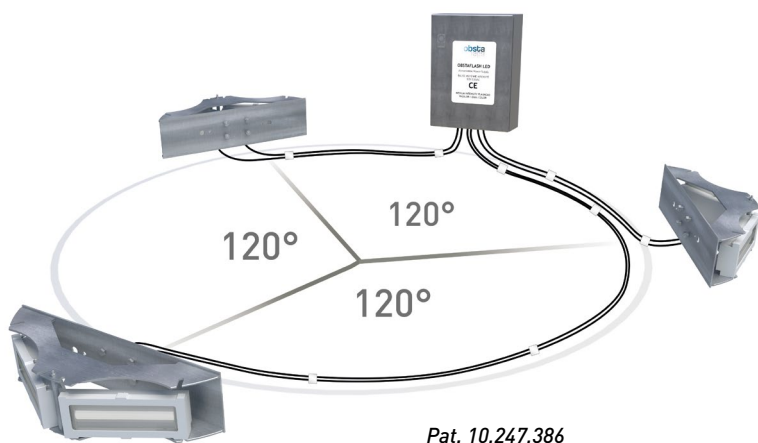
MAIN REFERENCE

Designation	part number	input voltage	ICAO category	FAA category	Color
OFI360-RW-240-U	113725UI	110-240Vdc	Medium intensity type A & B	L-865/L-864	dual color
OFI360-WW-240-U	113723UI		Medium intensity type A	L-865	white
OFI360-RW-240	113725I		Medium intensity type A & B or C	-	dual color
OFI360-WW-240	113723I		Medium intensity type A	-	white
OFI360-R-240-U	113724I		Medium intensity type B (or C, CAA)	L-864	red

"U" for US only

KIT OBSTAFLASH OFI120

L-865/864 FAA (AC 150/5345-43J) Certified
ICAO white & red Medium intensity type A+B & C / CAA compliant (fixed mode)



Kit including 3 Obstaflash120

- 2 led projectors with 10 meters cable
- Aluminium and glass envelope
- Connection with connectors for dual color and gland for red only
- Precise optic for optimal power consumption,
- Electronic deported in external cabinet



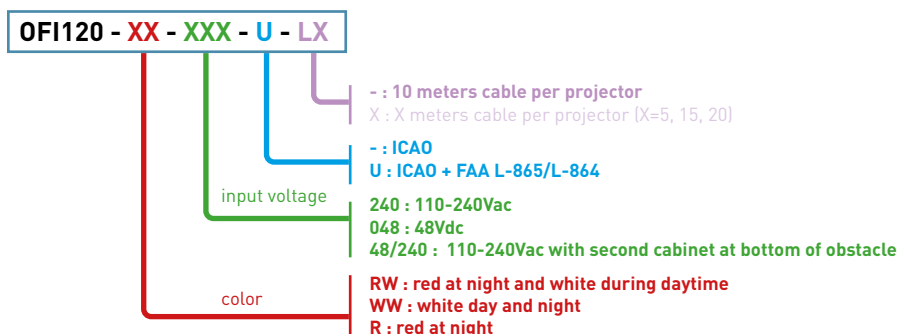
Power cabinet

- Stainless enclosure
- Surge protection
- Test button for day and night, 1 luminous indicator per white led projector,
- Modular design,
- Alarm contact
- Master/slave configuration for multiple cabinet
- Connection terminal for 48V low intensity at intermediale level working at night only
- Available with or without back-up power supply



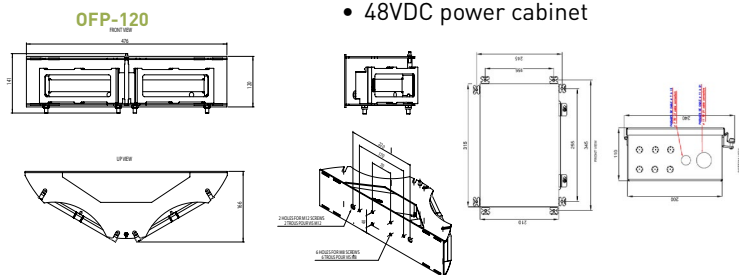
Product range OBSTAFLASH OFI120

Kit including 3 Obstaflash120 medium intensity flashheads + power supply at same level,
ICAO White and Red Medium intensity type A and B & C / CAA / STAC



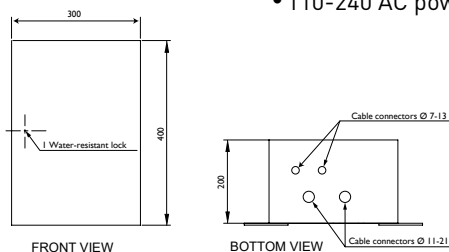
COMPOSITION PER ITEMS

- 48VDC power cabinet



IP degree for power cabinet	65 in vertical position
Operating temperature	-30° to +55°C
Input voltage	110 VAC to 240 VAC 50 to 60 Hz or 48VDC +/- 10%
Cable entry for flashhead, power supply, photocell and alarm	4 nickel plated brass

- 110-240 AC power cabinet



ACCESSORIES

- GPS part number 113746 for wireless synchronization
- 48vdc photocell part number 100755
- 48Vdc battery cabinet (input voltage 100-240VAC) for 12 hours back-up part number 113956 (see page 50)

MAIN CHARACTERISTICS

Main characteristics	Effective Luminous output on site at 0°		Color		Beam Spread		Flashes per minute
	Day	Night	Day	Night	Vertical	Horizontal	
Red only (L864)	light off	2000 Cd	light off	Red	> 3°	360°	As per ICAO or FAA
White only (L865)	20 000 Cd	2000 Cd or off	White	White or off			
Dual color (L865/L864)	20 000 Cd	2000 Cd	White	Red			

	Designation	part number	Power supply	ICAO category	FAA category	System components
	OFl120-RW-48/240-U	113758U	110-230 VAC	Medium intensity type A and B	L-865/L-864, dual color medium intensity	3 x OFP-120-RW-10L-U + OFP-CAB-6P-L-RW-048 + OFI-CAB-1E-RW-240-U
	OFl120-WW-48/240-U	113757U		Medium intensity type A	L-865 white medium intensity	
	OFl120-R-048/240	113756U		Medium intensity type B	L-864 red medium intensity	3 x OFP-120-R-10 + OFP-JB-6P-R + OFP-CAB-6P-1E-R-240
	OFl120-RW-048-U	113712U	48VDC	Medium intensity type A and B	L-865/L-864, dual color medium intensity	3 x OFP-120-RW-10L-U + OFP-CAB-6P-L-RW-048
	OFl120-WW-048-U	113711U		Medium intensity type A	L-865 white medium intensity	
	OFl120-R-048	113710U		Medium intensity type B	L-864 red medium intensity	3 x OFP-120-R-10 + OFP-JB-6P-R + OFP-CAB-6P-6E-R-048
	OFl120-RW-240-U	113715U	110-230 VAC	Medium intensity type A and B	L-865/L-864, dual color medium intensity	3 x OFP-120-RW-10L-U + OFP-CAB-6P-L-RW-240-U
	OFl120-WW-240-U	113713U		Medium intensity type A	L-865 white medium intensity	
	OFl120-R-240	113714U		Medium intensity type B	L-864 red medium intensity	3 x OFP-120-R-10 + OFP-JB-6P-R + OFP-CAB-6P-6E-R-240

- For more than 4 flasheads, "design your kit", see page 48-49

OFP-180 with complete remote power supply

The led OBSTAFLASH medium intensity is a white, red or dual color flashing obstruction light with complete power supply in the cabinet. The OBSTAFLASH is compliant with ICAO medium intensity type A and B/C.



Patent : EP 1966535B1 & US 7816843



2 or more Flashhead around obstacle

- 3 led projectors per flashhead
- Aluminium and glass envelope
- Modular design
- Easy maintenance
- Precise optic
- All electronic in stainless cabinet



Patent : EP 1966535B1 & US 7816843



Power cabinet

- Available in 48 Vdc or 120 /230 Vac
- Surge protection
- Automatic day/night switch with photocell
- Luminous indicator for each led circuits
- Test button for day and night
- Modular design
- Two side lights in option low intensity type
- Alarm contact
- Master/slave configuration for multiple lights synchronization

OFP - 180 - XX - XXX

- connexion
- Color
- horizontal beam
- X : projectors with X meter cable (1, 2, 5, 10m) without connector (no junction box)
- XL : projectors with X meter cable (1, 2, 5, 10) + connector (no junction box)
- JB : with junction box including 1 cable entry per projector and 1 cable entry to power supply
- JBL : with molded junction box with 6 connectors projector + one connector for power supply
- R : red projector
- RW : dual color projector
- 120 : 2 projectors
- 180 : 3 projectors
- 360 : 6 projectors

CABLE-OFP - 3P - XX - X

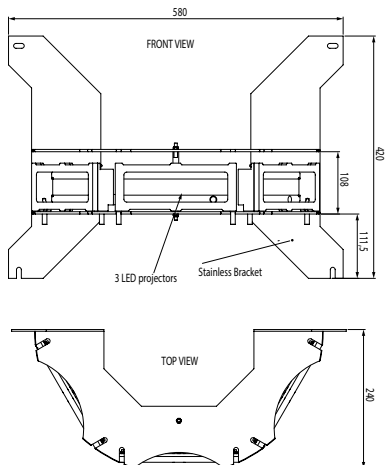
- X : X meter
- XS : X meters with one connector plug to junction box JBL or JBH
- Color
- R : red projector
- RW : dual color projector

OFP-CAB - XP - XE - XX - XXX

- input voltage
- Color
- connection to light(s) or projectors
- quantity of projector
- 048 : power supply 48Vdc
- 240 : power supply 110-240Vac
- BAT : power supply 110-240Vac with 4 batteries 12V 12Ah
- R : red only
- RW : red and white
- WW : white day and night
- W : white during day only + low intensity at night
- XE : X number of cable entry per light
- L : connector Lumberg (1 per dual color projector)
- XP : X total quantity of projectors (1 up to 12 dual color or 2 to 36 red)

WEIGHT & DIMENSIONS (IN MM)

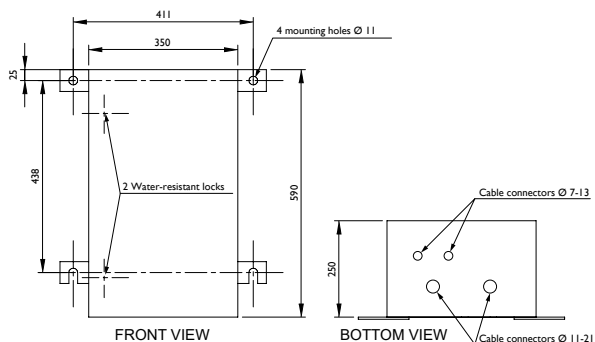
OFP-180



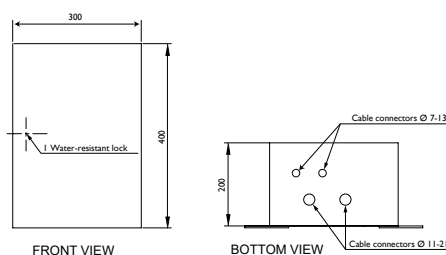
Weight: 14 kg, IP degree IP66



Power cabinet for 3 to 4 flashheads OFP-180-RW



Power cabinet for 2 flashheads OFP-180-RW and 2 to 12 flashheads OFP-180-R



MAIN CHARACTERISTICS

Main characteristics	Effective Luminous output on site at 0°		Color		Beam Spread		Flashes per minute
	Day	Night	Day	Night	Vertical	Horizontal	
Red only	light off	2000 Cd	light off	Red	> 3°	360° with 2 flashheads minimum	As per ICAO
White only	20 000 Cd	2000 Cd or off	White	White or off			
Dual color	20 000 Cd	2000 Cd	White	Red			

MAIN REFERENCE

Dual color obstruction lighting system type A+B/C (or white only)	Designation	Part number
2 to 4 Flashheads with stainless junction box	OFP-180-RW-JB	113738
Connecting cable between flashhead and power cabinet	CABLE-OFP-3P-RW (cable 8G1.5)	113805
Power cabinet	OFP-CAB-XP-XE-RW-XXX	See p 53 for designation

Red only obstruction lighting system type B/C	Designation	Part number
2 to 12 Flashheads with stainless junction box	OFP-180-R-JB	113745
Connecting cable between flashhead and power cabinet	CABLE-OFP-3P-R (cable 5G1.5)	113160
Power cabinet	OFP-CAB-XP-XE-R-XXX	See p 53 for designation

OFP-120 with complete remote power supply

The led OBSTAFLASH medium intensity is a white, red or dual color flashing obstruction light with complete power supply in the cabinet. The OBSTAFLASH is compliant with ICAO medium intensity type A and B/C.

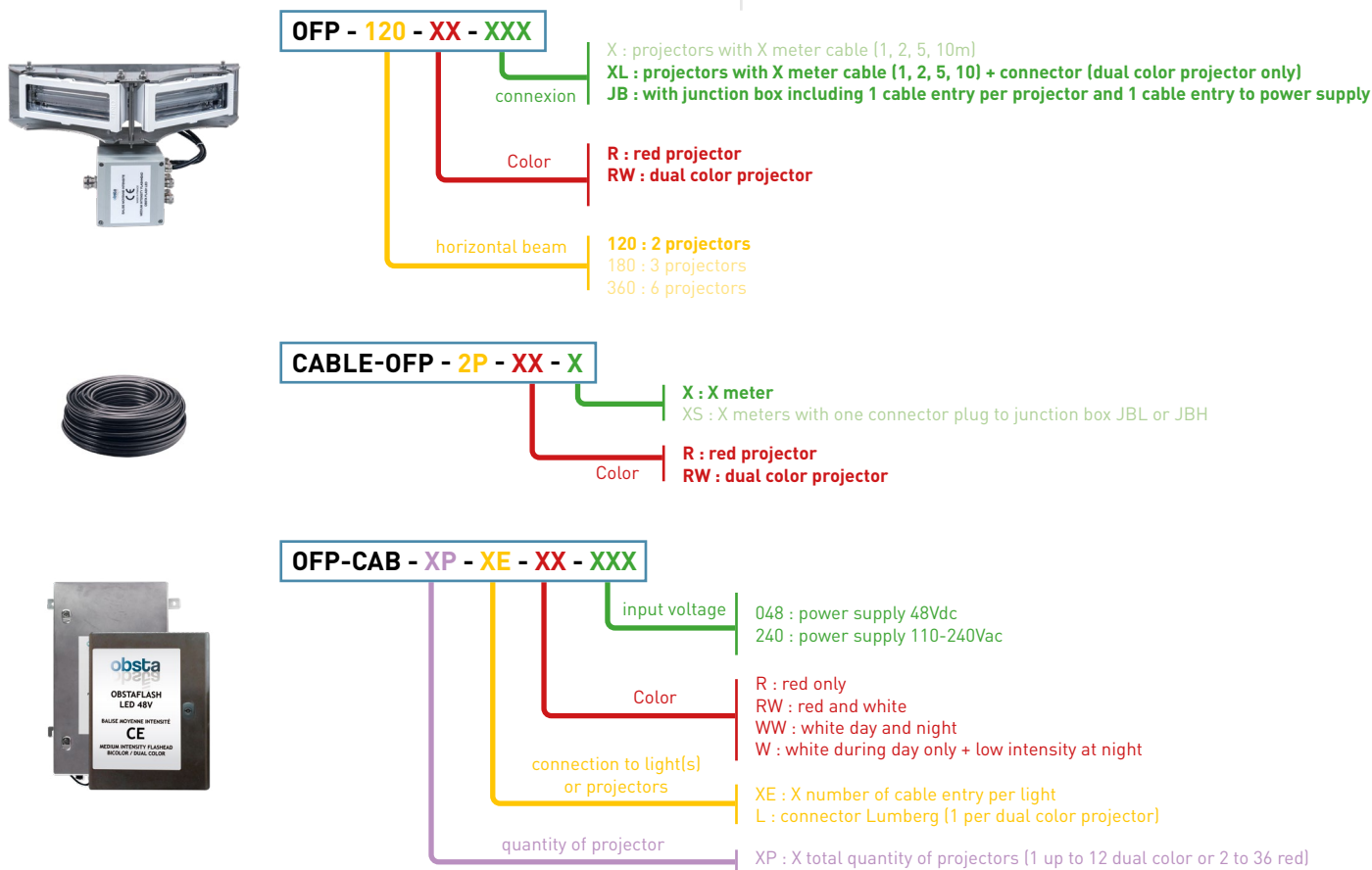


3 or more Flashhead around obstacle

- 2 led projectors per flashhead
- Aluminium and glass envelope
- Modular design
- Easy maintenance
- Precise optic
- All electronic in stainless cabinet

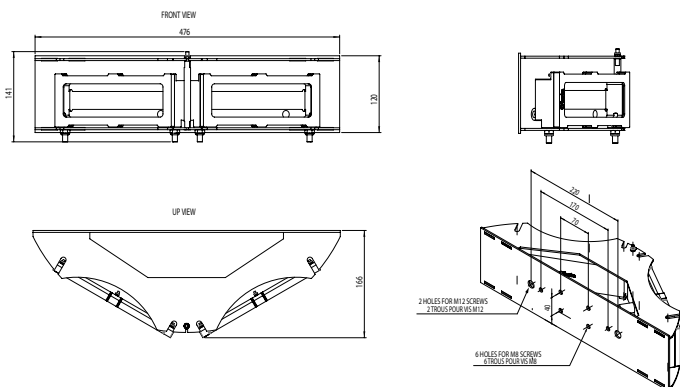
Power cabinet

- Available in 48 Vdc or 120 /230 Vac
- Surge protection
- Automatic day/night switch with photocell
- Luminous indicator for each led circuits
- Test button for day and night
- Modular design
- Two side lights in option low intensity type
- Alarm contact
- Master/slave configuration for multiple lights synchronization

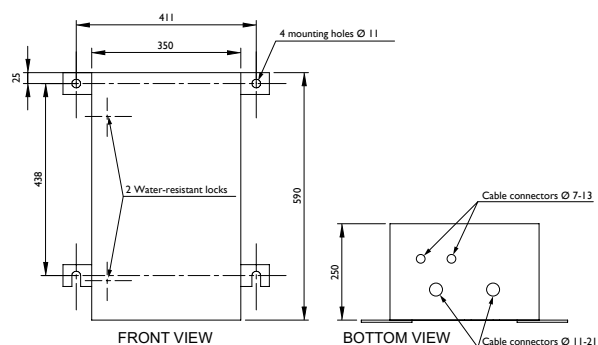


WEIGHT & DIMENSIONS (IN MM)

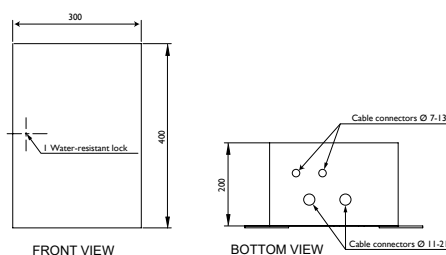
OFP-120



Power cabinet for 4 to 6 flashheads OFP-120-RW



Power cabinet for 3 flashheads OFP-120-RW and 3 to 12 flashheads OFP-120-R



MAIN CHARACTERISTICS

Main characteristics	Effective Luminous output on site at 0°		Color		Beam Spread		Flashes per minute
	Day	Night	Day	Night	Vertical	Horizontal	
Red only	light off	2000 Cd	light off	Red	> 3°	360° with 3 flashheads minimum	As per ICAO
White only	20 000 Cd	2000 Cd or off	White	White or off			
Dual color	20 000 Cd	2000 Cd	White	Red			

MAIN REFERENCE

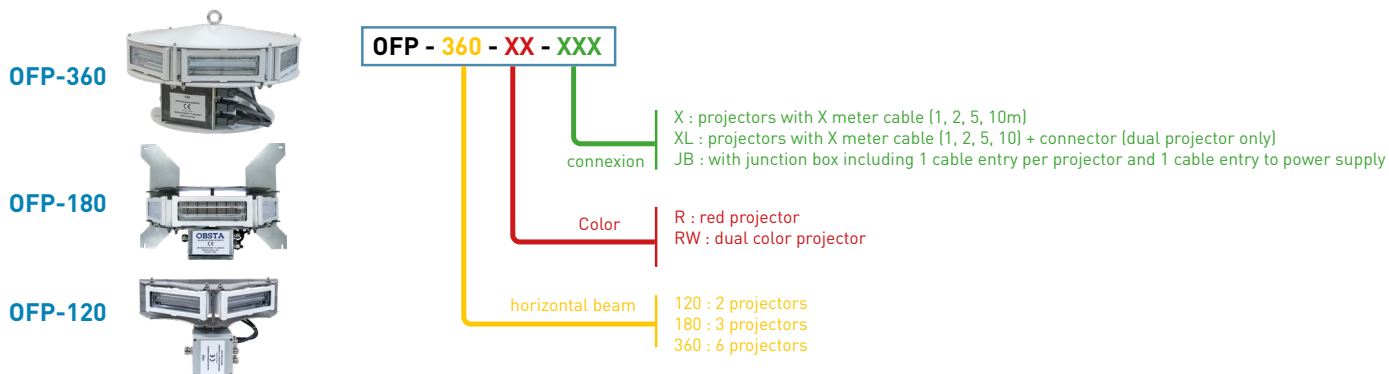
Dual color obstruction lighting system type A+B/C (or white only)	Designation	Part number
3 to 6 Flashheads with stainless junction box	OFP-120-RW-JB	113747-JB
Connecting cable between flashhead and power cabinet	CABLE-OFP-2P-RW (cable 8G1.5)	113805
Power cabinet	OFP-CAB-XP-XE-RW-XXX	See p 53 for designation

Red only obstruction lighting system type B/C	Designation	Part number
3 to 12 Flashheads with stainless junction box	OFP-120-R-JB	113752-JB
Connecting cable between flashhead and power cabinet	CABLE-OFP-2P-R (Cable 4X1.5)	113161
Power cabinet	OFP-CAB-XP-XE-R-XXX	See p 53 for designation

Design your Medium intensity kit with flashheads OFP-XXX.. with projectors 120, 180, 360° and with a power supply OFP-CAB-XX...

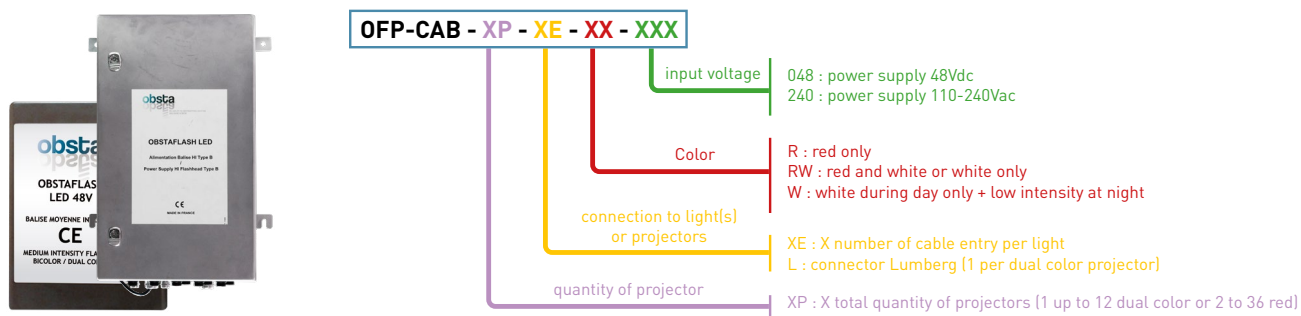
1. Choose the flashheads

The OFP medium intensity series is available in 3 configurations OBSTAFLASH120, OBSTAFLASH180 and OBSTAFLASH 360 in dual color or red only.

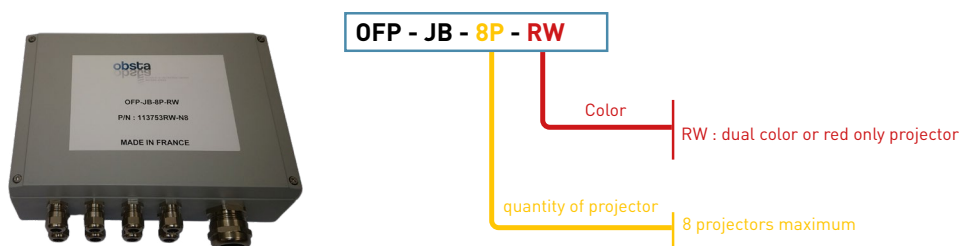


2. Define the power cabinet

Product range OFC-CAB. OBSTA Cabinet for OFC with/without low intensity. The power cabinet depends on the number of flash-heads, their configuration (2, 3 or 6 projectors) and their color (red, white or dual color)

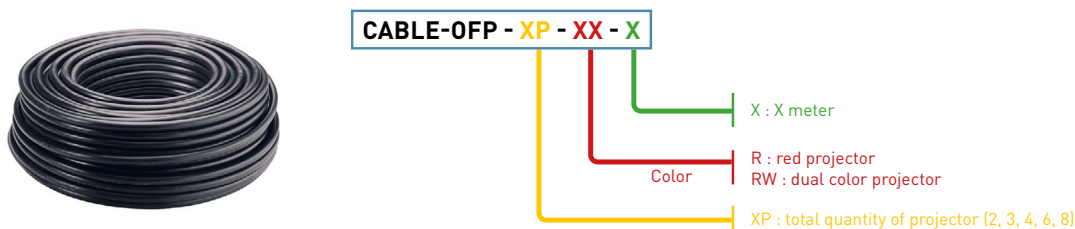


3. Junction box in option (if not already coded with the flashhead)



4. cable in option

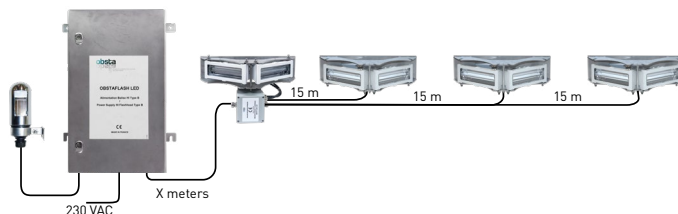
Interconnecting cable between OFP junction box and OFP cabinet. Cable depending on numbers of projectors and their color.



Typical configuration

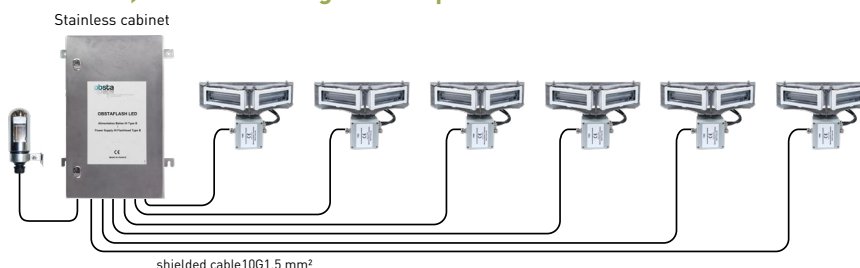
4 dual color obstafash120 + 15 meters molded cable + junction box + power cabinet

Quantity	Designation
4	OFP-120-RW-15
1	OFP-JB-8P-RW
1	OFP-CAB-8P-RW-240
1	Photocell-48
X meters	cable OFP-8P-RW-X



6 dual color obstafash120 with junction box, interconnecting cable & power cabinet

Quantity	Designation
6	OFP-120-RW-JB
1	OFP-CAB-12P-6E-RW-240
1	Photocell-48
X meters	shielded cable 10G1,5



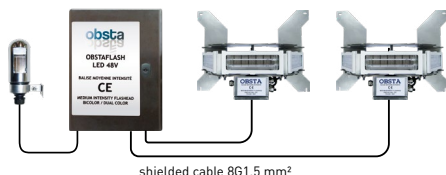
4 red obstafash120 with junction box & power cabinet

Quantity	Designation
4	OFP-120-R-JB
1	OFP-CAB-8P-4E-R-240
1	Photocell-48
X meters	shielded cable 3G1,5



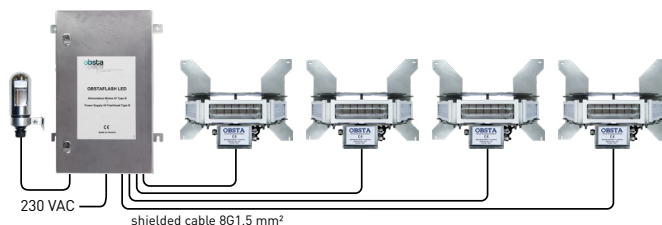
2 dual color obstafash180 + junction box & power cabinet

Quantity	Designation
2	OFP-18-RW-JB
1	OFP-CAB-6P-2E-RW-240
1	Photocell-48
X meters	shielded cable 8G1,5



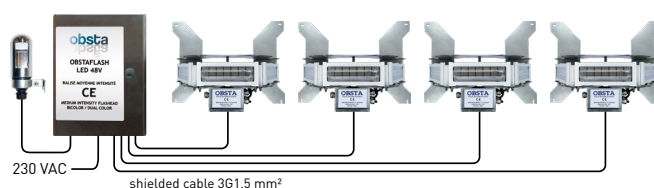
4 dual color obstafash180 + junction box & power cabinet

Quantity	Designation
4	OFP-18-RW-JB
1	OFP-CAB-12P-4E-RW-240
1	Photocell-48
X meters	shielded cable 8G1,5



4 red obstafash180 + junction box & power cabinet

Quantity	Designation
4	OFP-18-R-JB
1	OFP-CAB-12P-4E-R-240
1	Photocell-48
X meters	shielded cable 3G1,5



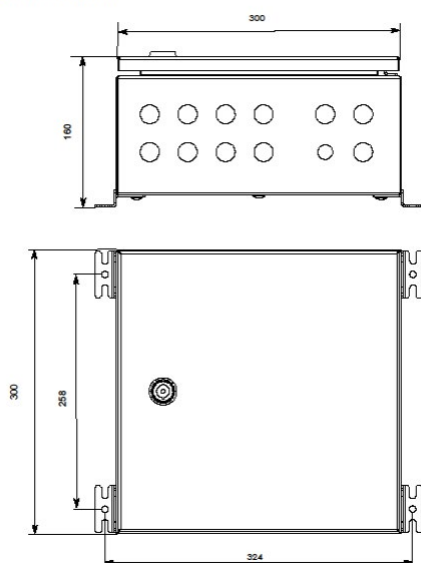
CONTROLLER FOR RED LIGHTS

Stainless control box to facilitate the implementation and monitoring of red medium and low intensity OBSTA lights. These metal boxes are suitable for EMC environments and severe climatic conditions.



- cable inputs by gland nickel plated brass
- 8 terminal connections for max 8 medium intensity lights and/or low intensity lights red fixed or mimic with medium intensity red flashing
- 1 visual indicator per light (or group of light)
- surge protection
- connection of optional photocell
- alarm relay per lamp, for the photocell and for the power supply
- on/off switch and remote/manual switch to bypass the photocell or GPS

Les dimensions sont en mm
All dimensions are in mm



MAIN CHARACTERISTICS

Part number	Voltage	Number of OBSTA lights
113176-240	110-240 VAC	8 OFC and/or NAVILATE 240 V (or 5 OFI360 240 V only)
113176-048	48 VDC	8 OFC and/or NAVILETE 48 VDC

PHOTOCELL



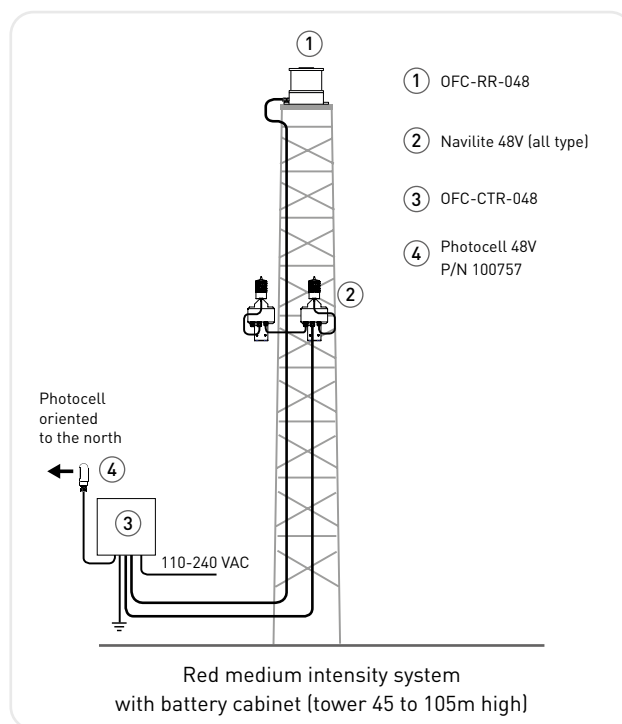
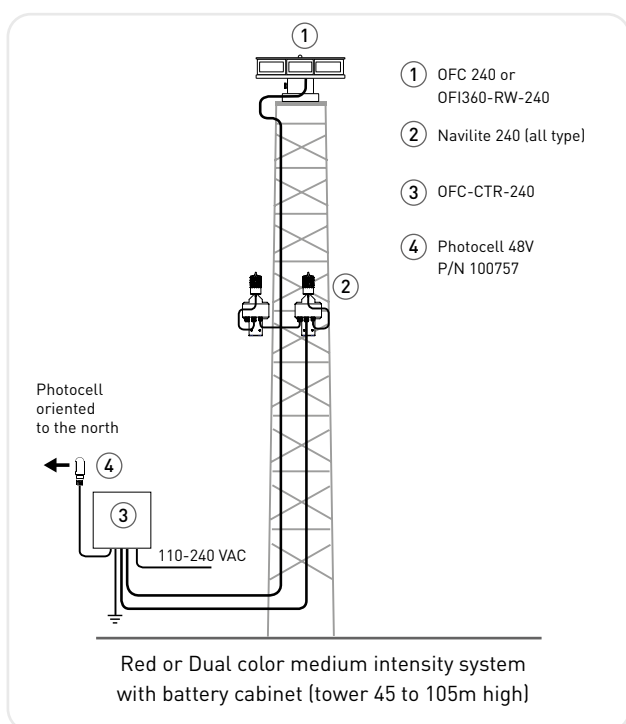
Photocell for night only operation or dual color light

- plug-in modular construction with plated contact surfaces
- automatic control of the obstruction lighting according to ambient light
- timer to prevent the functioning of the cell at inopportunes times (eg lightning)
- energy savings
- increased operational autonomy (power per power cabinet)
- works with all types of OBSTA lights (110 VAC, 230VAC, 48VDC and 24VDC) for night only operation or changing mode (day/night)
- 2 sensors for twilight and night mode

MAIN CHARACTERISTICS

PHOTOCELL	Power supply	Switching threshold of the cell
100756	110 to 240 VAC	50 lux and 500 lux
100757	12, 24 or 48 VDC	

Typical configuration for towers with 2 levels of obstruction lights



LED OBSTAFLASH HI type A

The led OBSTAFLASH high intensity is a white color flashing obstruction light.

The OBSTAFLASH is compliant with ICAO high intensity type A, and in option medium intensity type B or C at night.



Patent : EP 1966535B1 & US 7816843

Flashhead

- 8 led dual color projectors
- Aluminium and glass envelope
- Modular design
- Easy maintenance
- Precise optic, low power consumption

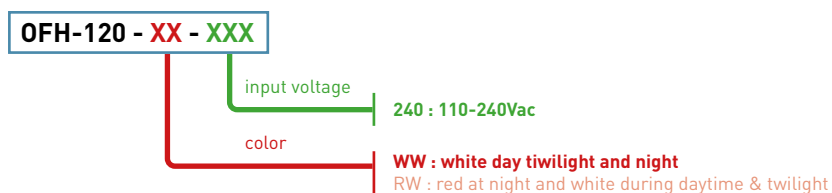
Description

- 200 000 candelas during day time in white
- 20 000 candelas during twilight in white,
- 2000 candelas during the night white (red medium intensity type B or C in option),
- Rugged design
- Easy installation

Power cabinet per flashead

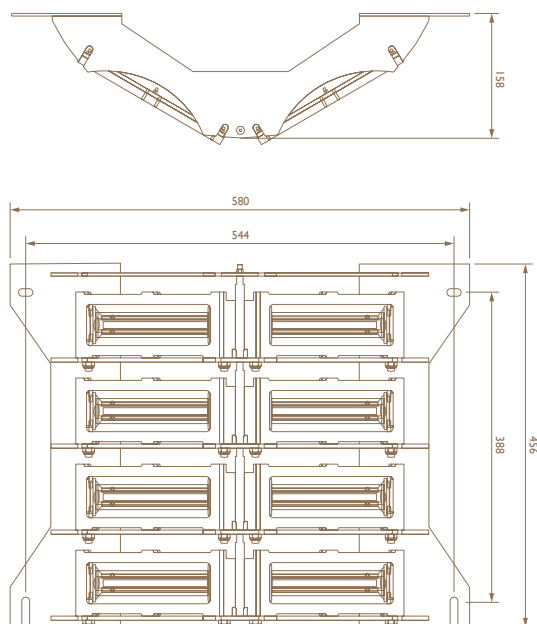
- Weathertight stainless steel enclosures (in vertical position),
- Surge protection
- Alarm monitoring
- Automatic day/twilight/night switch by photocell
- Luminous indicator for each projector
- Test button for day, twilight and night mode
- Modular design
- Low power consumption

Product range OBSTAFLASH OFH ICAO High Intensity type A / CAA



WEIGHT AND DIMENSIONS (IN MM)

Flashhead



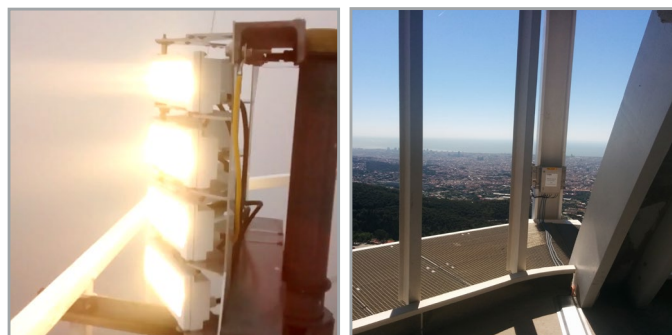
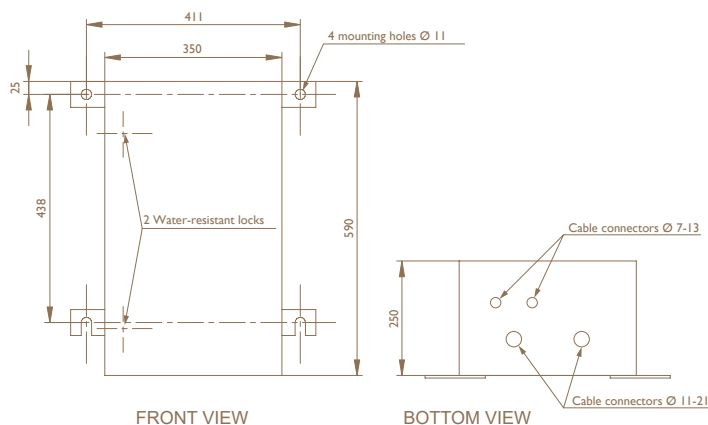
COMPOSITION

Obstruction lighting system 230 V - 50Hz	Part Number
Flashead + power cabinet	113780
Photocell day/twilight/night	113135
HI controller	113625L

OTHER CHARACTERISTICS

- IP degree: 66 for the projectors and 65 for the stainless cabinet in vertical position,
- Weight per cabinet: 15kg,
- Weight per flashhead: 18kg (1kg per projector and 10kg for the stainless bracket),
- Temperature -30°C to +55°C,
- day/twilight/night automatic switch by external photocell
- Autonomous synchronisation (master/slave configuration) or with external controller
- GSM modem with optical network for remote diagnostic.

POWER CABINET



Main supply	Frequency	Average wattage during day time
110V up to 240V	50/60 Hz	160 W

MAIN REFERENCE

Designation	part number	Luminous Intensity			Beam spread		Flashes/minute
		Day	Twilight	Night	Vertical	Horizontal	
OFH-120-WW-240	113780	200 000 Cd	20 000 Cd	2000 Cd	> 3°	120°	40



BALISOR

High-voltage lines are major hazards for low-flying aircraft. Placing beacons on pylons is not sufficient to ensure safety due to the very long spans of cable (extract of Aerodrom Design Manual chapter 14.7 annex 4).

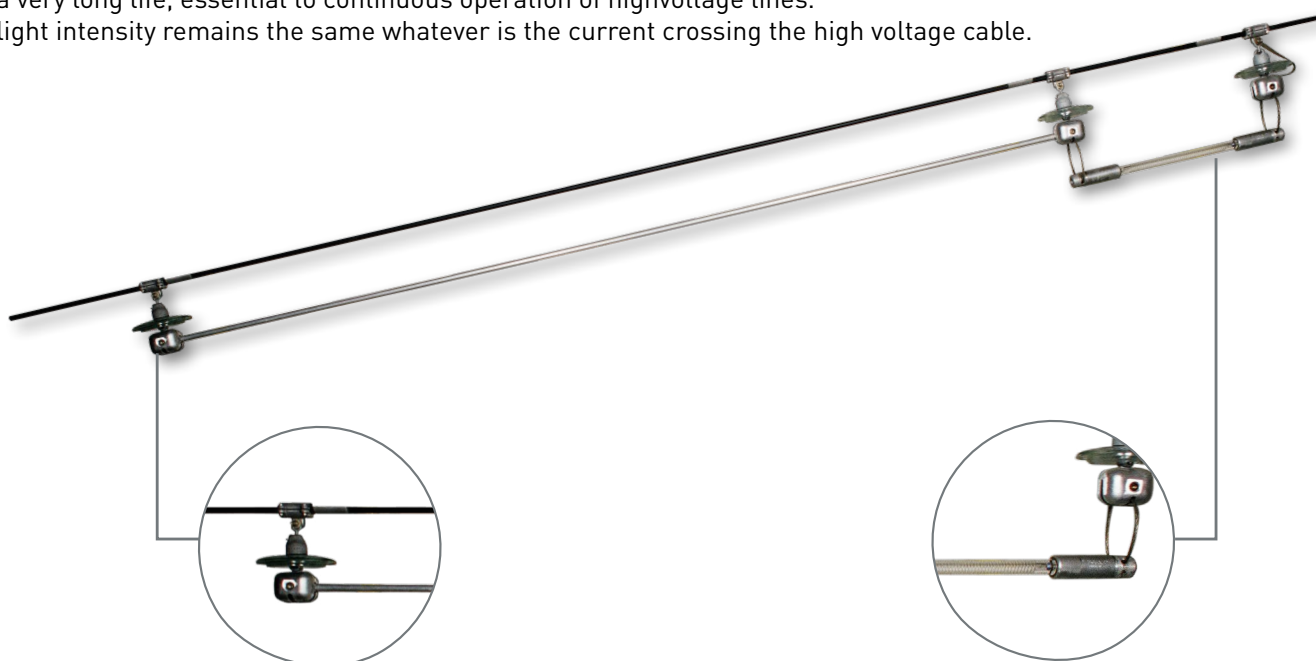
The BALISOR® system (created by OBSTA in the 60's) is a beacon for high voltage lines. Its conductors take the power required directly from the line.

The system is, therefore, completely self-contained.

Our standard model of BALISOR® fall into the ICAO low intensity category.

The neon discharge offers :

- inherent generation of «aviation» red light,
- a very long life, essential to continuous operation of highvoltage lines.
- light intensity remains the same whatever is the current crossing the high voltage cable.



Fixing accessories

- fixing accessory and capacitive elements in aluminium
- flexible mounting - no rigid fixation
- clamp adapted to the diameter of the cable
- exists with cable antenna

Cold neon discharge light

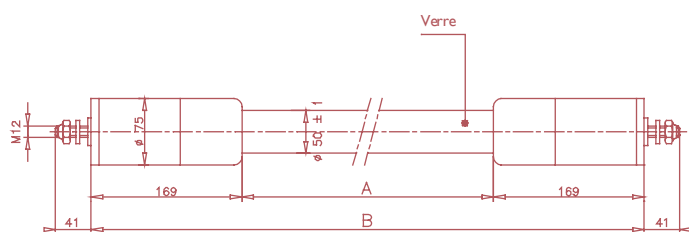
- hard glass envelope and tube
- "aviation" red light
- very long lifetime,
- excellent luminous efficiency
- low power consumption

MAIN CHARACTERISTICS

Designation	Part number	Luminous intensity	Voltage of the line	Interference suppression	Typical lifetime
BALISOR-lamp-B49	100618	> 10 Cd	60 kV to 550 kV	yes	> 100 000 h.
BALISOR-lamp-B33 (for balisor with cable antenna)	100616	> 10 Cd	60 kV to 400 kV	yes	> 100 000 h.

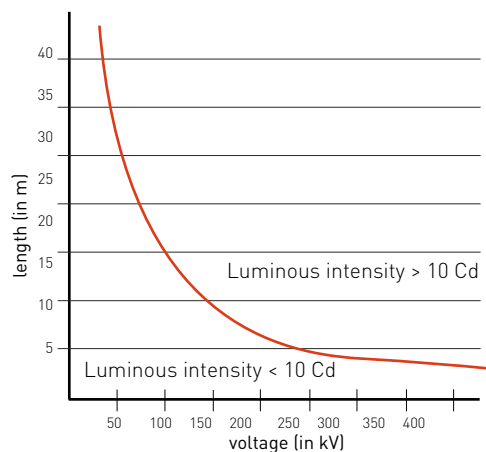


WEIGHT AND DIMENSIONS (IN MM)

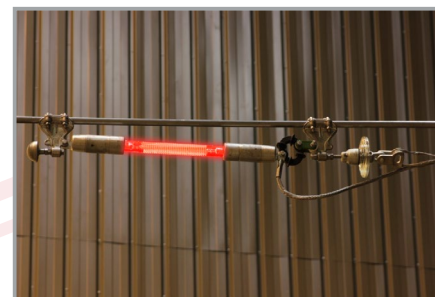
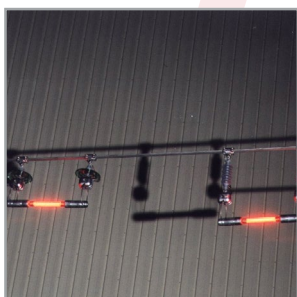
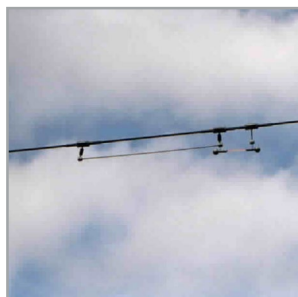


Type	A	B	Weight
Lamp type B49	563 +/- 5	901 +/- 5	4.7 kg
Lamp type B33	376 +/- 5	714 +/- 5	4 kg

Length of the drift depending on the voltage



Unit weight	Code	Désignation	Number of elements depending on voltage line			
			115 kV	132 kV	220 kV	380 kV and more
0.85 kg	100637	Clamp	7	6	4	3
3.50 kg	100621*	Insulator	7	6	4	3
0.10 kg	100636*	Shunt braid	1	1	1	1
0.50 kg	100628	Simplified auxiliary holder	7	6	-	-
2.00 kg	100631	Lampe holder	-	-	2	2
1.35 kg	100632	Auxiliary tubing holder	-	-	2	1
1.90 kg	100623	Auxiliary tubing	5	4	2	1
0.50 kg	100606	Flexible connector	2	2	-	-
0.50 kg	100624	Lamp end suspender	2	2	-	-
4.70 kg	100618	BALISOR B lamp	1	1	1	1
4.00 kg	100616	BALISOR B33	-	-	-	-



Balisor with rigid capacitive element

Balisor with cable antenna



WARNING SPHERES

Those spherical markers are compliant with International Civil Aviation Organization (ICAO) recommendations annex 14 chapter 6 :

Paragraph 6.2.8: A marker displayed on a overhead wire, cable etc. should be spherical and not have a diameter of not less than 600mm

Paragraph 6.2.10: A marker should be of one color. When installed, white and red, or white and orange markers should be displayed alternately. The color selected should contrast with the background against it will be seen.



Warning spheres

- quick installation: easy and quick assembly with 6 nuts (no losing bolts)
- diameter: 610 mm
- material: polyethylene
- weight: 4 kg
- colors : orange aviation or white
- clamps: adapted to the diameter of the cable
- optional armor rods for cable and OPGW (consult us)

MAIN CHARACTERISTICS

OBSTA part number	Color *	Clamp diameter *	Armor rod *
113655	Red aviation, orange aviation, white	From 9.3 mm to 54.8 mm	Optional

* to be defined when ordering



ALUMINIUM WARNING SPHERES

The spherical markers are compliant with International Civil Aviation Organization (ICAO) recommendations annex 14 chapter 6 :

Paragraph 6.2.5.4: A marker displayed on an overhead wire, cable, etc., should be spherical and have a diameter of not less than 60 cm.

Paragraph 6.2.5.5: The spacing between two consecutive markers or between a marker and a supporting tower should be appropriate to the diameter of the marker, but in no case should the spacing exceed 30 meters where the marker diameter is 60 cm. Where multiple wires, cables, etc., are involved, a marker should be located not lower than the level of the highest wire at the point marked.



Warning spheres

- Designed for high voltage cable up to 420KV
- No losing parts during installation with only 2 screws and 4 draw latches
- overall diameter 600mm
- material: aluminum
- weight: 6.5kg
- color: white, red or aviation orange
- clamps depending on the diameter of the cable

MAIN CHARACTERISTICS

OBSTA part number	Color *	Diameter of clamps *
113655AL	Red, orange or white	from 9 mm up to 67 mm

* to be specified at time order

EFFAROUCHEUR

This bird diverter is designed to increase the visibility of overhead lines and reduce the incidence of bird collisions with overhead cables. Extensive field studies have shown that when installed properly diverters significantly decrease bird strikes.



DESCRIPTION

- Easy “bump and snap” installation on the cable
- No special tools required
- Simple, cost-effective design
- Lightweight (total weight = 180g)
- Manufactured from UV-stabilized polycarbonate and polyethylene materials
- All metal hardware is corrosion-resistant stainless steel

MAIN CHARACTERISTICS

Part number	Operating temperature	Weight	Cable diameter	Color
100951	100 °C max	180 g	Ø up to 40 mm	Yellow

This kit includes a controller using with a touch screen through SNMP and internet capability.

Level	D6	D7	D8	D9	D10	D11	D12
Output	1	2	3	4	5	6	7
Input	8	9	10	11	12	13	14
Output	15	16	17	18	19	20	21
Input	22	23	24	25	26	27	28
Output	29	30	31	32	33	34	35
Input	36	37	38	39	40	41	42
Output	43	44	45	46	47	48	49
Input	50	51	52	53	54	55	56
Output	57	58	59	60	61	62	63
Input	64	65	66	67	68	69	70
Output	71	72	73	74	75	76	77
Input	78	79	80	81	82	83	84
Output	85	86	87	88	89	90	91
Input	92	93	94	95	96	97	98
Output	99	100	101	102	103	104	105
Input	106	107	108	109	110	111	112
Output	113	114	115	116	117	118	119
Input	120	121	122	123	124	125	126
Output	127	128	129	130	131	132	133
Input	134	135	136	137	138	139	140
Output	141	142	143	144	145	146	147
Input	148	149	150	151	152	153	154
Output	155	156	157	158	159	160	161
Input	162	163	164	165	166	167	168
Output	169	170	171	172	173	174	175
Input	176	177	178	179	180	181	182
Output	183	184	185	186	187	188	189
Input	190	191	192	193	194	195	196
Output	197	198	199	200	201	202	203
Input	204	205	206	207	208	209	210
Output	211	212	213	214	215	216	217
Input	218	219	220	221	222	223	224
Output	225	226	227	228	229	230	231
Input	232	233	234	235	236	237	238
Output	239	240	241	242	243	244	245
Input	246	247	248	249	250	251	252
Output	253	254	255	256	257	258	259
Input	260	261	262	263	264	265	266
Output	267	268	269	270	271	272	273
Input	274	275	276	277	278	279	280
Output	281	282	283	284	285	286	287
Input	288	289	290	291	292	293	294
Output	295	296	297	298	299	300	301
Input	302	303	304	305	306	307	308
Output	309	310	311	312	313	314	315
Input	316	317	318	319	320	321	322
Output	323	324	325	326	327	328	329
Input	330	331	332	333	334	335	336
Output	337	338	339	340	341	342	343
Input	344	345	346	347	348	349	350
Output	351	352	353	354	355	356	357
Input	358	359	360	361	362	363	364
Output	365	366	367	368	369	370	371
Input	372	373	374	375	376	377	378
Output	379	380	381	382	383	384	385
Input	386	387	388	389	390	391	392
Output	393	394	395	396	397	398	399
Input	400	401	402	403	404	405	406
Output	407	408	409	410	411	412	413
Input	414	415	416	417	418	419	420
Output	421	422	423	424	425		

- Voltage of each led circuits
- Voltage of the power supply or batteries
- Temperature (only available with the gprs modem)

2 solutions are possibles :

- either by using the OBSTA web site
- either through a dedicated server using a WAR application (code and support given by OBSTA).

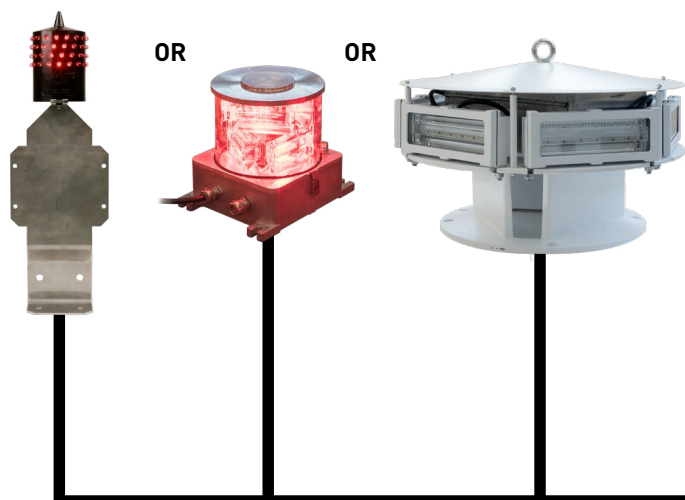
59



SOLAR POWER SYSTEM

This kit consists of one or two lamps in redundancy, 12V to 48 VDC, low and/or medium intensity, that must be installed on top of the obstacle.

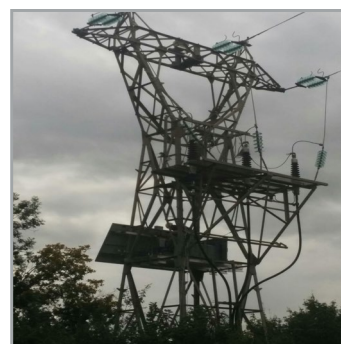
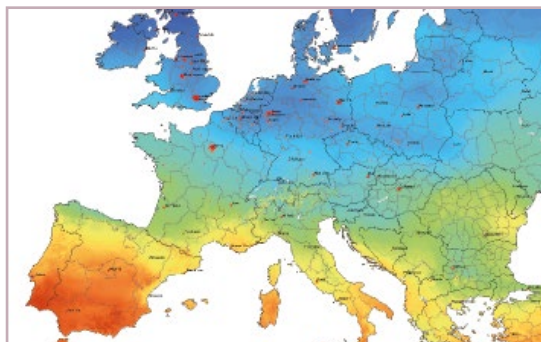
These solar kits are designed for long life (size of the batteries includes more than 5 days of autonomy) and easy access for the maintenance of the batteries



GPS synchroniser

- one or more photovoltaic panel(s)
- a charge controller
- long lifetime gel battery
- an aluminium frame with angle or vertical mounting bracket and battery box
- optional : 2 lights in redundancy with tilt of the main light to the emergency light in case of failure
- nominal battery capacity : 5 to 10 days depending on latitude
- easy access for maintenance of the battery

The size of the solar panel and of the battery depends on the location of the installation.
Please contact us for more information.





HELITE-G-24

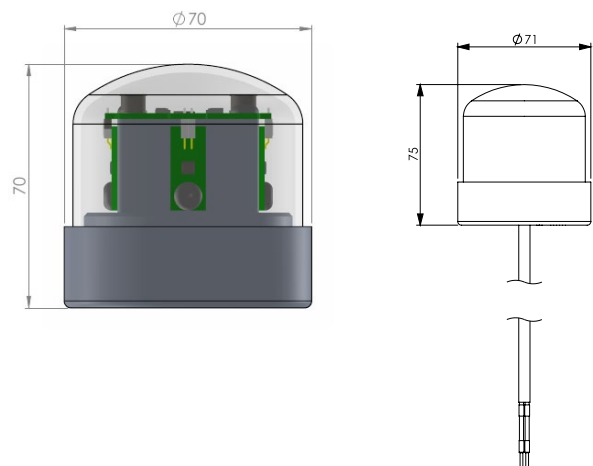
Helipad light (TLOF)



Key points

- hard glass
- compact
- low power consumption
- compliant with ICAO Annex 14 Volume II
- DC power supply with battery cabinet in option
- LED technology (no maintenance)
- frangible support in option
- light weight
- feet in option

dimensions (in mm)

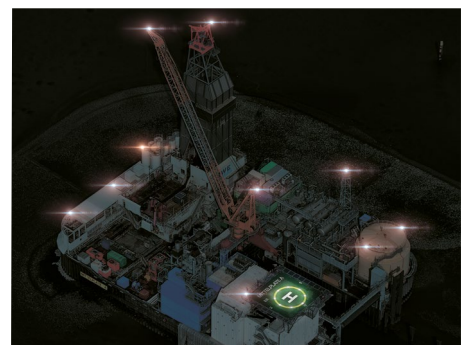
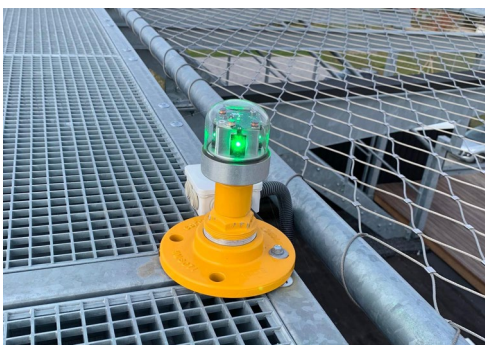


In option

- 24 VDC power cabinet for 12 hours back-up (powered through 110 to 240 VAC)
- L-854 FM radio receiver/decoder is 100 % frequency and squelch field tunable within the 118-136 MHz air-band to switch on the lights with a series of 3, 5 or 7 microphones clicks.
- An integrated selectable timer shuts airfield lights off after 15, 30 or 60 minutes.

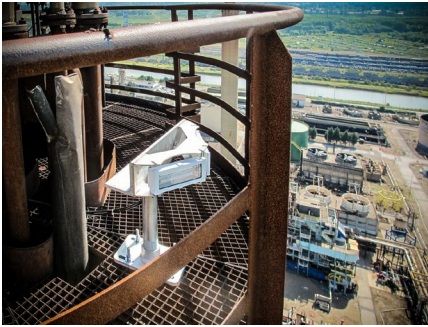
MAIN CHARACTERISTICS

Designation	Part number	Operating temperature	Color	IP degree	Attachment	Luminous intensity	Power supply
HELITE-G-24	113975	-30/+60°C	green	IP66	1 NPT threaded holes or 3 M4 0.7	>32cd	3w 10-36Vdc



Some OBSTA references on all continents and conditions

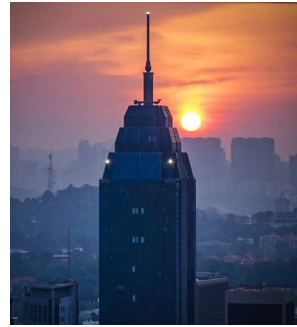
FRANCE, Oil and Gas Chimney



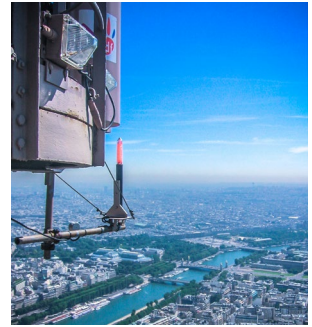
SPAIN, Barcelona Tower



MALAYSIA, Kuala Lumpur



PARIS, Eiffel Tower



FRANCE, Millau



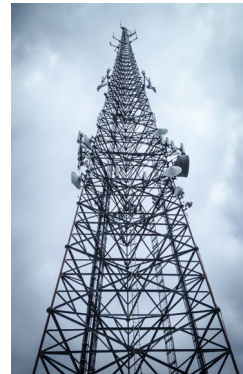
CHINA, Hong Kong



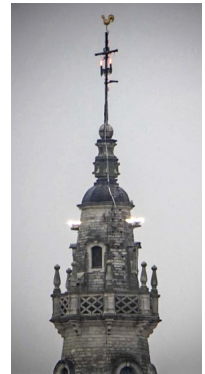
PARIS, Montparnasse Tower



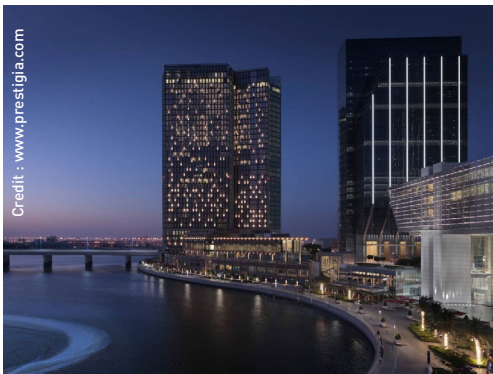
USA, Texas



BRUXELLES, Diegem



ABU DHABI, Four Seasons Hotel



BEIRUT, Damac Vercase Tower



ST PETERSBURG, Gazprom tower



NIGERIA, Lagos, Eko Towers



BELGIUM, Bruxelles airport



RUSSIA, Moscow



EGYPT, Ain Sokhna



ABU DHABI, UAE



Paris Airport, FRANCE. Working since 1973!





RELIABILITY IN OBSTRUCTION LIGHTING



RELIABILITY
IN OBSTRUCTION
LIGHTING



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