

Obstacle warning lights

Low-intensity LED obstacle warning light BA15



Application

The International Civil Aviation Organization (ICAO) has defined the specification for installation of Obstacle Warning Lights in the Annex 14 to the convention on international civil aviation, Volume 1 «Aerodrome design and operations» (July 1999).

The following structures are considered as obstacles to civil aviation:

- Factory chimneys,
- Towers (Telecom, TV, ...),
- High Voltage overhead cables,
- Bridges,
- High rise buildings,
- Electrical power generation stations,
- Cranes.

The BA15 LED obstacle warning lights are conforming the ICAO requirement thanks to its luminous intensity of more than 10 cd. Furthermore, the use of LED offers huge benefits in terms of life time (more than 100 000 h), reliability and extremely weak electrical consumption (3W).

Installation

The low-intensity lights are installed on structures not exceeding 150 m high. Above 45 m, several levels of beaconing are required. The interval between two beacon levels must not exceed 45 m as well. For factory chimneys, the obstacle warning lights must be installed from 1.5 m to 3 m maximum from the top of the structure. Three lights should be fixed regularly at 120° along the chimney circumference.

The BA15 LED obstacle warning lights are available either as a single unit or complete with a stainless steel mounting brackets as well as a connection box for power supply. An integrated photocell is also available upon request (option).

Depending on the obstacle location (above a take off climb surface for example), the ICAO requires uninterruptible beaconing in every circumstances ie. BBS system (master & slave) and uninterruptible power system. The BA15 lights are therefore available with double stainless steel mounting brackets and BBS (master and slave) operating system.

Obstacle warning lights

Power supply and service continuity

The BA15 obstacle warning lights are delivered with 3 m cable for power supply.
The input voltage could be 12V, 24V, 48V, 110V or 230V-50Hz, upon requirement of the customers.

The BA15 lights are also available with a beacon failure alarm driving box (option).

A UPS cabinet with 12 h autonomy (0/+20%) is available as well according to ICAO requirement for uninterruptible beaconing in every circumstances.

Technical Manual

Technical specifications

Type	BA15 12V	BA15 24V	BA15 48V	BA15 110V	BA15 230V
Light source	LED				
Colour	RED				
Lens	Metacrylate				
Long Life:	100 000 h				
Input voltage	12V	24V	48V	110V	230V-50Hz
Power consumption :	3W				
Luminous intensity	> 10 cd				
Photocell	available on request				
Class	IP 66				
Weight	1 kg				

Obstacle warning lights

Low-Intensity Neon Lights BA20 and BA30



Application

The International Civil Aviation Organization (ICAO) has defined the specification for installation of Obstacle Warning Lights in the Annex 14 to the convention on international civil aviation, Volume 1 «Aerodrome design and operations» (July 1999).

The following structures are considered as obstacles to civil aviation:

- Factory chimneys,
- Towers (Telecom, TV, ...),
- High Voltage overhead cables,
- Bridges,
- High rise buildings,
- Electrical power generation stations,
- Cranes.

The BA20 and BA30 Neon obstacle warning lights are conforming the ICAO requirement thanks to their luminous intensity of more than 20 cd for the BA20 model (Type A low-intensity obstacle warning light) and more than 35 cd for the BA30 model (Type B low-intensity obstacle warning light). The use of neon tube offers benefits in terms of life time (25 000 h) and lower electrical consumption (15-25W) compared to incandescent bulbs lights.

Installation

The low-intensity lights are installed on structures not exceeding 150 m high. Above 45 m, several levels of beaconing are required. The interval between two beacon levels must not exceed 45 m as well. For factory chimneys, the obstacle warning lights must be installed from 1.5 m to 3 m maximum from the top of the structure. Three lights should be fixed regularly at 120° along the chimney circumference.

The BA20 and BA30 Neon obstacle warning lights are available either as a single unit or complete with a stainless steel mounting brackets as well as a connection box for power supply. A photocell is also available upon request (option).

Depending on the obstacle location (above a take off climb surface for example), the ICAO requires uninterruptible beaconing in every circumstances ie. BBS system (master & slave) and uninterruptible power system. The BA20 and BA30 lights are therefore available with double stainless steel mounting brackets and BBS (master and slave) operating system.

Obstacle warning lights

Power supply and service continuity

The BA20 and BA30 obstacle warning lights are delivered with 3 m cable for power supply. The input voltage could be 24V, 48V, 110V, or 230V-50Hz upon requirement of the customers.

The BA20 and BA30 lights are also available with a beacon failure alarm driving box (option).

A UPS cabinet with 12 h autonomy (0/+20%) is available as well according to ICAO requirement for uninterruptible beaconing in every circumstances.

Technical Manual

Technical specifications

Type	BA20 24V	BA20 48V	BA20 230V	BA30 230V
Light Source	Neon			
Colour	RED			
Lens	Metacrylate			
Long Life	25 000 h			
Input voltage	24V	48V	230V-50Hz	230V-50Hz
Power consumption	15W	15W	20W	25W
Luminous intensity	> 10 cd	> 10 cd	> 20 cd	> 35 cd
Class	IP 66			
Weight	2 kg			
Interference-free	YES			

Obstacle warning lights

Low-intensity BA10 Light



Application

The International Civil Aviation Organization (ICAO) has defined the specification for installation of Obstacle Warning Lights in the Annex 14 to the convention on international civil aviation, Volume 1 «Aerodrome design and operations» (July 1999).

The following structures are considered as obstacles to civil aviation:

- Factory chimneys,
- Towers (Telecom, TV, ...),
- High Voltage overhead cables,
- Bridges,
- High rise buildings,
- Electrical power generation stations,
- Cranes.

The BA10 obstacle warning light is conforming the ICAO requirement thanks to its luminous intensity of more than 35 cd. The use of incandescent bulb offers benefits in terms of cost as well as disadvantages in term of life time (8 000 h) and power consumption (55W).

Installation

The low-intensity lights are installed on structures not exceeding 150 m high. Above 45 m, several levels of beaconing are required. The interval between two beacon levels must not exceed 45 m as well. For factory chimneys, the obstacle warning lights must be installed from 1.5 m to 3 m maximum from the top of the structure. Three lights should be fixed regularly at 120° along the chimney circumference.

The BA10 obstacle warning lights are available either as a single unit or complete with a stainless steel mounting brackets as well as a connection box for power supply. A photocell is also available upon request (option).

Depending on the obstacle location (above a take off climb surface for example), the ICAO requires uninterruptible beaconing in every circumstances ie. BBS system (master & slave) and uninterruptible power system. The BA10 lights are therefore available with double stainless steel mounting brackets and BBS (master and slave) operating system.

Obstacle warning lights

Power supply and service continuity

The BA10 obstacle warning lights are delivered with 3 m cable for power supply. The input voltage could be 12V, 110V-50Hz or 230V-50Hz upon requirement of the customers.

The BA10 lights are also available with a beacon failure alarm driving box (option).

A UPS cabinet with 12 h autonomy (0/+20%) is available as well according to ICAO requirement for uninterruptible beaconing in every circumstances.

Technical Manual

Technical specifications

Type	BA10 12V	BA10 110V	BA10 230V
Light source	Incandescent bulb - E27 mounting		
Colour	RED		
Lens	Glass «Fresnel» type		
Base	Polyamide		
Input voltage	12V	110V-50Hz	230V-50Hz
Long Life	2 000 h	2 000 h	8 000 h
Power Consumption	55W	55W	55W
Luminous Intensity	> 35 cd	> 35 cd	> 35 cd
Class	IP 65		
Weight	1,5 kg		

Obstacle warning lights

Medium-Intensity BA200 and BA202 Lights



Application

The International Civil Aviation Organization (ICAO) has defined the specification for installation of Obstacle Warning Lights in the Annex 14 to the convention on international civil aviation, Volume 1 «Aerodrome design and operations» (July 1999).

The following structures are considered as obstacles to civil aviation:

- Factory chimneys,
- Towers (Telecom, TV, ...),
- High Voltage overhead cables,
- Bridges,
- High rise buildings,
- Electrical power generation stations,
- Cranes.

The ICAO recommends the installation of medium-intensity obstacle warning lights for structures above 45 m. For height above 150 m, the lighting of the structure should be completed with red & white marking.

The medium-intensity BA200 and BA202 obstacle warning lights are conforming the ICAO requirements for night beaconing (BA200 model with a luminous intensity > 2 000 cd) and day & night beaconing (BA202 model with luminous intensity > 20 000 cd for day use and > 2 000 cd for night use).

Installation

For structures not exceeding 105m, a single level of medium-intensity obstacle warning lights is required by ICAO (Annex 14, Volume 1, figure 6.1).

Above 105 m, several beaconing levels are requested, with a maximum interval of 105 m between two levels.

For factory chimneys, the obstacle warning lights must be installed from 1.5 m to 3 m maximum from the top of the structure. Three lights should be fixed regularly at 120° along the chimney circumference.

Lastly, the BA200 and BA202 models are flashing according to the ICAO requirements (20 to 60 flashes per minute).

Depending on the obstacle location (above a take off climb surface for example), the ICAO requires uninterruptible beaconing in every circumstances ie. uninterruptible power system.

Obstacle warning lights

Power supply and service continuity

The BA200 and BA202 obstacle warning lights are delivered with a driving box and a 5 m power supply cable between the lamp and this box.

This cable is including a IP 68 fast connector on the driving box side.

48V and 230V-50Hz input voltage are available.

In case of beaconing of several tall structures on the same site (such as towers, wind turbines...), a synchronized operation is available on request via optical fibre (optical fibre connection box).

A UPS cabinet with 12 h autonomy (0/+20%) is available as well according to ICAO requirement for uninterruptible beaconing in every circumstances.

Technical Manual

Technical specifications

Type	BA200	BA202
Light Source	omni-directionnal quartz/xenon	
Colour	RED	WHITE
Luminous intensity	> 2 000 cd	> 2 000 cd (night) et > 20 000 cd (day)
Flashing rate	20 à 60 flashes/minute	
Long Life	15 000 h to 20 000 h	
Input voltage	48V, 230V-50Hz	
Power Consumption	200W	
Weight	3 kg	
Driving box	Fiber glass armed polyester	
Class	IP 65	
Driving box dimensions	430 x 330 x 200 mm	530 x 430 x 200 mm
Driving box weight	12 kg	15 kg

Obstacle warning lights

Medium-Intensity BA155 Lights



Application

The International Civil Aviation Organization (ICAO) has defined the specification for installation of Obstacle Warning Lights in the Annex 14 to the convention on international civil aviation, Volume 1 «Aerodrome design and operations» (July 1999).

The following structures are considered as obstacles to civil aviation:

- Factory chimneys,
- Towers (Telecom, TV, ...),
- High Voltage overhead cables,
- Bridges,
- High rise buildings,
- Electrical power generation stations,
- Cranes.

The ICAO recommends the installation of medium-intensity obstacle warning lights for structures above 45 m. For height above 150 m, the lighting of the structure should be completed with red & white marking.

The medium-intensity BA155 obstacle warning lights are conforming the ICAO requirements for night beaconing with a luminous intensity > 2 000 cd.

Installation

For structures not exceeding 105 m, a single level of medium-intensity obstacle warning lights is required by ICAO (Annex 14, Volume 1, figure 6.1).

Above 105 m, several beaconing levels are requested, with a maximum interval of 105 m between two levels.

For factory chimneys, the obstacle warning lights must be installed from 1.5 m to 3 m maximum from the top of the structure. Three lights should be fixed regularly at 120° along the chimney circumference.

The ICAO requires the Type B medium-intensity obstacle warning lights to flash (20 to 60 flashes per minute) and the Type C medium-intensity obstacle warning lights to operate on fix position only. The BA155 model is therefore available either flashing or fix, upon customers requirement. Furthermore, the BA155 lights are available in red or white colour.

Depending on the obstacle location (above a take off climb surface for example), the ICAO requires uninterruptible beaconing in every circumstances ie. uninterruptible power system.

Obstacle warning lights

Power supply and service continuity

12V, 24V and 230V-50Hz input voltage are available.

In order to ensure the service continuity of the beaoning, the BA155 obstacle warning lights are equipped with a 6 lamps self-loading system, allowing the light to stay in operation when one of the halogen lamps is failing.

A UPS cabinet with 12 h autonomy (0/+20%) is available as well according to ICAO requirement for uninterruptible beaoning in every circumstances.

Technical Manual

Technical specifications

Type	BA155
Light Source	Halogen
Focal Distance	77.5 mm, Fresnel Lens 35 prisms
Colour	RED or WHITE
Luminous Intensity	> 2 000 cd
Flashing rate	20 to 60 flashes/minute
Long Life	> 15 000 h
Input voltage	12V, 24V, 230V-50Hz
Power consumption	100W
Weight	3 kg

Obstacle warning lights

High Voltage BHT obstacle warning light



Application

The International Civil Aviation Organization (ICAO) has defined the specification for installation of Obstacle Warning Lights in the Annex 14 to the convention on international civil aviation, Volume 1 «Aerodrome design and operations» (July 1999).

The High Voltage overhead cables are included into the obstacles to civil aviation. These HV lines represent a real danger for aircraft flying at low altitude. Moreover, the higher tensions are, the larger the distance between two pylons are. As a result, the ranges are often very long and the beaconing of the supporting towers with low or medium-intensity obstacle warning lights does not fulfil the ICAO requirements. In this framework, the installation of beacons on the lines themselves is the only technically and financially sounded way to follow the ICAO recommendations.

With a luminous intensity of more than 10 cd, the High Voltage BHT lights are providing an effective and user-friendly solution to the ICAO requirements for HV lines beaconing.

Installation

The installation specification for High Voltage overhead cables are mainly dealing with the intervals between two beacons:

- 70 m for sensitive location in the vicinity of an airport,
- 105 m for other locations.

Moreover, the light can not be fixed at less than 10 m from the closest supporting tower.

Obstacle warning lights

Power supply and service continuity

The BHT light power supply is provided by the HV overhead cable to be protected.
The type of capacitive tapings used depends on the cable voltage:

BHT model M1 for voltage > 220 kV

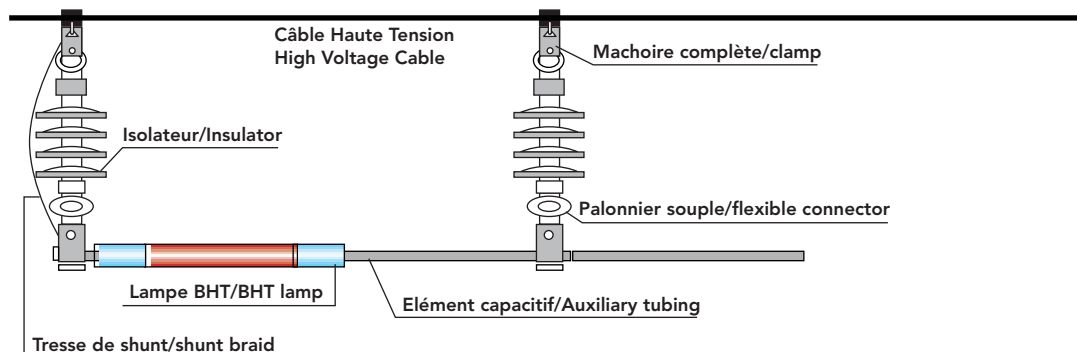
BHT model M2 for voltage > 160 kV

BHT model M3 for voltage > 90 kV.

Technical specifications

Type	BHT
Light Source	Neon discharge lamp
Couleur	RED
Luminous Intensity	> 10 cd
Long Life	> 25 000 h
Power Supply	capacitive
Class	IP 65

Schematic



Obstacle warning lights

Masts



Application

The masts equipped with a windsock are indicating the wind direction. In the vicinity of airports, the masts must follow the French Civil Aviation Technical Department (STNA) requirements and must be certified by this Department.

The mast as well as the windsock must also follow the ICAO requirements in terms of marking (white & red alternate colours or orange colour).

Besides these specific areas in the vicinity of the airports, the masts are free of STNA agreement. They are mainly used on industrial sites, specially for hazardous products.

Installation

The STNA approved mast is 7.40 m high. It is made of galvanised steel (stainless steel masts are also available on request). Guy wires are fixed on the mast at 3.05 m from the ground level. These tipping masts allow an easy replacement of the windsock.

The windsock dimensions are defined by the STNA as follow:

- airports: dia 1 000 mm wind-vane 4.50 m long windsock,
- heliports: dia 600 mm wind-vane 2.40 m long windsock.

The masts are fixed on the ground on a mounting stand (400 x 400 x 5 cm) sealed into a concrete block (600 x 600 x 800 cm).

Smaller concrete blocks (250 x 250 x 400 cm) allow the fixing of the guy wires on the ground.

Obstacle warning lights

Options

For night use in the airports vicinity, the windsock can be lighted (230V or 6.6A light).
For 230V light, a photocell is also available.

Moreover, the STNA approved masts are also available with an obstacle warning light (230V or 6.6A).

Technical Manual

Technical specifications

Type	STNA approved masts	Regular masts
Height	7.40 m	4 m
Material	Galvanised steel (stainless steel on request)	
Fixing	Sealed mounting stand	"U" brackets
Wind-vane	Ø 50 (highways...) Ø 100 (airports) Ø 60 (heliports)	Ø 30, 40 or 50
OPTIONS:		
Windsock lighting	Yes (220V or 6.6A)	No
Obstacle warning light	Yes (220V or 6.6A)	No
Company Logo	Yes	Yes