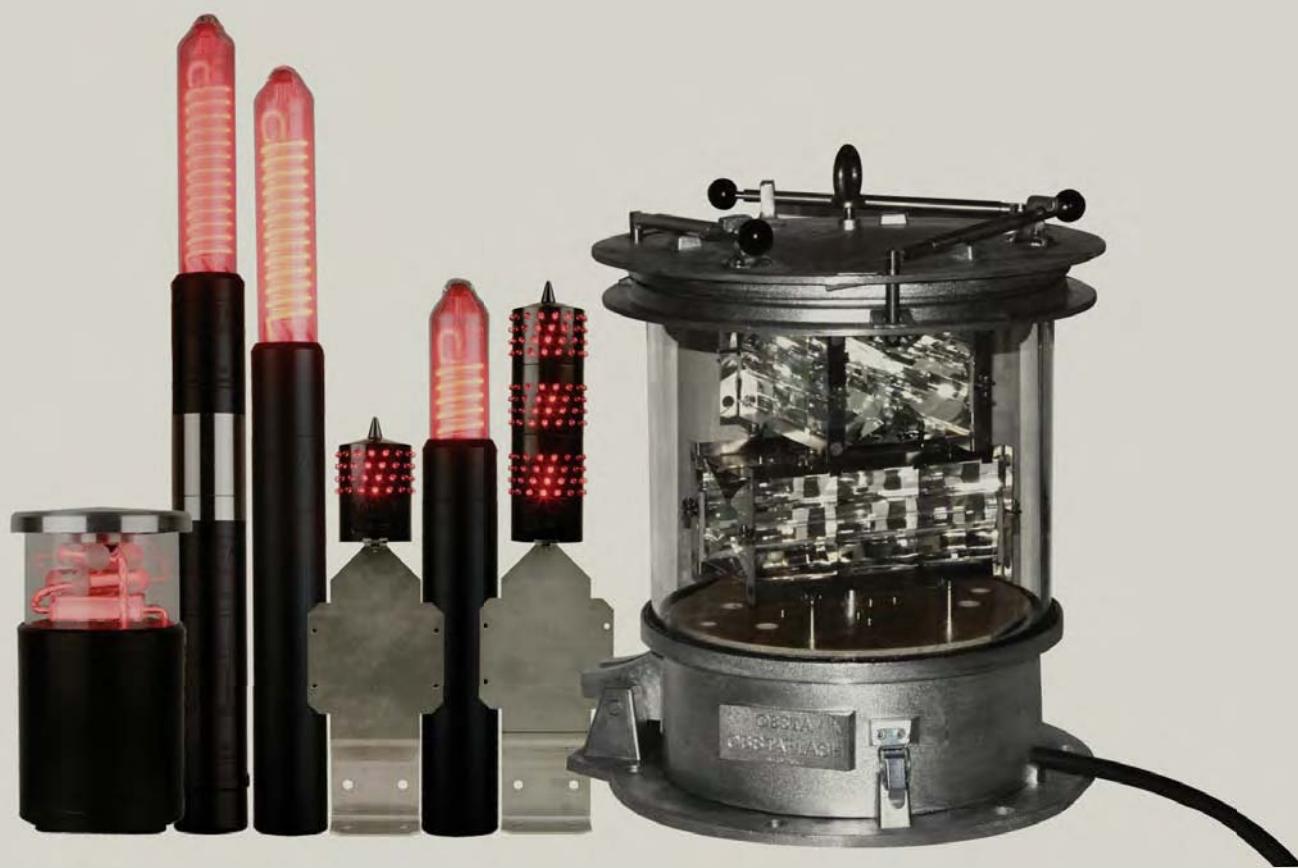
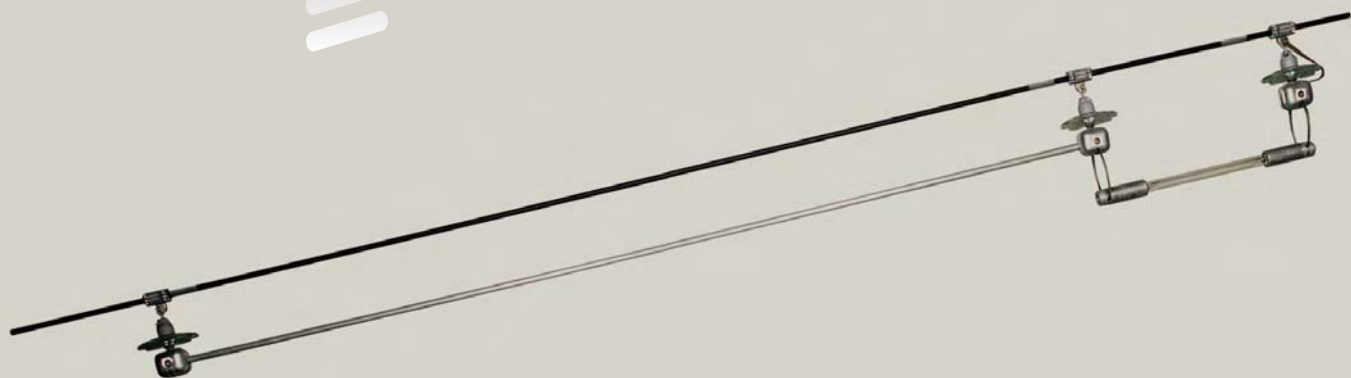














Reliability in obstruction lighting



obsta[®]
op2ps
///



	Introduction	4	
	Low Intensity lights	10	
	Medium Intensity lights	30	
	Balisors for transmission lines	36	
	Battery cabinets and Solar kits	38	
	Warning spheres	41	

A long history

- 1910** • Creation of the Claude company, inventor of the neon discharge lamp
- 1950** • Production of the first cold cathode neon obstruction lights
- 1960** • Invention of the first BALISOR to signal high-voltage transmission lines
- 1980** • Production of BALISOR with rigid capacitive elements
- 1992** • Acquisition of the company by the Citel group, leader in surge protection
- 2003** • Production of the first molded LED lamps
- 2008** • New head office in Sèvres
- 2011** • Production of new linear optic flashing lights

An international company

• France

Sèvres - Head Office
France and Export Sales Office

Reims - Production plant and logistics platform

• Presence through commercial subsidiaries of Citel group

Citel Electronics GmbH
Citel Inc
Shanghai Citel Electronics Co



The specialist in obstacle warning lights

OBSTA has developed over the last fifty years a range of high performance and durable lights.

• Glass conception

OBSTA and OBSTAFLASH lights have their optical and their envelope in hard glass. The glass offers the best durability:

- it does not scratch and is easy to clean,
- it keeps its transparency regardless of the environment (UV radiation, high temperature, sandstorm ..).
- its lifetime is limitless.

• Technology

OBSTA uses 3 types of long lifetime lights:

- OBSTA HI STI and BALISOR cold neon discharge range. Combined with our lengthy experience in hostile environments (EMC, climate, etc. ...), the principle of cold neon discharge lights gives a proven lifetime of decades on all types of obstacles, especially the radio towers, the transmission lines, exposures in high temperature environments that do not affect performance.

- LED obstruction light (NAVILITE series)

Theoretically at 20°C, LED lifetime can be as long as 100 000 hours (about 11 years). In reality, the LED's lifetime depends mainly ambient temperature, ambient electromagnetic fields and conception of the light like heat dissipation and power supply reliability. NAVILITE series has been designed in a one-piece molded assembly. The molding solution provides excellent heat dissipation for optimum LED performance and a perfect waterproofing. The separate AC transformer provides galvanic isolation of LEDs lens and cover against electromagnetic interference.

- OBSTAFLASH range - xenon obstruction light:

With their robust and modular design, the optical and body in hard glass, the body in aluminium and stainless steel cabinet, these flashing lights offer easy maintenance and high durability.











Benefits of OBSTA discharge lights

Lamp type	Climatic sensitivity	Electromagnetic sensitivity	Lifetime & Luminous intensity
Incandescence lamp	Yes (vibrations)	No	3 to 4 months (remaining constant and homogeneous)
Diode lamp	Yes (temperature)	Yes	Decades
Cold neon discharge	No	No (neon is a rare gas)	Decades without loss of luminous intensity
Xenon light	No	No (xenon is a rare gas)	Depending on the configuration (day & night, night only, flash rate and intensity)

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.

Extract from annex 14 ICAO

Extract from table 6-3. Characteristics of obstacle lights

Beacon categories		Color	Signal type (flashes per minute)	Day time light intensity in candelas	Twilight time light intensity in candelas	Night time light intensity in candelas
FAA	ICAO					
Low intensity						
	Low intensity type A	Red	Steady burning			≥ 10
L-810	Low intensity type B	Red	Steady burning			≥ 32.5
Medium intensity						
L-864	Medium intensity type B	Red	20-40 Epm (FAA) 20-60 (ICAO)			2,000 ± 25%
	Medium intensity type C	Red	Steady burning			2,000 ± 25%
L-865	Medium intensity type A	White	40 Epm (FAA) 20-60 (ICAO)	20,000 ± 25%	20,000 ± 25%	2,000 ± 25%
L-866	Medium intensity type A	White	60 Epm (FAA) 20-60 (ICAO)	20,000 ± 25%	20,000 ± 25%	2,000 ± 25%
High intensity						
L-856	High intensity type A	White	40 Epm	200,000 ± 25%	20,000 ± 25%	2,000 ± 25%
L-857	High intensity type B	White	40 Epm	100,000 ± 25%	20,000 ± 25%	2,000 ± 25%

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.

SELECTION GUIDE

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

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

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

DAY TIME MARKING

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)

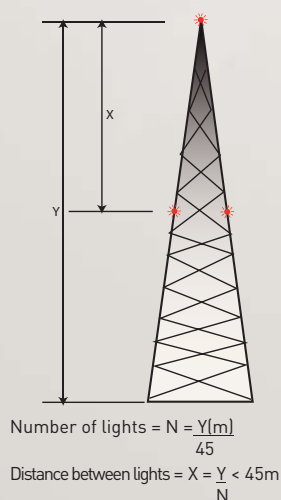
(The use of white strobe flashing light during day time eliminates the need to paint the obstacle with red and white stripes).

DAY AND NIGHT TIME MARKING

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

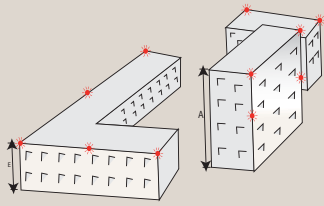
- white medium intensity light working day and night
- or white flashing lights working during day time and red lights working during night time.

POLE / TOWER



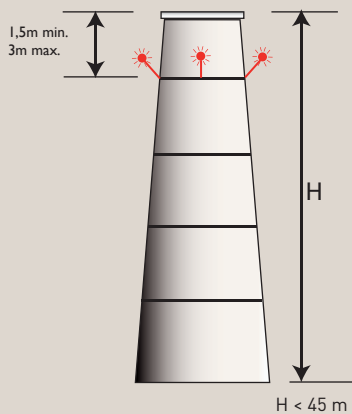
Height	Night time only	Day time only
Below 45m (150ft)	1 or 2 low intensity type A or B at the top (L-810)	1 or 2 white medium intensity type A (L-865) at the top of the pole.
45m (150ft) and above		
105m (350ft) and above	Red medium intensity light every 105m (350ft) maximum and low intensity type B (L-810) in between each level of medium intensity lights, every 52m (170ft) maximum.	Medium intensity light type A (L-865) every 105m (350ft) maximum.
150m (500ft) and above		Alternative: above a height of 150m (500ft) high intensity lights every 105m (350ft) maximum.

BUILDING



Height	Night time only	Day time only
Below 45m (150ft)	Low intensity lights type A of B (L-810) placed at each edge of the building and separated by a maximum distance of 45m (150ft)	Medium Intensity light type A (L-865) has to be displaced with 900m (2950ft) separation distance maximum.
45m (150ft) and above	Medium intensity lights type B (L-864) has to be displaced with 900m (2950ft) separation distance maximum.	
105m (350ft) and above		Medium intensity light type A type A installed every 105m (350ft) maximum.
150m (500ft) and above		Alternative: above a height of 150m (500ft) high intensity lights every 105m (350ft) maximum.

CHIMNEY



Height	Night time only	Day time only
Below 45m (150ft)	3 to 4 low intensity type A or B lights (L-810) all around the chimney, 1.5 to 3m (5 to 10 ft) below the top to avoid the smoke to hide the beacons	3 to 4 Medium Intensity type A lights (L-865) all around the chimney, 1.5 to 3m (5 to 10 ft) below the top.
45m (150ft) and above	Medium Intensity lights type B (L-864) all around the chimney, 1.5 to 3m (5 to 10 ft) below the top to avoid the smoke to hide the beacons. Lights every 105m and low intensity lights between each light every 52m maximum.	
105m (350ft) and above		Medium intensity type A lights every 105m (350ft) maximum
150m (500ft) and above		Alternative: above a height of 150m (500ft) high intensity lights every 105m (350ft) maximum.

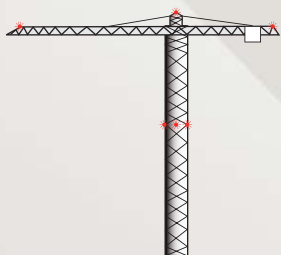
SELECTION GUIDE

WIND TURBINE



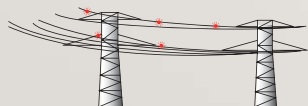
Night time only	Day time only
Medium Intensity type B (L-864)	Medium Intensity type A (L-865)

CRANES



Height	Night time only	Day time only
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 white medium intensity type A (L-865) at the top of the crane-top.
45m (150ft) and above	1 medium intensity type B (L-864) at the top of the crane-top.	

TRANSMISSION LINES



Height	Night time only		Day time 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 LIGHT CHOICES

	Model	Voltage	Comments
Low intensity type A & B (L-810)	NAVILITE <i>(page 10)</i>	12, 24, 48VDC	Light Emitting Diode beacon (LEDs)
	NAVILITE <i>(page 12)</i>	230VAC	
	NAVILITE HI <i>(page 14)</i>	12, 24, 48VDC	
	NAVILITE HI <i>(page 16)</i>	120VAC , 230VAC	
	OBSTA STIF <i>(page 20)</i>	12V & 24V	Cold discharge neon light with focalized optic and very low power consumption (OBSTA patent)
	OBSTA STI <i>(page 22)</i>	24, 48VDC	Cold discharge neon 5 and 13 turns and Balisor®
	OBSTA HISTI <i>(page 24)</i>	110VAC to 240VAC	
	OBSTA HISTIM <i>(page 26)</i> CLAUDE HI <i>(page 26)</i>	230VCA	
	BALISOR® <i>(page 24)</i>	High voltage power line 60KV to 550KV	
Medium Intensity Type A (L-865)	OBSTAFLASH WHITE <i>(page 30)</i>	230VAC & 24VDC	White flashing beacon working day and night or day only
Medium Intensity Type A (L-864)	OBSTAFLASH RED <i>(page 32)</i>	230VAC & 24VDC	Red flashing beacon working at night only
Medium Intensity Dual-color, type A day time & B night time	OBSTAFLASH DUAL COLOR <i>(page 34)</i>	230VAC & 24VDC	Dual color red and white beacon flashing white during the day and red at night

ACCESSORIES FOR JUNCTION, BACKUP SUPPLY AND WIRING

	Comments
Accessories for the LED NAVILITE lights <i>(page 18)</i>	These monitoring boxes with integrated photocells are for NAVILITE beacons.
Accessories for the neon OBSTA light <i>(page 28)</i>	These junction and monitoring boxes are recommended in presence of high electromagnetic fields or hard climatic conditions.
24V or 48VDC Battery cabinet <i>(page 38)</i>	These battery cabinets for 48VDC and 24VDC beacons insure a 12 hours working time in case of outage of the main supply.
Photocell <i>(page 39)</i>	These photocells are available for all kind of OBSTA lights 24VDC, 48VDC, 120VAC and 240VAC.
12V Solar Generator <i>(page 40)</i>	Solar generator system including one or two low intensity beacons working at night only.
Warning spheres <i>(page 41)</i>	Warning spheres for transmission lines and all kinds of aerial cable.

NAVILITE 12, 24 & 48 VDC

The NAVILITE is based on LED technology in compliance with ICAO low intensity type. recently applied These lights are devoted to the night marking of all kinds of obstacles with a DC power supply.



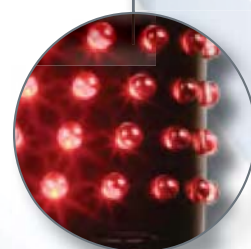
One-piece molded

- 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



Power supply

- Continuous current 12, 24 and 48 VDC
- optional power supply through via a backup power source for continuity of the marking (batteries) or through solar generator.



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
- initial light intensity more than twice higher than the ICAO standards
- excellent heat dissipation

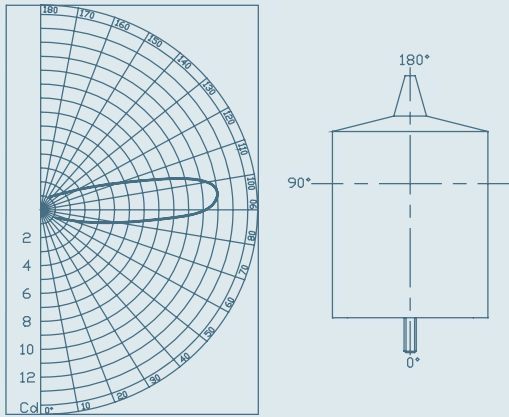
MAIN CHARACTERISTICS

OBSTA part number	Power supply	Luminous intensity	Electrical current	Nominal power	Theorical lifetime*
NAVILITE 13900	48 VDC	> 10 Cd	125 mA	< 6 W	100 000 h.
NAVILITE 13901	24 VDC	> 10 Cd	250 mA	< 6 W	100 000 h.
NAVILITE 13902	12 VDC	> 10 Cd	500 mA	< 6 W	100 000 h.
NAVILITE 13903 (model used with solar system)	12 VDC	> 10 Cd	370 mA	< 4,4 W	100 000 h.

* given by LED manufacturer

ADDITIONAL FEATURES

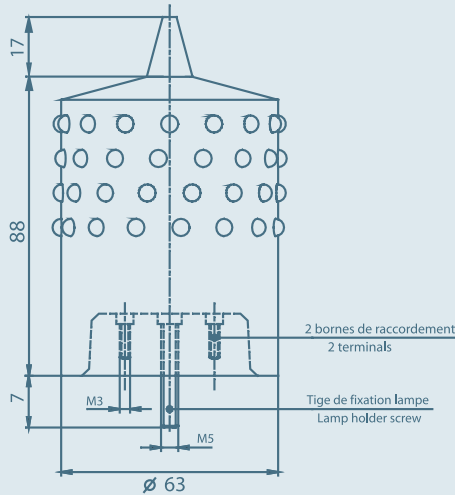
LIGHT INTENSITY DIAGRAM



	NAVILITE Type A
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

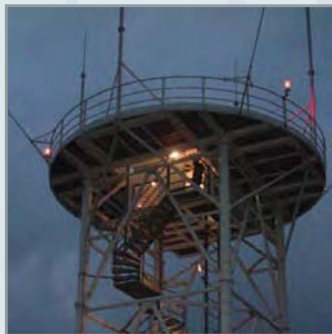
* The weight of the fixing bracket is 0.75kg

DIMENSIONS (in mm)



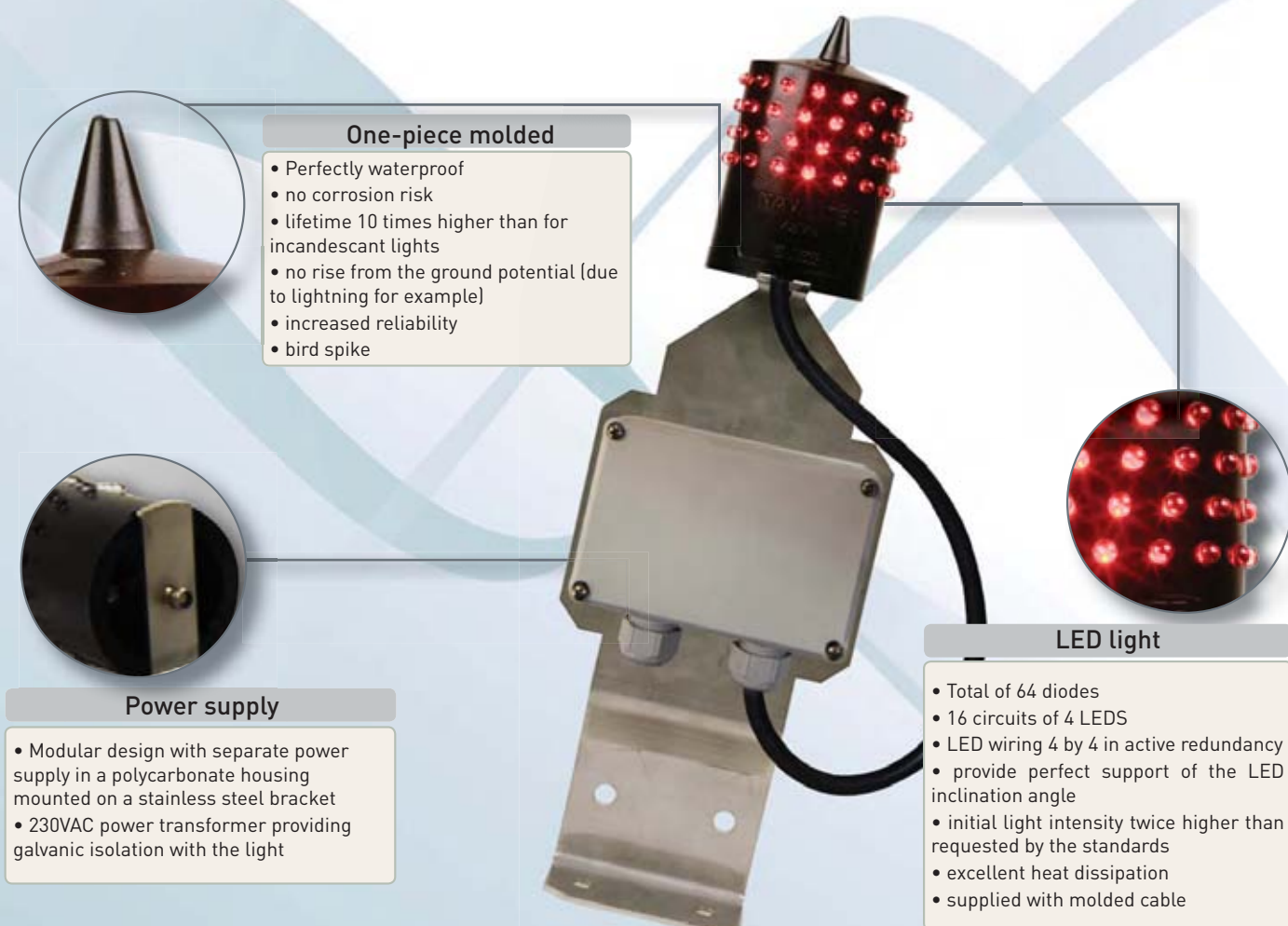
INSTALLATION ACCESSORIES (optional)

- Stainless steel mounting bracket - ref. 13920
- Monitoring box - ref. 13940, for 2 NAVILITE 48V beacons (simultaneous or normal/backup) with integrated photocell switch (see page 18)
- Battery Cabinet with 12 hours power backup (see page 38)
- Solar kit (see page 40)
- External 230V power supply (ref. 13911) for 1 up to 3 NAVILITE



NAVILITE 230 VAC

These lights are dedicated to night marking of any kind of air navigation obstacle in 230VAC.



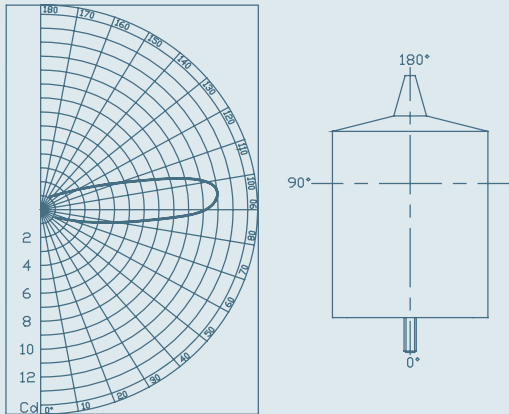
MAIN CHARACTERISTICS

OBSTA part number	Power supply	Luminous intensity	Electrical current	Nominal power	Theorical lifetime*
NAVILITE 13909	230 VAC	> 10 Cd	70 mA	< 6 W	100 000 h.

* given by LED manufacturer

ADDITIONAL FEATURES

LIGHT INTENSITY DIAGRAM

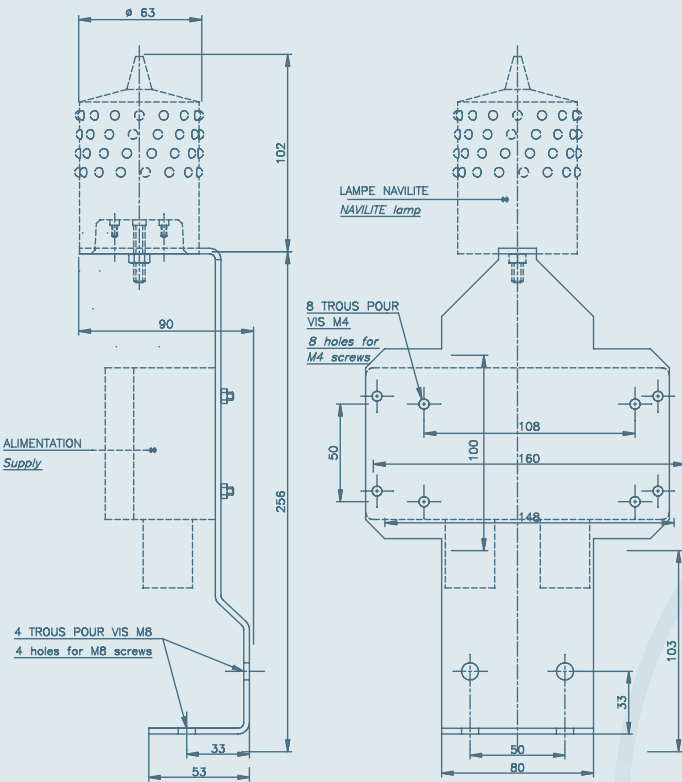


	NAVILITE Type A
IP degree	66
Operating temperature	-40° to + 55°C
Power supply	230 VAC (+/- 10%)
Weight (light)	370 g (excluding fixing bracket*)
Weight (light + power supply)	0.9kg (excluding fixing bracket*)
Attachment	by screw M5 (provided)
Maintenance	none

* The weight of the fixing bracket is 0.75kg

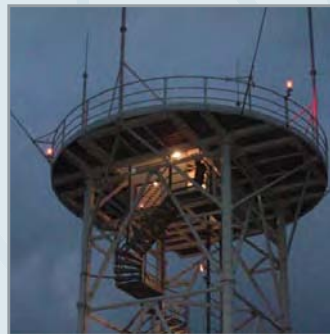
DIMENSIONS (In mm)

Fixing bracket



INSTALLATION ACCESSORIES (optional)

- Stainless steel mounting bracket ref. 13920
- 230V power supply ref. 13911 (spare part)
- NAVILITE 48 V with molded cable ref. 13905 (spare part)



NAVILITE B 12, 24 & 48 VDC

These lights are devoted to the night marking of all kinds of obstacles with a DC power supply.



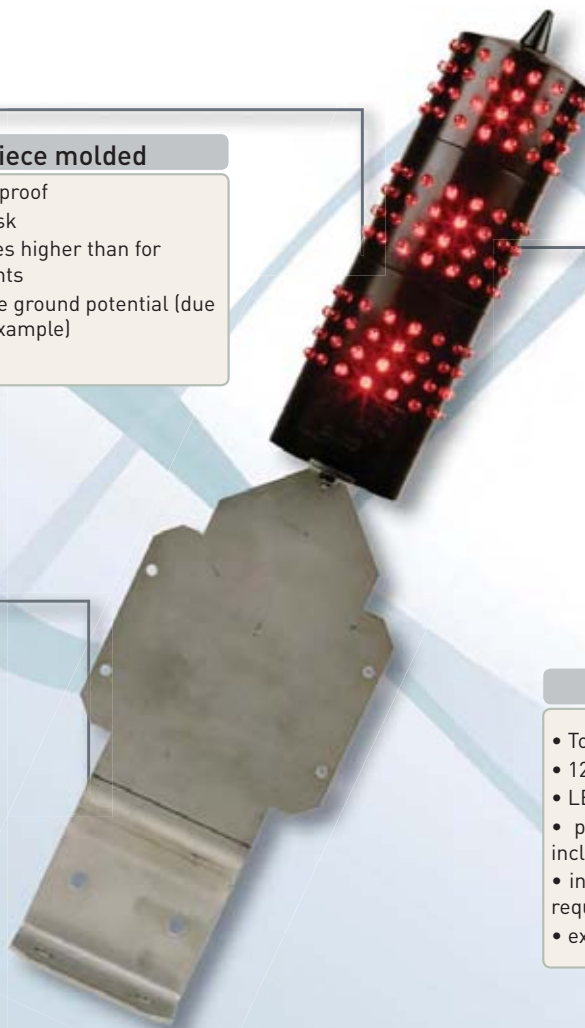
One-piece molded

- 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



Power supply

- Continuous current 12, 24 and 48 VDC
- optional power supply through via a backup power source for continuity of the marking (batteries) or through solar generator.



LED light

- Total of 192 diodes
- 12 levels of 16 LEDs
- LED wiring 4 by 4 in active redundancy
- provide perfect support of the LED inclination angle
- initial light intensity twice higher than requested by the standards
- excellent heat dissipation

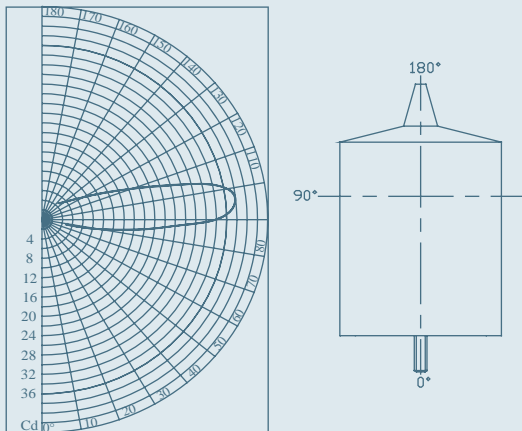
MAIN CHARACTERISTICS

OBSTA part number	Power supply	Luminous intensity	Electrical current	Nominal power	Theoretical lifetime*
NAVILITE B 13930	48 VDC	> 32.5 Cd	375 mA	< 18 W	100 000 h.
NAVILITE B 13931	24 VDC	> 32.5 Cd	750 mA	< 18 W	100 000 h.
NAVILITE B 13932	12 VDC	> 32.5 Cd	1500 mA	< 18 W	100 000 h.

* given by LED manufacturer

ADDITIONAL FEATURES

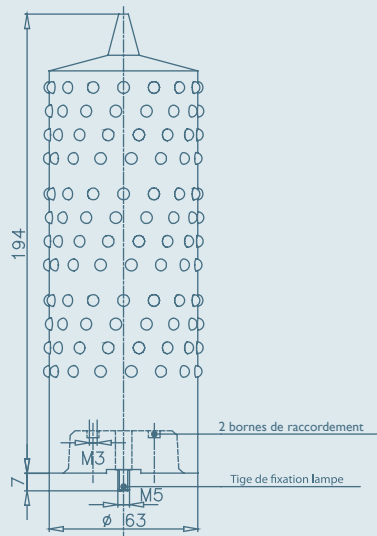
LIGHT INTENSITY DIAGRAM



	NAVILITE Type 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)



INSTALLATION ACCESSORIES (optional)

- Stainless steel mounting bracket - ref. 13920
- Monitoring box - ref. 13941, for 2 NAVILITE 48V beacons (simultaneous or normal/backup) with integrated photocell switch (see page 18)
- Battery Cabinet with 12 hours power backup (see page 38)
- Solar kit (see page 40)
- External 230V power supply (ref. 13911) for one NAVILITE (ref. 13930).



NAVILITE B 120 & 230 VAC

These lights are devoted to the night marking of all kinds of obstacles with a 120 or 230 VAC power supply.



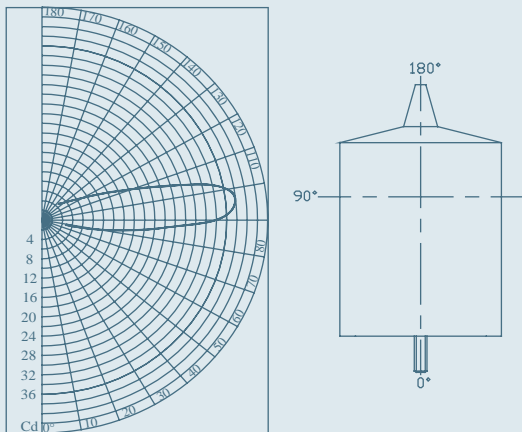
MAIN CHARACTERISTICS

OBSTA part number	Power supply	Luminous intensity	Electrical current	Nominal power	Theorical lifetime*
NAVILITE B 13933	120 VAC	> 32.5 Cd	190 mA	< 18 W	100 000 h.
NAVILITE B 13939	230 VAC	> 32.5 Cd	200 mA	< 18 W	100 000 h.

* given by LED manufacturer

ADDITIONAL FEATURES

LIGHT INTENSITY DIAGRAM

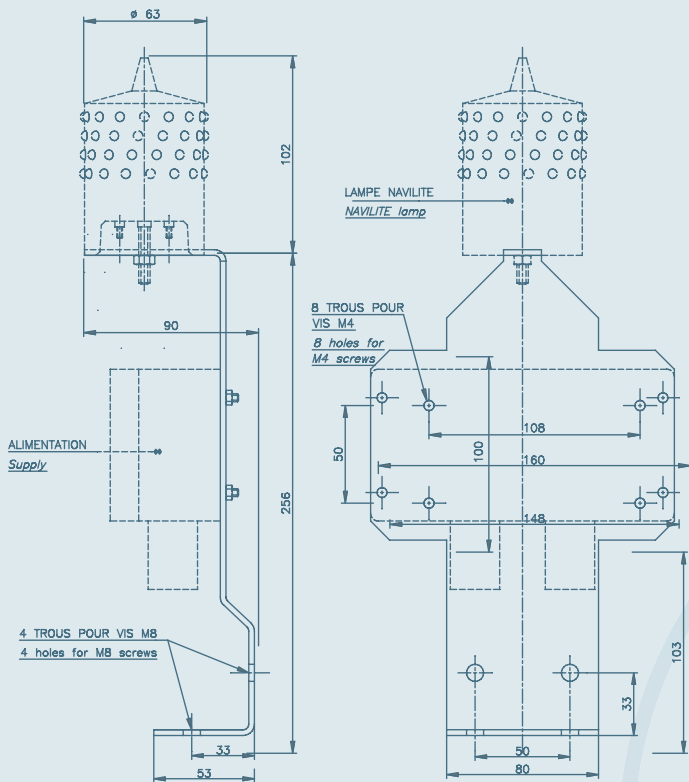


	NAVILITE Type A
IP degree	66
Operating temperature	-40° + 55°C
Power supply	120VAC, 230 VAC (+/- 10%)
Weight (light)	0.92kg (excluding fixing bracket*)
Weight (light + power supply)	1.79kg (excluding fixing bracket*)
Attachment	by screw M5 (provided)
Maintenance	none

* The weight of the fixing bracket is 0,75kg

DIMENSIONS (In mm)

Fixing bracket



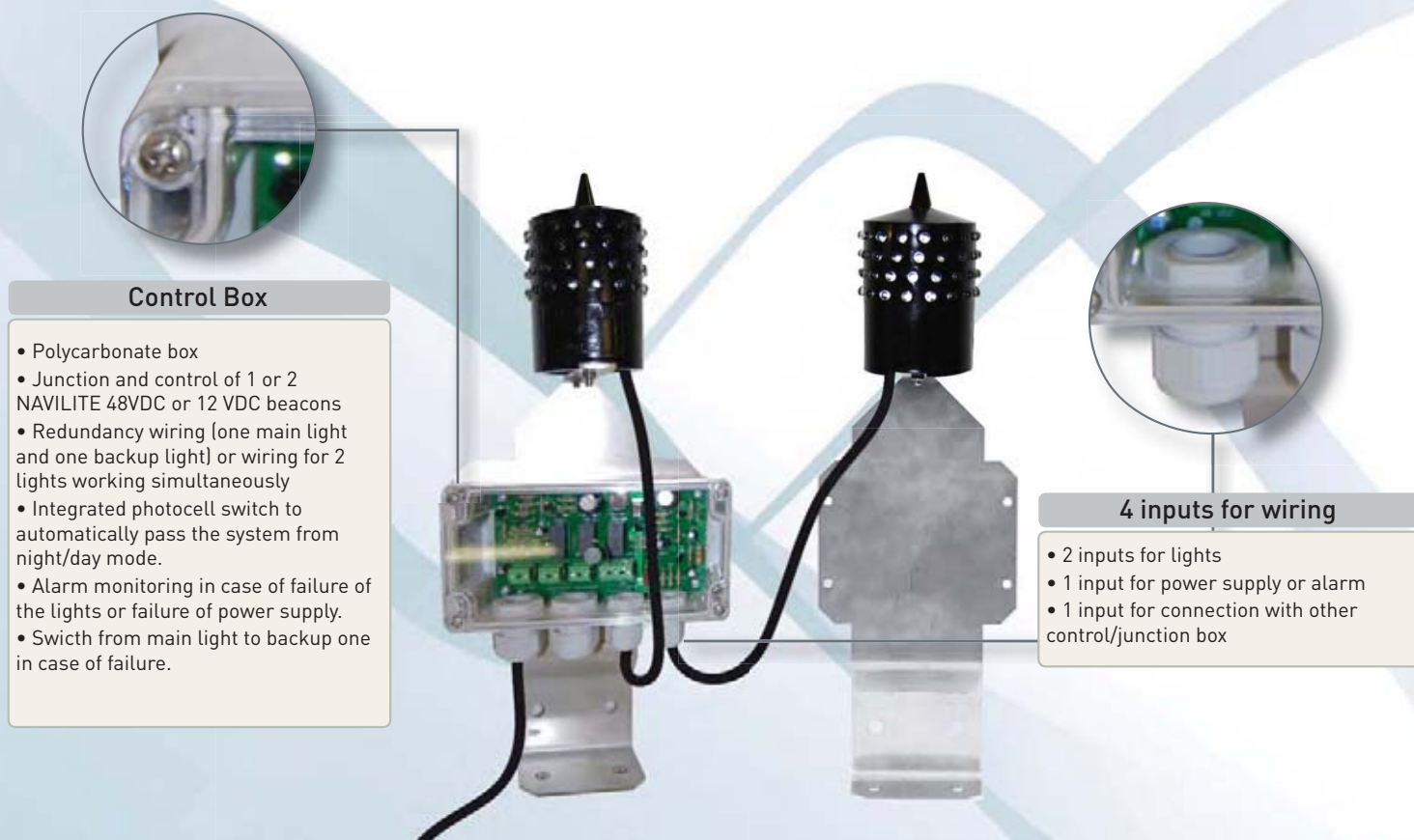
INSTALLATION ACCESSORIES (optional)

- Stainless steel mounting bracket - ref. 13920
- 230V power supply for one NAVILITE HI - ref.13911 (spare part)
- NAVILITE HI 48VDC with 50 cm of molded cable - ref.13935 (spare part)



NAVILITE ACCESSORIES

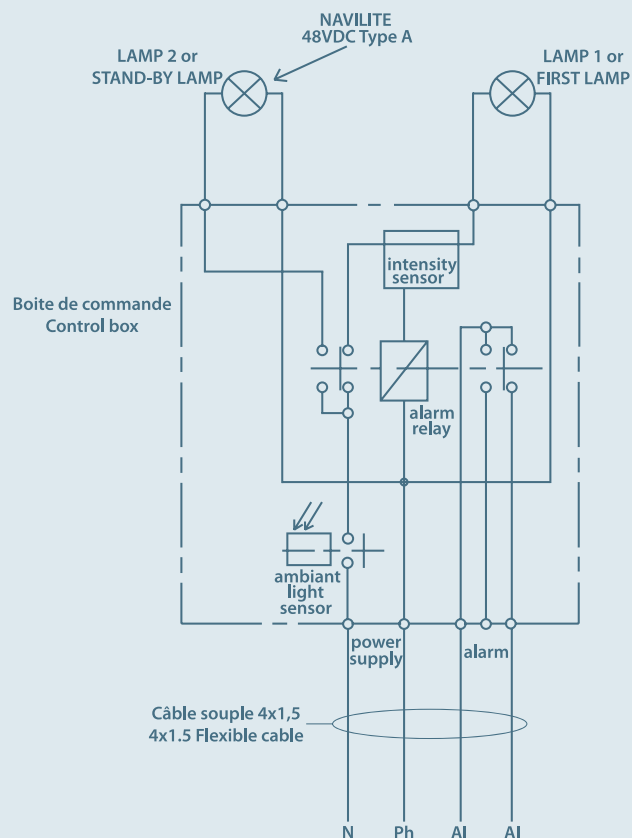
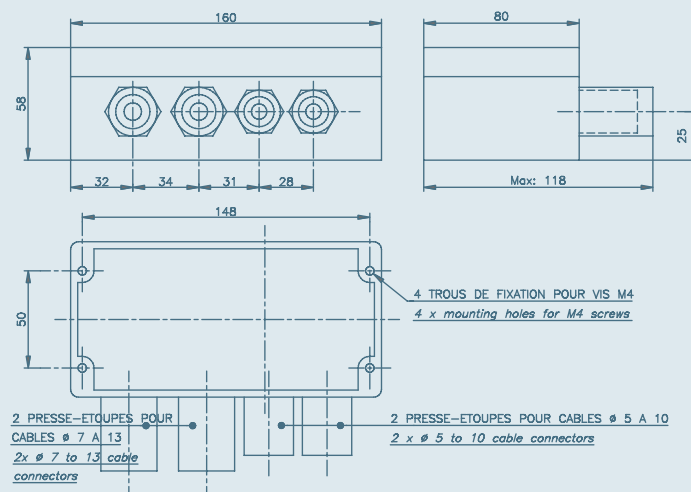
Monitoring and control boxes offered with the NAVILITE are designed for an easy use and installation follow up on the complete obstruction lights system.



OBSTA part number	Description
13940	Monitoring box allowing the control and the wiring of 1 or 2 NAVILITE 48VDC beacon (ref. 13900), working at night only or continuously, plugged to work simultaneously or in redundancy (a main light and 1 backup) with remote signalization in case of failure of the light or of the 48VDC supply
13941	Monitoring box allowing the control and the wiring of 1 or 2 NAVILITE B 48VDC beacon (ref. 13930), working at night only or continuously, plugged to work simultaneously or in redundancy (a main light and a backup) with remote signalization in case of failure of the light or of the 48VDC supply
13942	Monitoring box allowing the control and junction of 2 NAVILITE 12VDC beacons (ref.13903), working on solar generator in redundancy (1 main light and one backup light)
13911	Power supply enclosure 230VAC for one NAVILITE B 48VDC beacon, code 13930 or 3 NAVILITE 48VDC beacons (ref. 13900)

ADDITIONAL FEATURES

WEIGHT AND DIMENSIONS (in mm)



Reference	Voltage	Ligth	Night working	Lights in redundancy	Remote alarm and power supply
13940	48VDC	NAVILITE 48V 13900	yes	yes	yes
13941	48VDC	NAVILITE 48V 13930	yes	yes	yes
13942	12VDC	NAVILITE 12V 3903	yes	yes	no

Reference	Input Voltage	Output Voltage	Light
13911	230 VAC	48V	1 NAVILITE 48V (ref. 13930) or 3 NAVILITE 48V (ref. 13900)

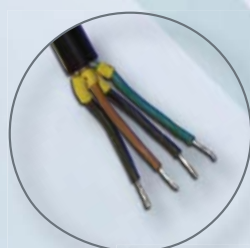
OBSTA STIF ^{12 VDC} & HISTIF ^{24 VDC}

The OBSTA STIF 12 VDC and HISTIF 24 VDC beacon is devoted to the obstacle marking with a DC power supply. Its power consumption is lower than traditional cold discharge neon lights, thanks to a patented optic from OBSTA. It is recommended in severe environments (temperatures, etc.)



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



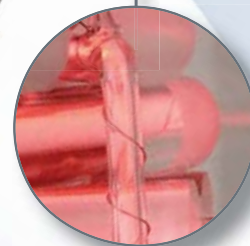
Power cable

- continuous Voltage
- power by a backup power source for continuity of the marking (batteries) or by a solar power source (photovoltaic panels)
- protected against transient voltages
- integrated self diagnostic of the light (control of a remote signalization or a backup light possible)



Patent :

EP 1966535B1 & US 7816843



Focalized neon light

- discharge light with 3 focalized stages
- patented technology
- cover and optical system in hard glass
- « aviation » red color
- very long life expectancy in all climatic environment
- great light efficiency
- power consumption twice lower than for the traditional neon lights

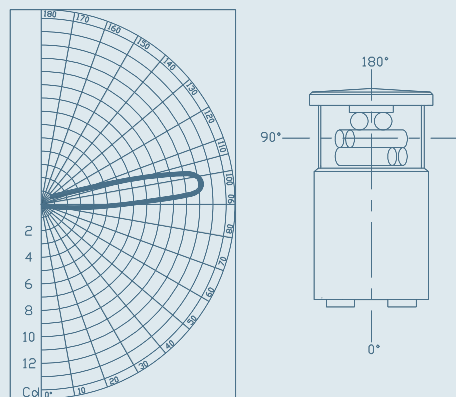
MAIN CHARACTERISTICS

OBSTA part number	Power supply	Luminous intensity	Current consumption	Nominal power	Lifetime (without any light decrease*)
13410	12 VDC	> 10 Cd	500 mA	6W	decades
13330	24 VDC	> 32.5 Cd	750 mA	18 W	decades

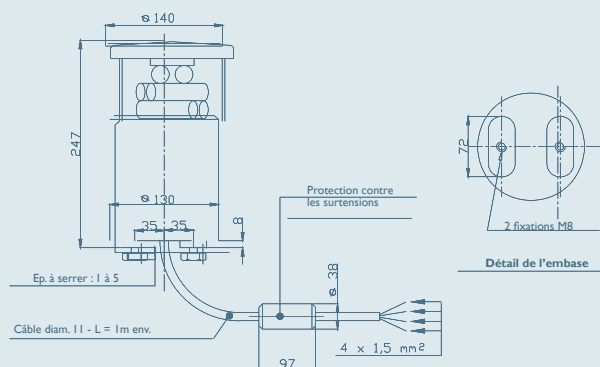
* with power supply stabilized

ADDITIONAL FEATURES

LIGHT INTENSITY DIAGRAM



DIMENSIONS (In mm)

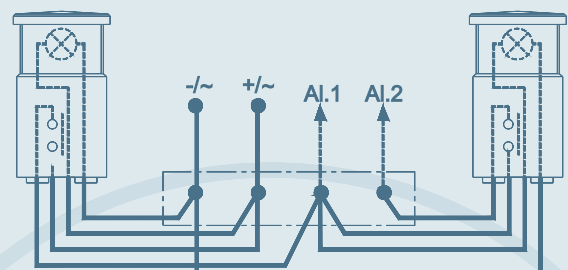


SPECIAL PRECAUTIONS

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)

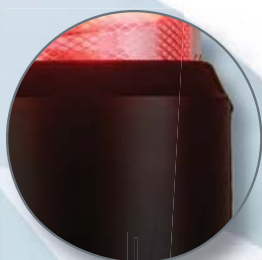
- Photocell controlled
- Light shielded as per standard EN 55011, class B

- Junction box (ref. 13140)
- Stainless steel mounting bracket (ref. 13125)
- Solar generator (see page 40)



OBSTA STI 24 & 48 VDC

The OBSTA STI is devoted to the marking of all kind of obstacles supplied by a standalone DC power source in 24V or 48V.



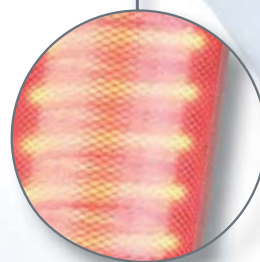
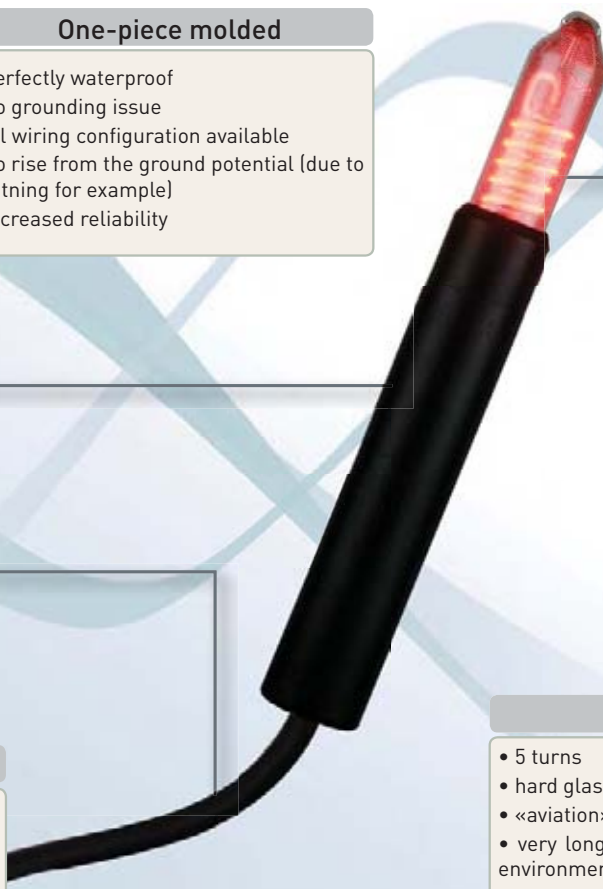
One-piece molded

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



Power cable

- continuous Voltage
- power by a backup power source for continuity of the marking (batteries)
- protected against transient voltages
- integrated self diagnostic of the light (control of a remote signalization or a backup light possible)



Neon light

- 5 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

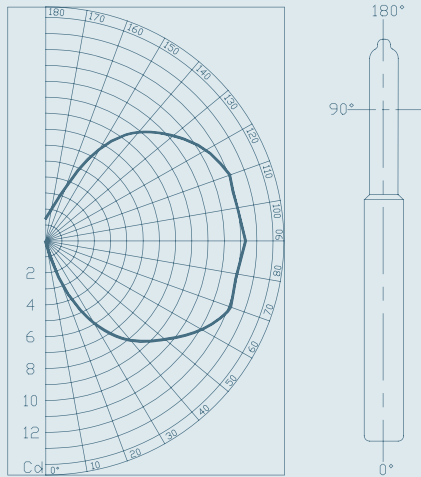
MAIN CHARACTERISTICS

OBSTA part number	Power supply	Luminous intensity	Current consumption	Nominal power	Lifetime (without any light decrease*)
13200	48 V continuous	> 10 Cd	250 mA	12W	decades
13300	24 V continuous	> 10 Cd	500 mA	12 W	decades

* with power supply stabilized

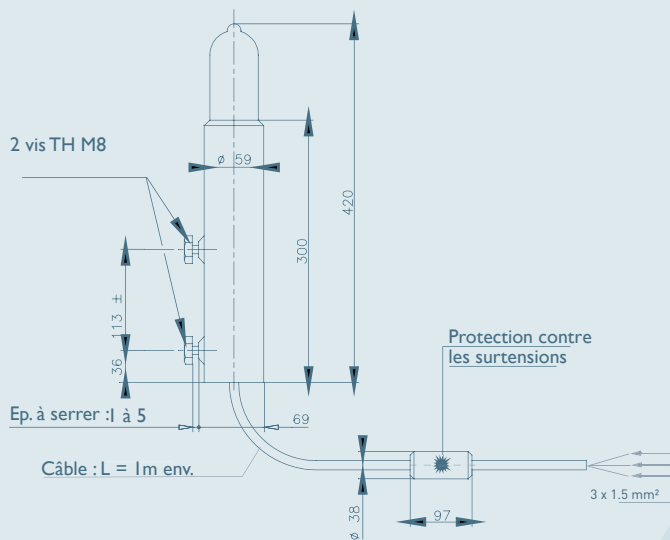
ADDITIONAL FEATURES

LIGHT INTENSITY DIAGRAM



	STI
IP degree	66
Operating temperature	-20° + 60°C
Power supply voltage	24 or 48 V [-10% ; + 15%]
Weight	1.5 kg
Attachment	2 screws type M8 (provided) Thickness to screw into : 1 à 5 mm
Wiring	On stripped wires (2 power wires, 2 alarm wires)

DIMENSIONS (en mm)

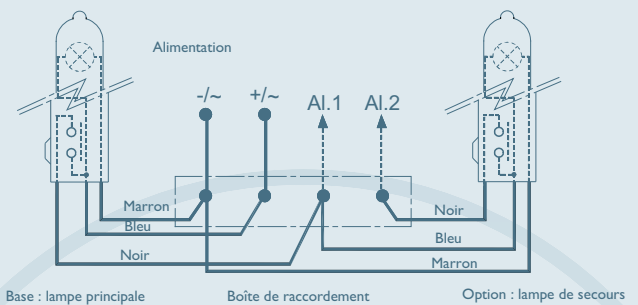


SPECIAL PRECAUTIONS

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

- Junction box (ref. 13140)
- Stainless steel mounting bracket (ref. 13121 for one light and 13124 for two lights)
- Solar generator (see page 40)
- Connection accessories (see page 28)

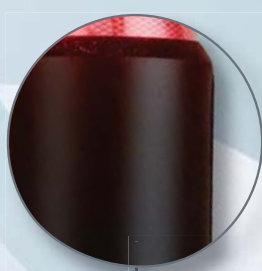


OBSTA HISTI 110 to 240 VAC

The OBSTA HI STI is devoted to the marking of all kinds of obstacles such as buildings, airports, broadband towers, high voltage power poles.

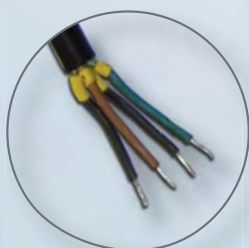
One model allow can cover every voltage from 110VAC up to 240VAC

In intense electromagnetic fields (radiant poles, multi directional radio antennas), it is recommended to use the OBSTA HI STIM code 13150.



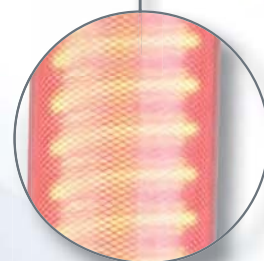
One-piece molded

- 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



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

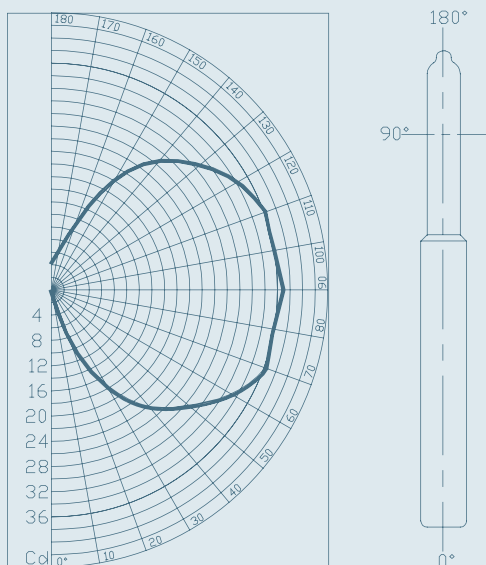
MAIN CHARACTERISTICS

OBSTA part number	Power supply	Luminous intensity	Current consumption	Nominal power	Theoretical lifetime (without any light decrease*)
HISTI ref. 13110	from 110 V eff. up to 240 V 50/60 Hz	> 32.5 Cd	110V - 730 mA 240 V - 370 mA	45 W	10 years

* with power supply stabilized

ADDITIONAL FEATURES

LIGHT INTENSITY DIAGRAM

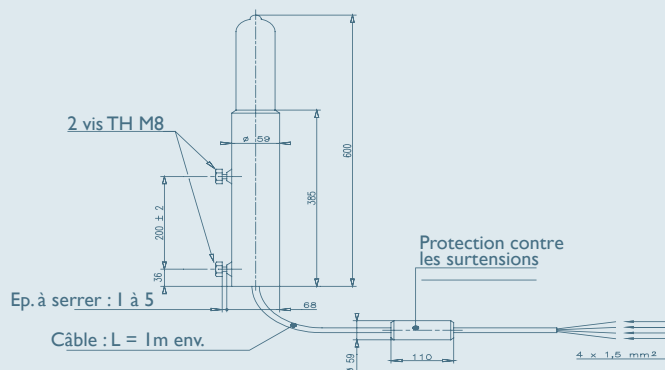


	HISTI
IP degree	66
Operating temperature	-30° + 60°C
Power supply voltage	from 110 up to 240V (+/-10%) 50/60 Hz
Weight	2.3 kg
Attachment	2 screws type M8 (provided) Thickness to screw into : 1 up to 5 mm
Wiring	On stripped wires (2 power wires, 2 alarm wires)

SPECIAL PRECAUTIONS

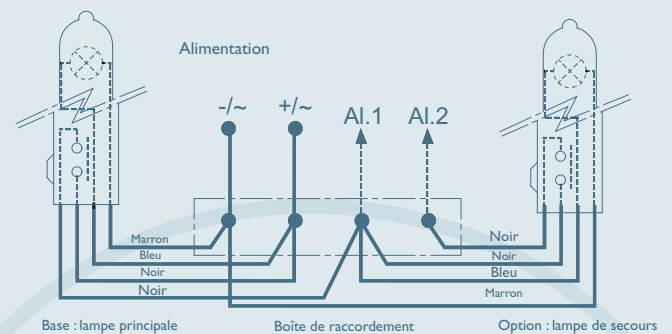
For chimney installation, install the light under the top (1.5 to 3m, 5 to 10ft), as per ICAO and FAA recommendations.
For installation in intense electromagnetic fields, the use of shielded wire is highly recommended.

DIMENSIONS (in mm)



OTHER FUNCTIONS

- Failure remote signalization by relay (see diagram)



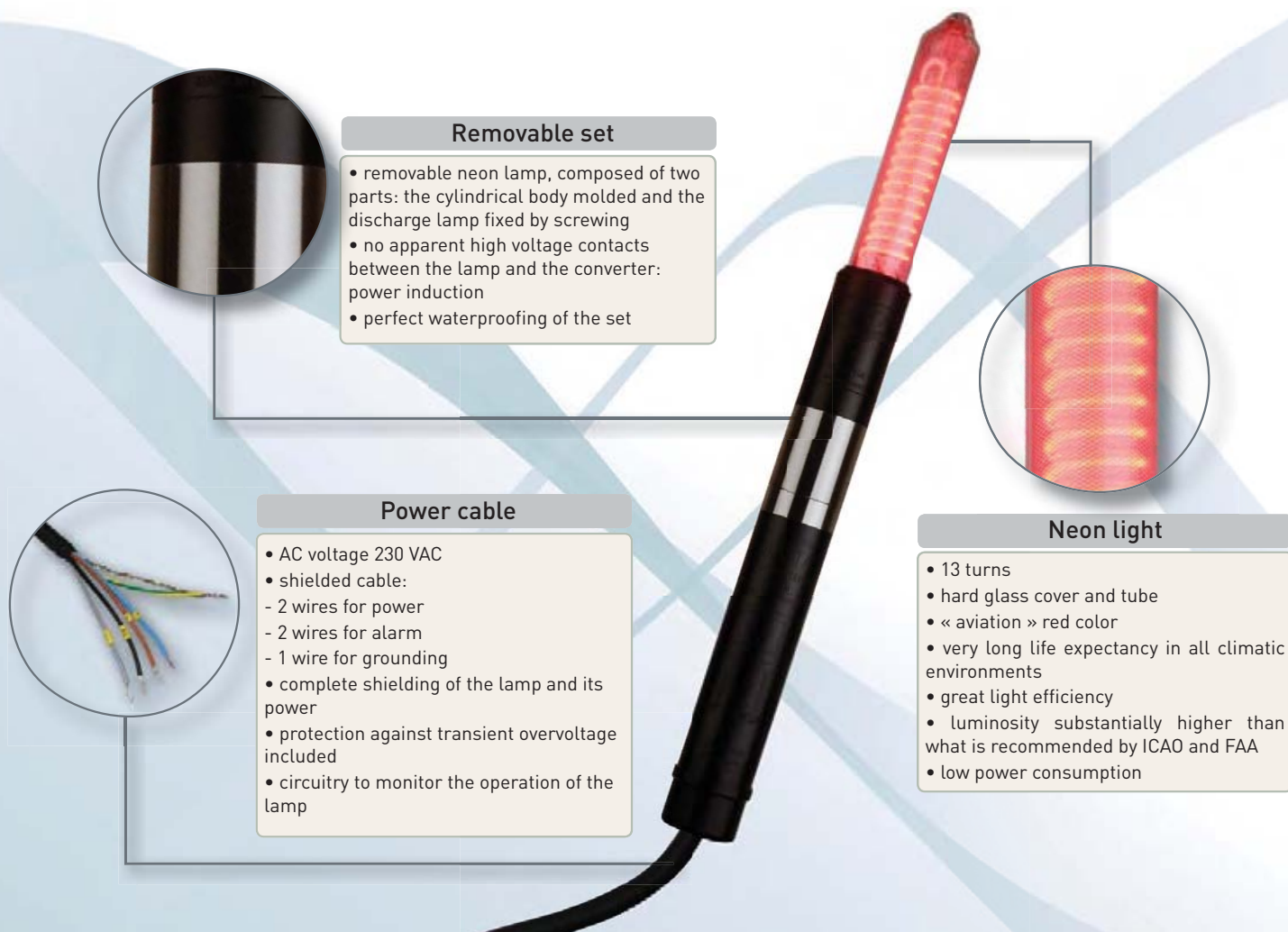
- «Active redundancy» configuration allows the automatic turn on of a backup light and/or of an alarm in case of failure of the main light (see diagram)
- Photocell controlled
- Light shielded as per standard EN 55011, class B

- Junction box (ref. 13140)
- Stainless steel mounting bracket (ref. 13121 for one light and 13124 for two lights)
- Solar generator (see page 40)
- Connection accessories (see page 28)



OBSTA HI STIM 230 VAC

The OBSTA HI STIM is designed to replace the old OBSTA HI with transformer. The OBSTA HI STIM can be used for any obstacle. It offers robustness in hostile environments under exposure to electromagnetic fields.



MAIN CHARACTERISTICS

OBSTA part number	Power supply	Luminous intensity	Current consumption	Nominal power	Lifetime
Complete HISTIM ref. 13150	230 V - 50/60 Hz	> 32.5 Cd	370 mA to 240 V	45 W	decades

SPARE PARTS OBSTA HISTIM

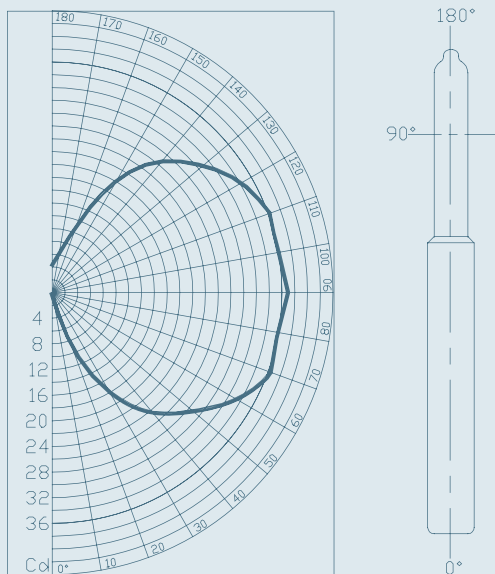
Description	OBSTA part number	Number of turns	Luminous intensity	Lifetime
OBSTA HISTIM 13 turns light	13156	13	> 32,5 Cd	decades
Converter HISTIM 230 VAC	13155	-	-	decades

SPARE PARTS FOR OLD INSTALLATIONS WITH HI CONVERTER

Ref. 00653 (13 turns), 00654 (13 anti-parasite turns), 00656 (5 turns)

ADDITIONAL FEATURES

LIGHT INTENSITY DIAGRAM

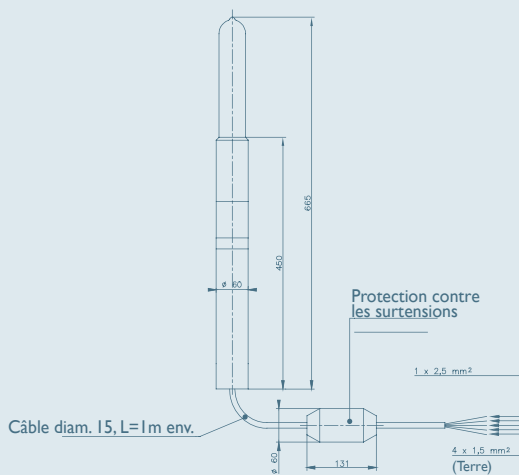


	HISTIM
IP degree	66
Operating temperature	-30° + 60°C
Power supply voltage	230VAC (+/-10%) - 50/60Hz
Weight	3 kg
Attachment	with 2 clamp screw
Wiring	on stripped wires (2 power wires, 2 alarm wires, 1 ground wire)
Maintenance	none

SPECIAL PRECAUTIONS

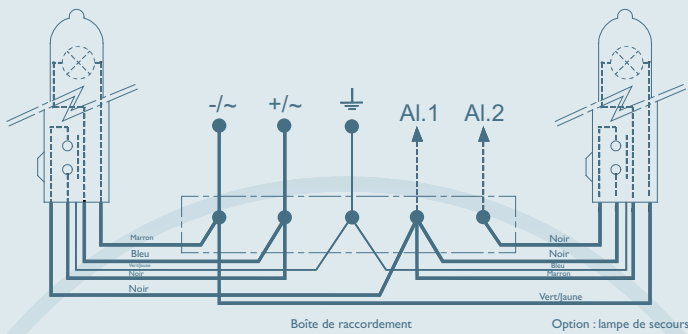
For chimney installation, install the light under the top (1.5 to 3m, 5 to 10ft), as per ICAO and FAA recommendations.
For installation in intense electromagnetic fields, the use of shielded wire is highly recommended

DIMENSIONS (In mm)



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
- Connection accessories (see page 28)



NEON LOW INTENSITY ACCESSORIES

The range of monitoring and junction boxes we propose is defined to facilitate the implementation and monitoring of obstruction lights installation.

These metal boxes are suitable for EMC environments and severe climatic conditions.



LED & Switches

- waterproof switches & leds
- presence of supply voltage
- operating status lights
- visualization of defects
- automatic or manual operation of the installation



4 cable inputs

- connection of 1 to 3 lights in simultaneous operation
- connection of two wires in active redundancy
- connection of a photocell
- connection of the fault information

Aluminium boxes

- painted and molded aluminum boxes
- cable inputs by gland nickel plated brass
- lower part consisting of terminals and fully wired relays
- excellent waterproofing (climatic & electromagnetic)
- simple fixing & easy connection

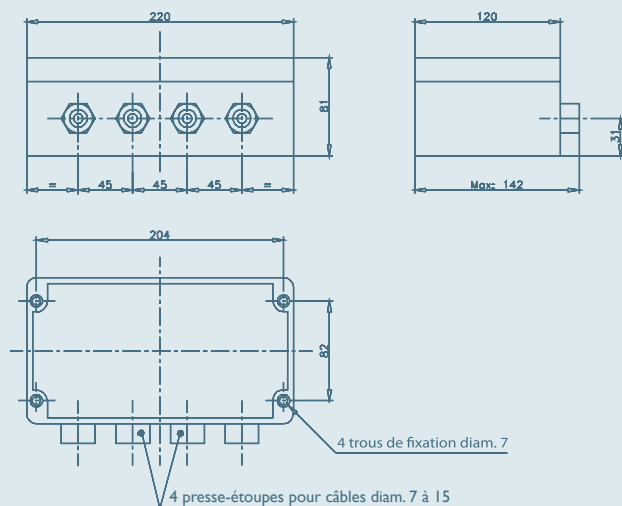


OBSTA part number	Description
13140	Single junction box for every type of light and every voltage
13141	Single junction box for every type of light for use with function management boxes 13142, 13143 or 13144
13142 - 13143 - 13144	Functions management box with leds and switches for OBSTA lights 24V, 48V or 230VAC
13145 - 13146	Box for connection and removal alarm, for use exclusively with one or two lights OBSTA STI 24V or 48V
13147	Functions management box, available in 230VAC or 24VDC with leds and switches for installation combining medium intensity and low intensity lights neon or led

ADDITIONAL FEATURES

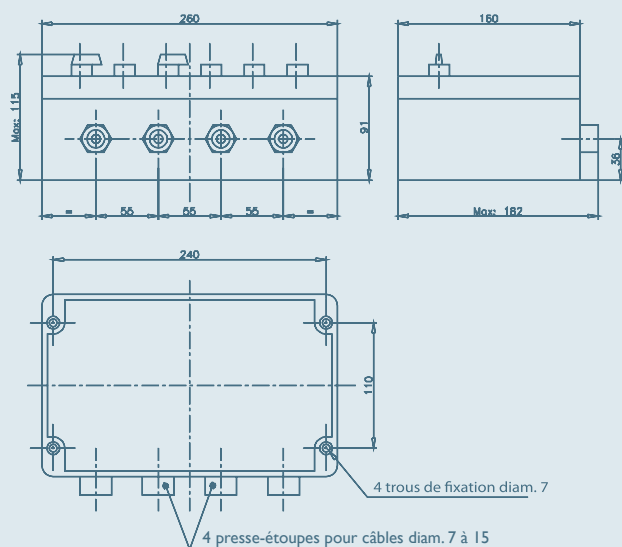
WEIGHT AND DIMENSIONS (in mm)

- Diagram A



IP degree	65
Cable entries quantity	4
Cable diameter	from 8 to 15 mm
Wire cross section	from 1 to 4 mm ²
Attachment	4 screws type M5
Weight	Drawing A : 1.9 kg Drawing B : 2.8 kg

- Diagram B



Part number	Voltage	Drawing	Weight	Photocell	Display	Back up	Remote control	Number of lights
13140	all	A	1.8	yes	no	yes	no	1 to 3
13141	all	A	1.8	Used with 13142, 13143 or 13144				2
13142	230 VAC	B	2.8	yes	yes	yes	yes	< 7
13143	48 VDC	B	2.8	yes	yes	yes	yes	< 7
13144	24 VDC	B	2.8	yes	yes	yes	yes	< 7
13145	48 VDC	A	1.9	no	no	yes	yes	2
13146	24 VDC	A	1.9	no	no	yes	yes	2

For exact drawing, please contact us

WHITE OBSTAFLASH

The OBSTAFLASH medium intensity is a white flashing obstruction light dedicated to day and night marking of any obstacles.

The OBSTAFLASH is compliant with ICAO medium intensity type A, FAA L865/L866 flashing lights.

The use of white strobe medium intensity during day time eliminates the need to paint the obstacle with aviation red and white stripes.

Flashhead

- cover and lens 100% hard glass
- not sensitive to high temperature and UV
- aluminium body
- modular design
- easy maintenance
- precise optic
- safety interlock switch
- long life linear flash tube

Description

- 2 levels of independent flashing lamps
- 20 000 candelas during daytime and 2000 candelas during the night
- 20 to 60 flashes per minute
- rugged design and modular power supply for easy and low maintenance cost
- safety interlock switch

Patent : EP 1966535B1 & US 7816843

Power cabinet

- «weather tight» stainless steel enclosures (in vertical position)
- safety interlock switch
- «plug-in» modular construction with plated contact surfaces,
- synchronization module for more than 1 light

MAIN CHARACTERISTICS

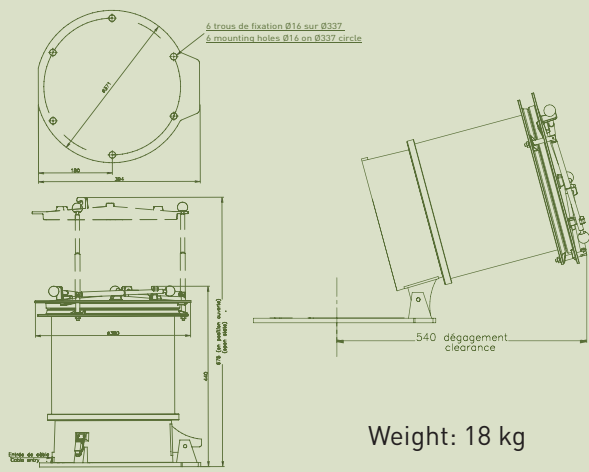
Main characteristics	Luminous output		Color		Beam Spread		Flashes per minute
	Day	Night	Day	Night	Vertical	Horizontal	
White Medium Intensity	20 000 Cd	2000 Cd	White	White	3°	360°	20, 40 or 60

OBSTA part number	Power supply	Power consumption at 40 flashes per minute and 20 000 candelas	Peak V.A.
13810	230 VAC	< 150 W	< 600 VA
13820	24 VDC	< 140 W	< 600 VA

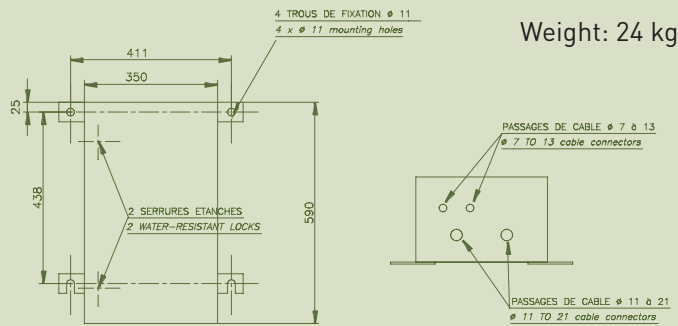
ADDITIONAL FEATURES

WEIGHT AND DIMENSIONS (in mm)

Flashhead



Control cabinet



SETS COMPOSITION

Obstruction lighting system Medium intensity	Medium Intensity	
	Description	Code
Flashhead Control cabinet Switch	White one per flashhead	13810, 13820
Connecting cable between flashhead and control cabinet	length max. 300 m	13805
Spare flashtube assy	xenon	13840

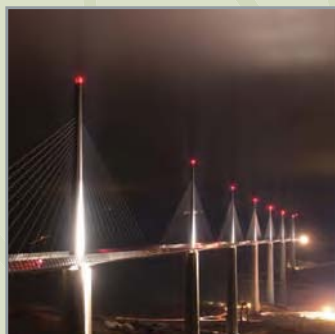
Other request: please contact us

OPTIONS

- Master/slave multiple beacon system, by cable or fiber optic for more than 4 lights
- GPS module for synchronization of the flashes and day/night switch

OTHER FUNCTIONS

- Linear quartz flashtube
- Modular design
- Flashhead and control cabinet separation distance up to 300m (to be specified on the order)



RED OBSTAFLASH

The OBSTAFLASH medium intensity is a red flashing obstruction light dedicated to night marking of any obstacles.

The OBSTAFLASH is compliant with ICAO medium intensity type B, FAA L864 flashing lights.

Flashhead

- cover and optic 100% hard glass
- not sensitive to high temperature and UV
- aluminium body
- modular design
- easy maintenance
- precise optic
- safety interlock switch
- linear flash tube

Description

- 2 levels of flashing lamps
- 2000 candelas during the night
- 40 flashes per minute
- rugged design and modular power supply for easy and low maintenance cost
- safety interlock switch

Power cabinet

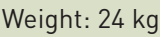
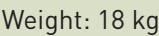
- «weather tight» stainless steel enclosures (in vertical position)
- key lock for security
- «plug-in» modular construction with plated contact surfaces
- synchronization module for more than 1 light

Patent : EP 1966535B1 & US 7816843

MAIN CHARACTERISTICS

Main characteristics	Luminous output		Color		Beam Spread		Flashes per minute
	Day	Night	Day	Night	Vertical	Horizontal	
Red Medium Intensity		2000 Cd		Red	3°	360°	20, 40 or 60 in options

OBSTA part number	Power supply	Power consumption at 40 flashes per minute and 2000 candelas	Peak V.A.
13811	230 VAC	< 125 W	< 600 VA
13821	24 VDC	< 120 W	< 600 VA



Other request: please contact us



DUAL COLOR OBSTAFLASH

The dual color OBSTAFLASH medium intensity is a white flashing obstruction light during the day, and a red flashing obstruction light at night.

The OBSTAFLASH is compliant with ICAO medium intensity type A and B, FAA L864/L865 flashing lights.

Flashhead

- cover and optic 100% hard glass
- not sensitive to high temperature and UV
- aluminium body
- modular design
- easy maintenance
- precise optic
- safety interlock switch
- linear flash tube

Description

- 2 levels of independent flashing lamps
- 20 000 candelas during daytime and 2000 candelas during the night
- 20 to 60 flashes per minute
- rugged design and modular power supply for easy and low maintenance cost
- safety interlock switch

Power cabinet

- «weather tight» stainless steel enclosures (in vertical position)
- key lock for security
- «plug-in» modular construction with plated contact surfaces,
- synchronization module for more than 1 light

Patent : EP 1966535B1 & US 7816843

MAIN CHARACTERISTICS

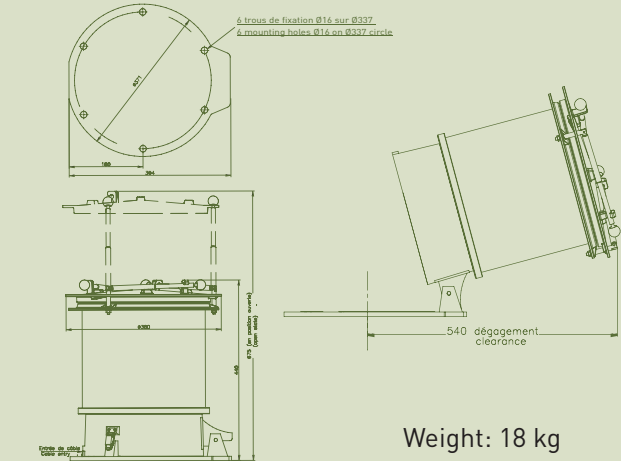
Main characteristics	Luminous output		Color		Beam Spread		Flashes per minute
	Day	Night	Day	Night	Vertical	Horizontal	
Red Medium Intensity	20 000 Cd	2000 Cd	White	Red	3°	360°	20, 40 or 60

OBSTA part number	Power supply	Power consumption at 40 flashes per minute and 20 000 candelas	Peak V.A.
13812	230 VAC - 50/60 Hz	< 150 W	< 600 VA
13822	24 VDC	< 150 W	< 600 VA

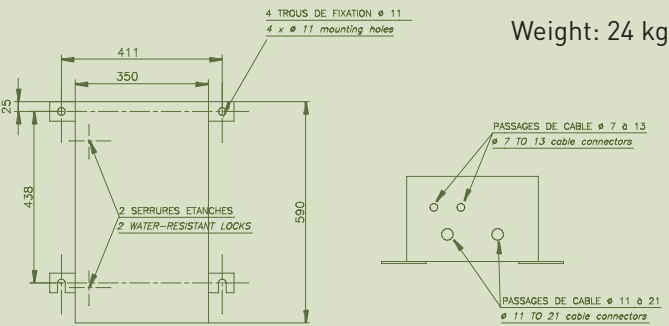
ADDITIONAL FEATURES

WEIGHT AND DIMENSIONS (in mm)

Flashhead



Control cabinet



SETS COMPOSITION

Obstruction lighting system Medium intensity	Medium Intensity	
	Description	Code
Flashhead Control cabinet Switch	Two-coloured one per flashhead	13812, 13822
Connecting cable between flashhead and control cabinet	length max. 300 m	13805
Spare flashtube assy	xenon	13840

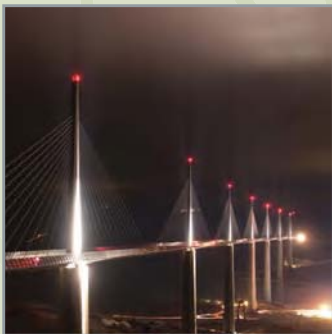
Other request: please contact us

OPTIONS

- Master/slave multiple beacon system, by cable or fiber optic for more than 4 lights
- GPS module for synchronization of the flashes and day/night switch

OTHER FUNCTIONS

- Linear quartz flashtube
- Modular design
- Flashhead and control cabinet separation distance up to 300m (to be specified on the order)



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.

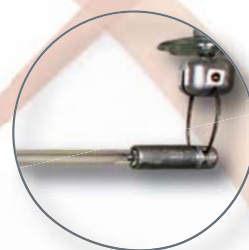
Our standard model of BALISOR® fall into the ICAO low intensity category.

The neon discharge offers :

- inherent generation of «aviation» red light,
- a very long life, essential to continuous operation of highvoltage lines.

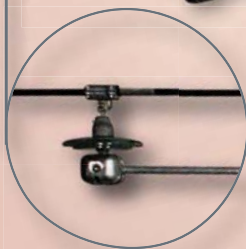
Cold neon discharge light

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



Fixing accessories

- fixing accessory and capacitive elements in aluminium
- flexible mounting - no rigid fixation
- clamp adapted to the diameter of the cable
- exists with glass insulators or silicon insulators for polluted areas

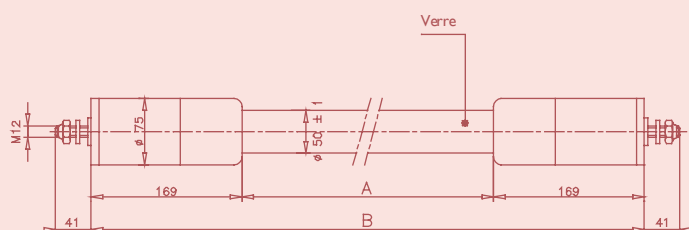


MAIN CHARACTERISTICS

OBSTA part number	Luminous intensity	Voltage of the line	Interference suppression	Typical lifetime
BALISOR lamp ref. 00618 B49	> 10 Cd	60 kV to 550 kV	yes	> 100 000 h.
BALISOR lamp ref. 00616 B33 (for old model)	> 10 Cd	-	yes	> 100 000 h.

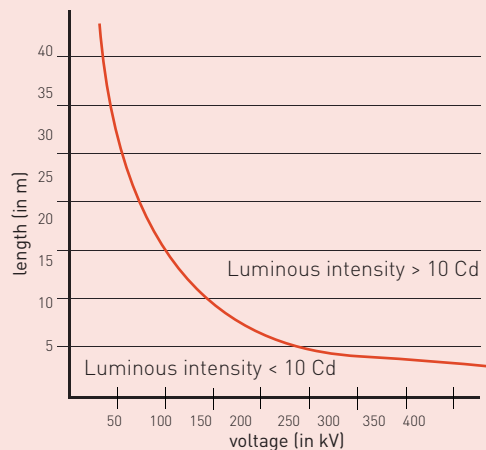
ADDITIONAL FEATURES

WEIGHT AND DIMENSIONS (in mm)

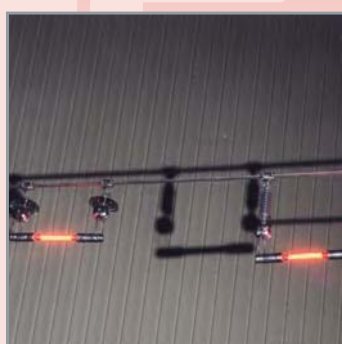


Type	A	B	Weight
Lamp type B	563 +/- 5	901 +/- 5	4.7 kg
Lamp type B33	376 +/- 5	714 +/- 5	4 kg

Length of the drift depending on the voltage



			Number of elements depending on voltage line			
Unit weight	Code	Désignation	115 kV	132 kV	220 kV	380 kV and more
0.85 kg	00637	Clamp	7	6	4	3
3.50 kg	00621	Insulator	7	6	4	3
0.10 kg	00636	Shunt braid	1	1	1	1
0.50 kg	00628	Simplified auxiliary holder	7	6	-	-
2.00 kg	00631	Lampe holder	-	-	2	2
1.35 kg	00632	Auxiliary tubing holder	-	-	2	1
1.90 kg	00623	Auxiliary tubing	5	4	2	1
0.50 kg	00606	Flexible connector	2	2	-	-
0.50 kg	00624	Lamp end suspender	2	2	-	-
4.70 kg	00618	BALISOR B lamp	1	1	1	1
4.00 kg	00616	BALISOR B33	-	-	-	-



BATTERY CABINET

The obstacles which require permanent back-up must be fed by a battery cabinet that can supply 12 hours of autonomy in case of power failure. This power cabinet draws its power from the AC main supply and outputs a DC voltage 48V or 24V to feed the lights.



Set chargers / batteries

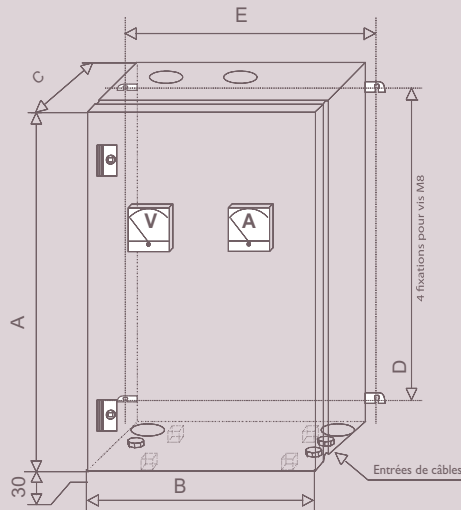
- metal enclosure
- AC - DC
- integration of all the auxiliary functions of control and regulation
- protection against transient overvoltage
- protection against deep discharge batteries (optional)
- thyristor rectifiers on some versions
- high robustness against disturbances and electromagnetic surges

MAIN CHARACTERISTICS

Power cabinet		Capacity	Power supply	Output voltage	Max DC intensity	Number max. of OBSTA STI for 12 hours autonomy
IP20	IP55					
13500	13510	16 Ah	230 V	48 V	2,5 A	4 lights STI / 8 lights NAVILITE
13501	13511	25 Ah	230 V	48 V	4 A	7 lights STI / 14 lights NAVILITE
13502	13512	40 Ah	230 V	48 V	6 A	12 lights STI / 24 lights NAVILITE
13506	13516	7 Ah	230 V	48 V	2 A	2 lights STI / 4 lights NAVILITE
13507	13517	3.5 Ah	230 V	48 V	2 A	1 light STI / 2 lights NAVILITE
13504	13514	40 Ah	230 V	24 V	8 A	1 light MI 24V to 20 flashes/minute
13505	13515	65 Ah	230 V	24 V	12 A	1 light MI 24V to 40 flashes/minute

ADDITIONAL FEATURES

DIMENSIONS (In mm)



IP degree	20
Operating temperature	0 to 45°C
Power supply	220 V +/-10% ; 50 Hz
Attachment	secured by wall brackets (except for the 40 Ah 48V) or placed on a flat surface
Connection	by terminal
Maintenance	none
Batteries	lead, gelled type

Specific precautions

- use indoors (except for double-casing cabinet),
- recharge batteries during prolonged storage.

Complementary functions

Output voltage control in manual mode or in automatic mode by crepuscular photoelectric cell.

Other versions

With double-casing for outdoor installation (IP55). See table

Dimensions (mm)	48 VDC					24 VDC		Double-casing
Capacity	3,5 Ah	7 Ah	16 Ah	25 Ah	40 Ah	40 Ah	65 Ah	All models
IP degree	20	20	20	20	20	20	20	55
A	600	600	700	800	800	700	800	1000
B	400	400	500	600	600	500	600	800
C	200	200	250	250	250	250	250	300
D	560	560	660	760	760	660	760	960
E	458	458	558	658	658	558	658	858
Indicators	no	no	yes	yes	yes	yes	yes	Depends on models
Weight (kg)	29.4	33.8	62	84	104.8	75.2	135	Add 38.2 kg

PHOTOCELL



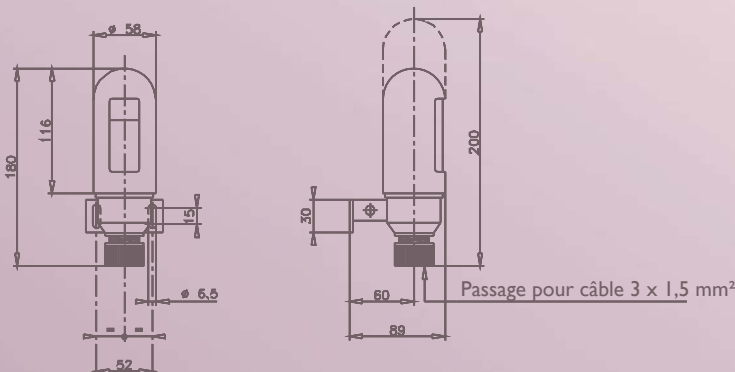
Photocell

- 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

MAIN CHARACTERISTICS

PHOTOCELL	Power supply	Switching threshold of the cell
00752	230 V ~	50 lux
13667	110 V ~	
00755	48 V =	
00754	24 V =	

DIMENSIONS (In mm)



IP degree	67
Operating temperature	-25 to +60°C
Voltage tolerance	-10 ; + 15 %
Consumption	1.5 VA
Weight	300 grs
Attachment	by harness and screws
Connection	screw terminal
Maintenance	none
Complementary functions	10A contact closed in darkness

SOLAR POWER SYSTEM

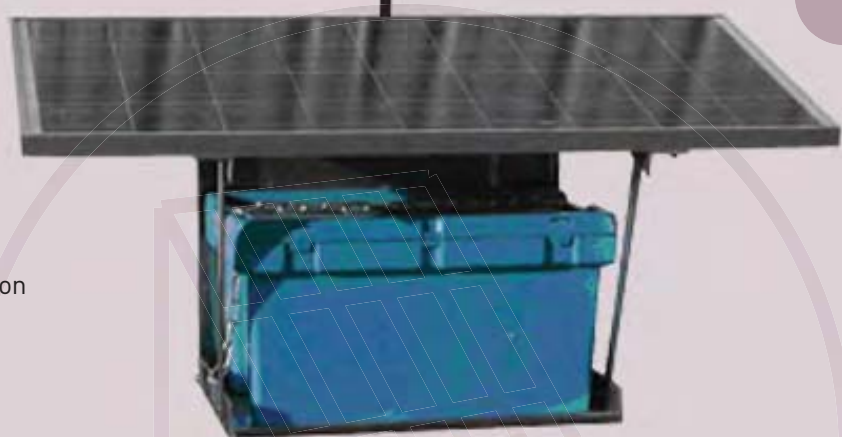
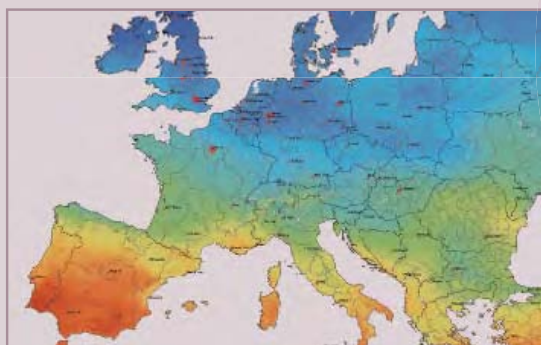
This kit consists of one or two lamps in redundancy, 12V or 24V, low and/or medium intensity, that must be installed on top of the obstacle.



Pre-wire solar generator

- a photovoltaic panel
- 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

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



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

- diameter: 600 mm
- material: polyethylene reinforced
- weight: 6,90 kg
- colors : orange aviation, red aviation or white
- clamps: aluminium AlSi7Mg0.3 adapted to the diameter of the cable
- plate and bolts: hot galvanized steel
- optional armor rods for aluminium cable and OPGW (consult us)

MAIN CHARACTERISTICS

OBSTA part number	Color *	Clamp diameter *	Armor rod *
13655	Red aviation, orange aviation, white	From 9.3 mm to 54.8 mm	Optional

* to be defined when ordering



RELIABILITY IN OBSTRUCTION LIGHTING

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