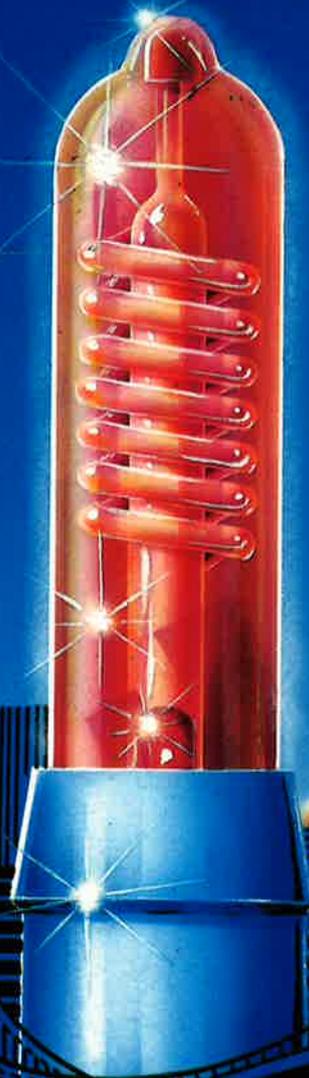


OBSTA

Obstacle
warning
lights



CLAUDE

P REFACE INTRODUCTION

La sécurité

La présence d'obstacles (immeubles, cheminées, poteaux, grues, lignes HT, etc.) représente un danger permanent et important pour la navigation aérienne.

La prise en considération de ces risques a conduit les organismes compétents à définir les mesures nécessaires permettant d'atteindre les niveaux de sécurité exigés par le transport aérien.

La réglementation

Les organismes concernés (OACI, STNA, FAA, etc.) ont élaboré une réglementation définissant les modes de balisage des obstacles présentant un danger. Cette réglementation impose les règles d'installation et les performances minimales des matériels (OACI Annexe 14 chapitre 6 à la convention relative à l'aviation civile internationale).

La solution Claude au balisage des obstacles

CLAUDE a su développer des solutions de balisage originales, en conformité avec la réglementation en vigueur. Les objectifs de développement ont été basés essentiellement sur la recherche de produits de hautes performances.

Dans le souci constant de CLAUDE d'apporter à ses clients et utilisateurs une qualité de service irréprochable, la solution de lampes à incandescence pour le balisage des obstacles a été écartée compte tenu de ses inconvénients majeurs (une durée de vie limitée, une fiabilité médiocre, un rendement faible, etc.). Les raisons de ce choix sont liées à la nécessité de continuité de service du balisage (sécurité) et aux lieux d'installation de ces lampes, en général difficiles d'accès. La maintenance sera donc délicate et onéreuse sur ce type d'installation.

Fort de son expérience, CLAUDE a retenu la décharge à cathodes froides dans les gaz rares (néon) comme principe de base pour le développement d'une gamme complète de produits pour le balisage des obstacles à la navigation aérienne.

Safety

The presence of obstacles (buildings, chimney stacks, pylons, tower cranes, HV lines, etc.) is a major hazard for aircraft.

The appropriate authorities have defined rules on the marking of such obstacles to obtain the required degree of safety.

The regulations

The organizations involved (ICAO, STNA, FAA, etc.) have drawn up regulations defining how dangerous obstacles must be marked. These regulations lay down rules on the installation and characteristics of beacons (chapter 6 of Appendix 14 to the ICAO international agreement on civil aviation).

The CLAUDE technique for obstacle beacons

CLAUDE has developed original beaconing techniques complying with regulations in force. The basic objective of the research was to develop very high-performance equipment.

CLAUDE's constant aim is to offer its customers and users impeccable service; the use of filament lamps was therefore rejected, since they have major disadvantages (limited life, mediocre reliability, poor efficiency, etc.). Beacon lights must offer absolutely continuous service (for safety) and are frequently installed in highly-inaccessible positions; incandescent lamps therefore imply delicate, and consequently costly, maintenance. A better solution had to be found!

On the basis of its extensive experience, CLAUDE selected cold-cathode rare gas (neon) lamps as the basic component to develop a complete range of beacons for obstacles to low-flying aircraft.

	Durée de vie moyenne Average life	Exemple en fonctionnement continu In continuous operation	Emission de lumière rouge Red emission	Consommation pour feux basse intensité Consumption of low-intensity lamps	Secours sur batterie (48 V - 10 h d'autonomie) Back-up battery (48 V - with 10 hours back-up provision)
Lampes à incandescence Incandescent lamp	de l'ordre de 1000 à 2000 heures approx. 1000 to 2000 hours	2 à 3 mois 2 to 3 months	obtenue avec un filtre rouge très absorbant, à faible transmission obtained by a red filter: very absorbent and low transmissivity	40 à 60 watts 40 to 60 watts	nécessité d'une grande capacité de stockage (12 Ah par balise) requires high-capacity batteries (12 Ah per beacon)
Lampe à décharge solution CLAUDE The CLAUDE discharge lamp	très supérieure à 25 000 heures much more than 25,000 hours	très supérieur à 3 ans much more than 3 years	obtenue directement par la décharge dans le néon generated directly by discharge through neon	13 watts 13 watts	petite capacité de stockage suffisante (3 Ah par balise) a smaller battery is sufficient (3 Ah per beacon)

Nota : le coût d'une alimentation secourue étant bien supérieur à celui d'une balise, la puissance absorbée par balise est extrêmement importante pour le coût global d'une installation secourue.

Note: because the cost of the back-up power supply is far greater than the one of the beacon itself, the power consumption of each beacon is a very important factor for the overall cost of a back-up system.

R REGULATIONS

Any object which could represent a hazard for low-flying aircraft must be marked by beacon lights. The International Civil Aviation Organization (ICAO) lays down, in appendix 14 (chapter 6) of its convention, internationally-applicable rules on the characteristics of the beacons and their installation. A few of the main points of the regulations on types of obstacles which must be marked, and the corresponding installation rules, are given below.

Extracts from annex 14 ICAO

Low-intensity beacon lights: Characteristics

6.3.11. Low-intensity beacon lights on fixed objects shall be fixed red lights, sufficiently bright to clearly stand-out from surrounding lights and be clearly visible against the general background lighting. The red intensity shall never be less than 10 Cd.

Position of beacons lights

6.3.5. One or several beacon lights shall be placed at the top of the object, with the exception of chimney stacks and other similar types of structure (see 6.3.8.). If the top of the object is more than 45 m above the surrounding ground level, additional lights shall be installed at intermediate levels. These intermediate lights shall be placed as evenly as possible between the light at the top of the object and the ground level. If low or medium-intensity lights are used, the spacing between the lights shall not exceed 45 m.

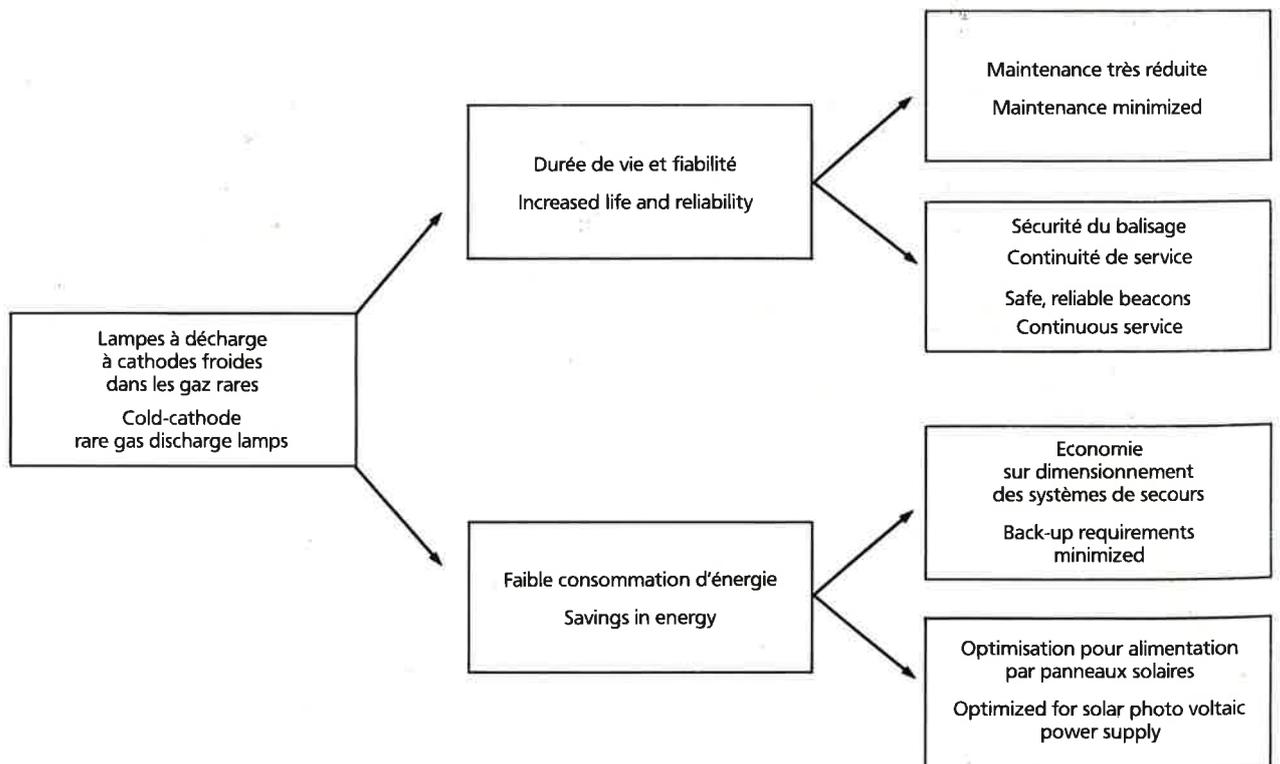
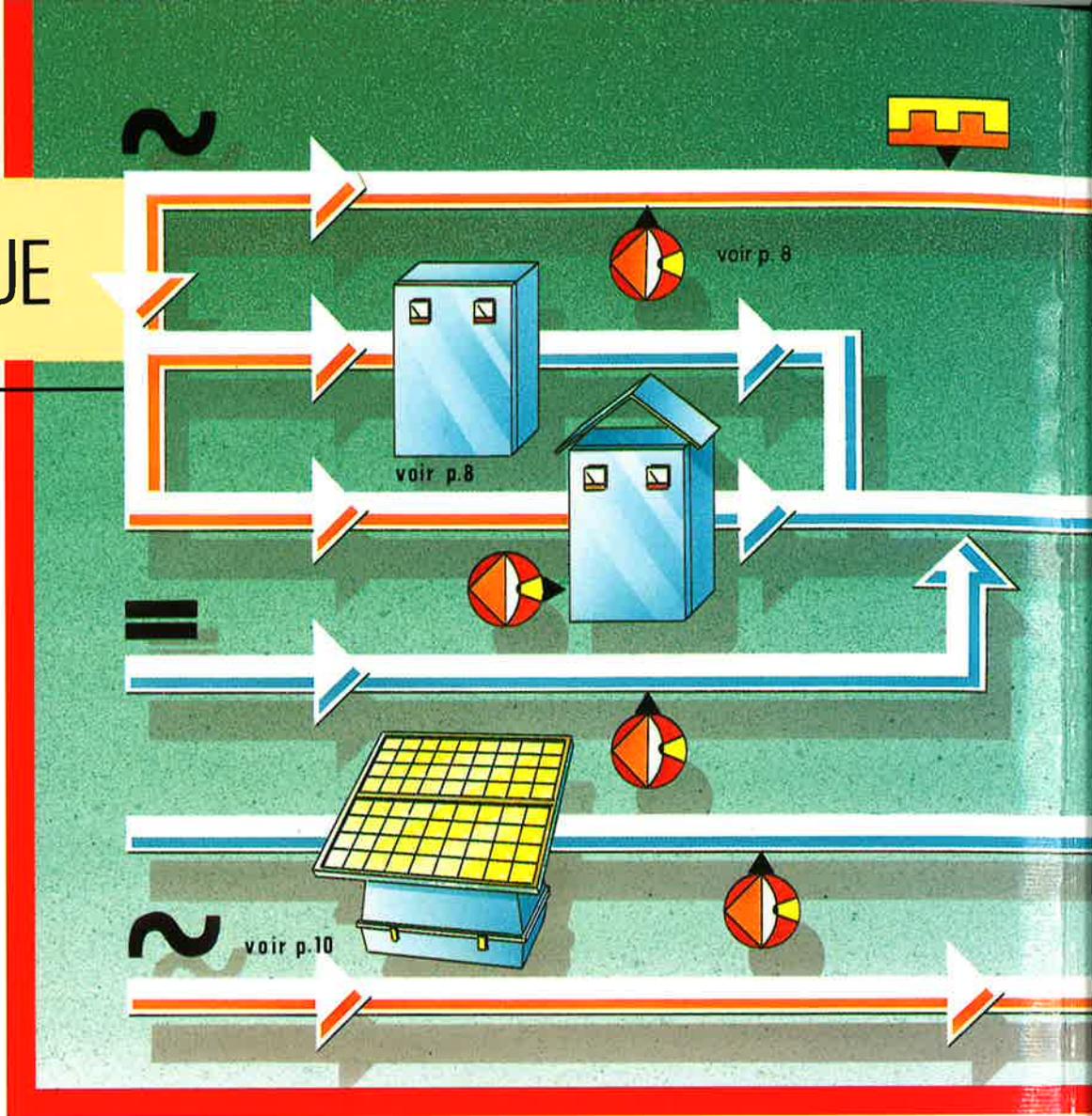
6.3.7. The number and arrangement of lights at each level shall be such that the object is clearly visible from any direction. If a light is masked in a given direction by an adjacent object, additional lights shall be mounted on this object in a way which ensures that the general outline of the marked object is still respected. Any masked light which does not assist in outlining the object shall be eliminated.

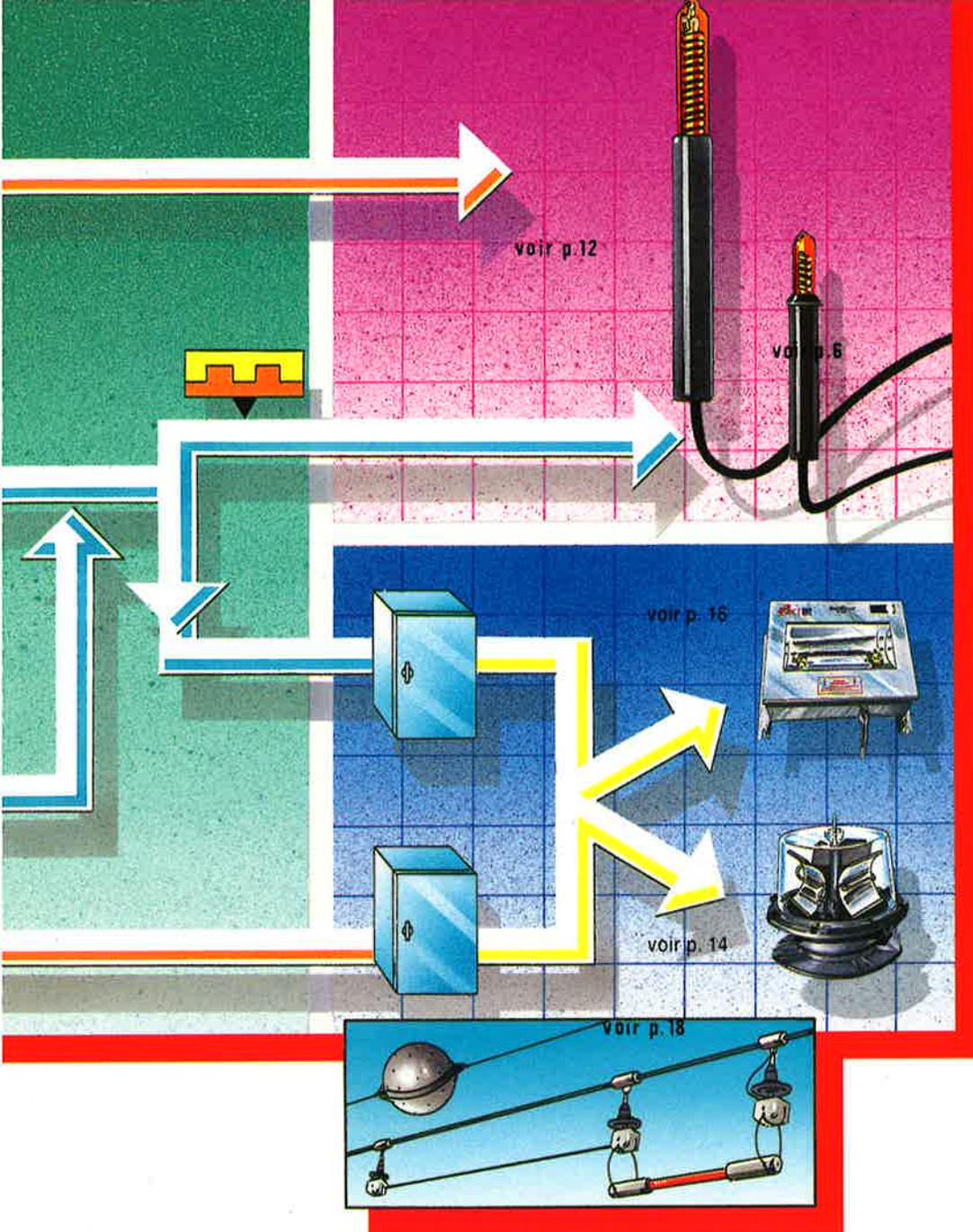
6.3.8. Top lights shall be positioned such that they at least mark the corners and longest edges of the outline surface. On chimney stacks, or similar structures, the top lights shall be placed between 1.5 m and 3 m below the top of the obstacle (see fig. 6.2 and 6.3). For pylons or guyed aeriels, when it is not possible to place a high-intensity light at the top, a high-intensity light shall be positioned as high as possible on the obstacle and a white medium-intensity light at its top.

6.3.9. On large objects or group of objects very close together, top lights must be fitted at least at the corners or along the longest edges of the obstacle outline surface such that the general outline and extent of the object is indicated. If there are two or more edges at the same height, the edge closest to the landing area must be marked. If low-intensity lights are used, they must not be spaced at more than 45 m. If medium-intensity lights are used, the spacing must not exceed 900 m.

S YNOPTIQUE

SYNOPTIC





Définition de l'obstacle à baliser

- type d'obstacles (*cheminée, immeuble, grue, antenne, pylône, lignes HT*)
- hauteur, forme • fumée • etc.

Definition of the obstacle to be marked

- type of obstacle (*chimney, building, crane, aerial, pylon, HV lines*)
- height and shape • smoke • etc.

Consultation de la réglementation OACI annexe 14
(voir pages 4 et 5)

- type et nombre de feux
- emplacement • etc.

ICAO appendix 14 specifications
(see pages 4 and 5)

- type and number of lights
- positions • etc.

Définition des produits à l'aide du synoptique ci-dessus et des fiches-produits correspondantes

Selection of products using the above schematic and the corresponding product data sheets

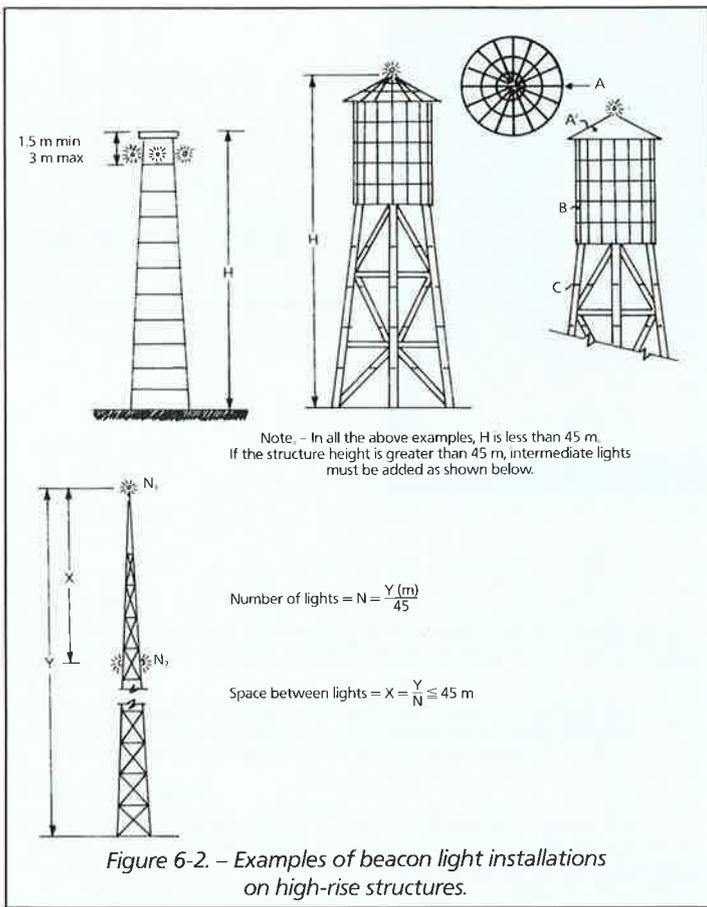
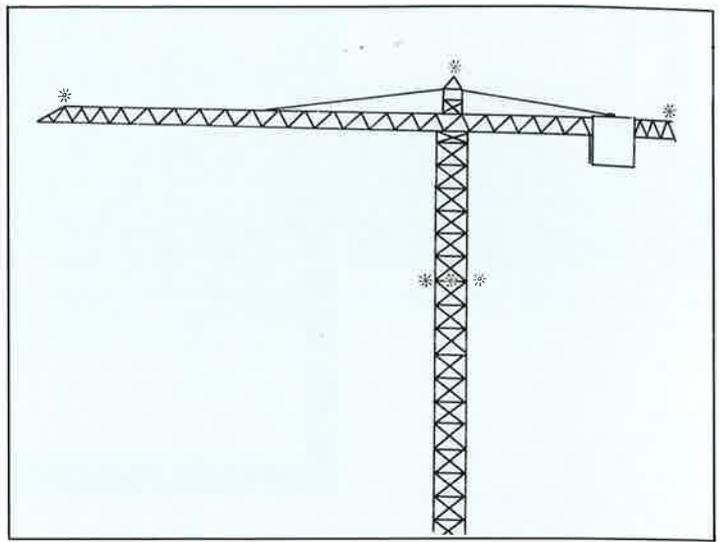


Figure 6-2. – Examples of beacon light installations on high-rise structures.



Beacon lights on a crane

One light at the top of the tower plus an intermediate row of lights every 45 meters.

1 light at the jib tip and 1 at the counterbalance jib tip.

1 intermediate light if the jib is more than 50 meters long.

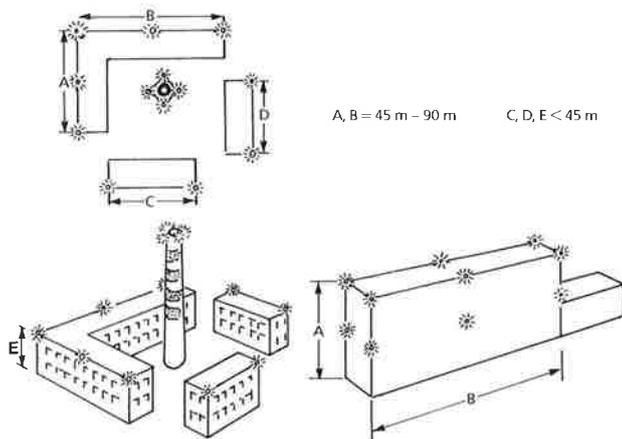


Fig. 6.3. – Beacon lights on buildings

Beacon lights on stacks

Height: 60 m, located outside encumbrances.

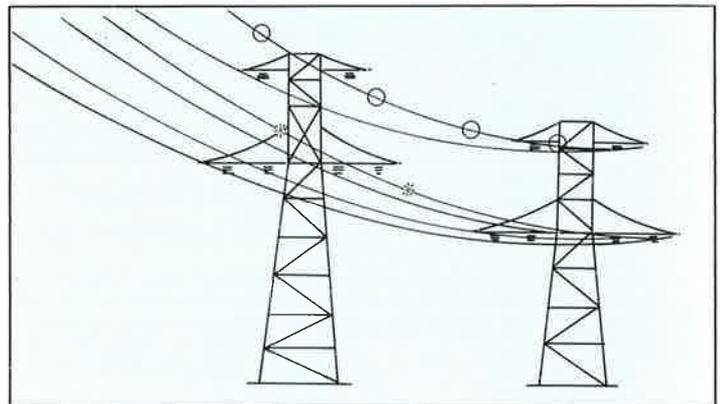
Two sets of beacon lights, each comprising 3 lights separated by 120° around the periphery.

Top lights: 1.50 to 3 m below the top. Second set: 30 m above ground level.

Beacon lights on an autostable pylon

Pylon height: 60 m, cross-section: triangular, pylon located outside encumbrances.

At the top: 2 twin lights, one vertically above the other, such that each light is visible from any direction. If this is impossible, 3 lights placed at 120° around the pylon periphery. At approx 30 m above ground level: 3 lights spaced at 120° around the pylon periphery.



Daytime marking and beacon lights on high-voltage lines

Daytime marking

Cables: alternately red and white spheres, complying with the regulations, placed on the top wire.

Spacing of spheres (a):

- lines in airfield clearance areas: a max = 35 m
- other lines: a max = 52.50 m

Beacon lights

Supports: there must be a beacon light at a maximum distance (b) of 10 meters on either side of the support (applies to supports not more than 45 m high).

Cables: they must be beacon lights on the top active conductor or spread over several conductors. The space (c) between the lights must be such that:

$$c = \frac{D - 2b}{n} \text{ where } D \text{ is the space between the supports (i.e. the cable spans)}$$

n = the number of spaces between beacons in each span

In airfield clearance zones: c max = 70 m

Other lines : c max = 105 m



OBSTA S.T.I.



Application

The OBSTA S.T.I. is designed as a beacon for hazards to low-flying aircraft (buildings, chimney stacks, pylons, cranes, etc.). It falls into the low-intensity category defined by the ICAO (i.e. it generates more than 10 candelas).

The neon discharge principle used offers:

- inherent generation of the "aviation" red
- a very long life
- excellent luminous efficiency
- very low power consumption.

The OBSTA S.T.I. takes its power from a DC source which means its power supply can be, for example:

- a back-up source (batteries) to ensure continuous beaconing: see data sheet 8.
- solar panels: see data sheet 10.

In addition, the very low voltage used means there is no danger to personnel and satisfies the requirements of some standards for hazardous environments.

Main characteristics

OBSTA S.T.I.	Power supply	Luminous intensity	Current drawn	Power consumed	Life
Part 13200	48 V DC	> 10 Cd	250 mA	12 W	> 25,000 h
Part 13300	24 V DC	> 10 Cd	500 mA	12 W	> 25,000 h

Description

THE OBSTA S.T.I. is a one-piece moulded assembly which includes a constant-power inverter and the discharge lamp proper (5 turns).

This new design ensures:

- perfect weatherproofing
- no requirement for a ground connection, which allows any connection configuration to be used and avoids any voltage return from the earth (for example due to lightning).

The overall reliability is thus considerably improved.

The OBSTA S.T.I. also includes:

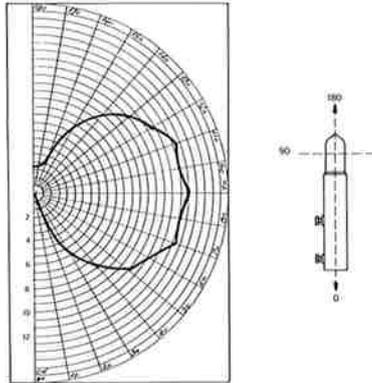
- protection against transient overvoltages
- circuitry to monitor the operation of the lamp and, in the event of a failure, to trigger an alarm or light an auxiliary lamp (if active redundant circuits are used).

Auxiliary functions are also available (photoelectric cell) : see block diagram.

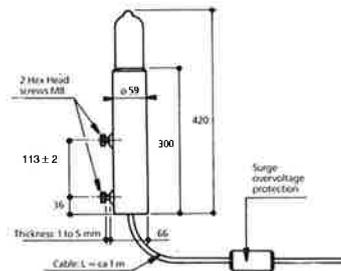
The OBSTA S.T.I. is easy to install and requires no servicing.

Complementary characteristics

Light Intensity Diagram:



IP Degree:..... 66
 Operating temperature: - 20 to + 60 °C
 Power voltage:..... 24 or 48 V(- 10; + 15%)
 Weight: 1.5 kg
 Overall dimensions:

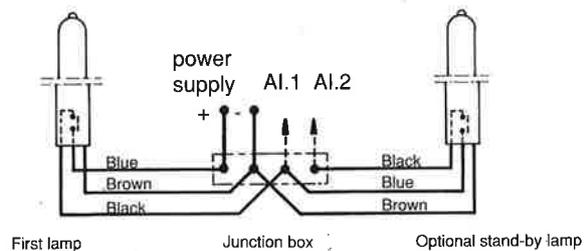


Attachment:..... by 2 screws (tightening thickness: 1 to 5 mm)
 Connection:..... on bare wires (2 power wires, 1 alarm)
 Maintenance:..... none
 Specific precautions: for chimney installations, secure the lamp beneath the top (1.5 to 3 m), in accordance with ICAO's recommendations

For installation with RFI risk, the power supply cable must be shielded.

Complementary functions:

- out of order alarm (relay switching)



- automatic emergency lamp configuration enabling automatic control of an emergency lamp and/or an alarm in case of a fault with the main lamp (active redundancy)
- control by crepuscular photoelectric cell (see p. 16).
- EMC Specification EN 55011, class B.

P OWER SUPPLY CABINETS HOTOCELLS



POWER SUPPLY CABINETS

Application

Obstacles require constant beaconing and, consequently, a continual electric power supply.

CLAUDE power cabinets house battery-charger units, with all the associated annex monitoring and control functions, and are specifically designed to provide continuous service.

Description

The various components in CLAUDE power supply cabinets are grouped in a metal enclosure.

The power supply unit draws its power from the AC mains supply and outputs a DC voltage to feed the lights.

The range of units available offers choice to select the most suitable configuration to match the number of lights and the autonomy required (the STNA require a minimum of 10 hours).

The dry batteries used require no servicing during normal operation.

CLAUDE power supply cabinets are designed for installation in enclosed premises.

Auxiliary functions are also available (photoelectric cells, weatherproof cabinet, etc.): see block diagram.

To further improve the reliability of the equipment, the cabinet includes:

- protection against transient overvoltages
- protection against complete discharge of the batteries.

Main characteristics

POWER SUPPLY CABINET	Capacity	Power supply	Output voltage	Max DC intensity	Max number of OBSTA S.T.I. for 10 h autonomy
P/N 13500	12 Ah	230 V	48 V	2.5 A	4 lights
P/N 13501	20 Ah	230 V	48 V	4 A	7 lights
P/N 13502	36 Ah	230 V	48 V	6 A	12 lights

PHOTOCELLS

Application

CLAUDE photocells are used to automatically switch the beacons on or off to match changes in the daylight level (day/night switching).

Photocells therefore:

- save power (when operating from solar panels or power cabinets for example)
- increase the life of the beacon system
- can fulfill auxiliary functions.

Description

CLAUDE photocells plug into a socket. A delay system prevents the cell triggering on brief flashes (for example lightning). The actuator is a normally open relay.

Main characteristics

PHOTOCELL	Power supply	Triggering level
Part 00752	230 V AC	100 lux
Part 00755	48 V DC	13
Part 00754	24 V DC	

POWER SUPPLY CABINET

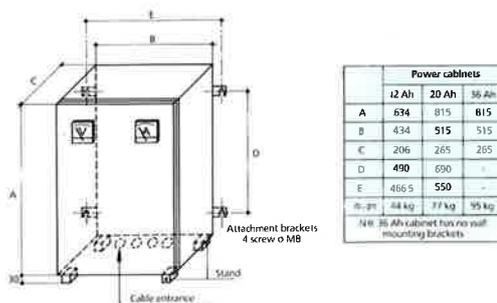
Complementary characteristics:

IP Degree:..... 20

Operating temperature:..... 0 to 45 °C

Power voltage:..... 220 V ± 10 %; 50 Hz

Weight and overall dimensions:



Attachment: secured by wall brackets (except for the 36 Ah cabinet) or placed on a flat surface.

Connection:..... by terminals

Maintenance:..... none.

Particular 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.

Batteries: lead, gelated type

Other versions: with double-casing for outdoor installation (IP 55). See table.

Double casing cabinets		Capacity (Ah)		
		12 Ah	20 Ah	36 Ah
Supply voltage (V)	220 V	13510	13511	13512
	380 V	13520	13521	13522

PHOTOELECTRIC CELL

Complementary characteristics

IP Degree:..... 67

Operating temperature:..... — 25 to + 60 °C

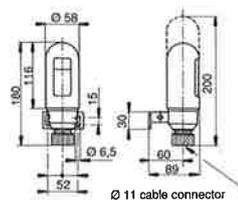
Supply voltage: See recto side

Voltage tolerance:..... — 10 ; + 15 %

Consumption:..... 1,5 VA

Weight:..... 300 g

Overall dimensions:



Attachment:.....by harness and screws

Connection:.....screw terminals

Maintenance:.....none

Complementary functions: 10 A contact closed in darkness

SOLAR POWER



Application

A self-contained source of power is required for beacons in remote spots (where no source of power is accessible).

CLAUDE solar panels use the photovoltaic effects to convert sunlight directly into electricity and thus generate the power required for beacon lights.

The surface area of the panels depends on the insolation of the site and the number of beacons connected.

Description

CLAUDE solar panels are self-contained units (transportable by helicopter) which fulfill the following functions:

- the conversion of sunlight to electricity (polycrystalline silicon photocell panels)
- the storage and control of the power generated (by a battery-charger system and the associated circuits)
- system safety (protection against complete battery discharge, etc.).

The configuration can be easily adapted to match any specific case.

Auxiliary functions are also offered (photoelectric cell, active redundancy, etc.): see block diagram.

Main characteristics

SOLAR STATIONS	Number of panels	Capacity	Output voltage	To operate
TSB 90	2	120 Ah	24 V DC	1 OBSTA S.T.I.
TSB 180	4	180 Ah	24 V DC	1 OBSTA H.I. with appropriate adapter or 2 OBSTA S.T.I.

Complementary characteristics

IP Degree:..... 55

Operating temperature: 0 to + 60 °C

Output voltage: 24 or 48 V on request

Weight:

Overall dimensions:] depending on configuration

Attachment:..... placed on a platform, slab, etc.

Connection: by connector (between the different elements of the station)

Maintenance: annual inspection (level of batteries, cleanliness of panels, etc.).

Particular precautions:

- Avoid shade of surrounding objects.
- Charge the batteries, during prolonged storage.

Complementary functions : crepuscular photoelectric cell (see p. 16)

Batteries: Acid-lead

Photovoltaic panels: polycrystalline

Other versions: Consult us for configurations (power, voltage, site, etc.).



BSTA H.I./S.T.I.

The OBSTA H.I. S.T.I. has been designed to replace the OBSTA H.I. transformer system. Besides the fact that the electronic system is more reliable than an electro mechanical one, the OBSTA H.I. S.T.I. has the following added features:

- The discharge tube and the converter-power supply unit are integrated in one solid, molded, weather proof light.
- This arrangement renders the system free of contact problems. (Corrosion, Electro Magnetic noises, etc.)
- The unique model will adjust itself to the main supply voltages, continuously from 110 to 240 V RMS, 50/60 Hz.
- The total weight of the unit is considerably lowered to a meagre 2.3 kg.
- One alarm contact is factory built into the unit so that a stand by lamp or a remote monitoring of the operation of the lamp is possible without any extra hardware required.
- The unit is not referenced to the ground potential (class II) and thus protected against ground potential changes.
- The power consumption is constant (and so is the light output intensity).

Application

The OBSTA H.I. S.T.I. is a beacon light for obstacles to air traffic (buildings, chimney stacks, pylons, cranes, etc.). It falls into the ICAO low-intensity category, improved.

The neon discharge used offers:

- inherent generation of « aviation » red
- a very long life
- excellent luminous efficiency.

The OBSTA H.I. S.T.I. draws its power directly from the mains supply.

The luminous intensity generated by the OBSTA H.I. S.T.I. (35 candelas) is far higher than the minimum the ICAO regulations require (10 candelas), which considerably increases the visibility of the beacon. This value also complies with the FAA standards in force (minimum required: 32 candelas).

Main characteristics

OBSTA S.T.I.	Power supply	Luminous intensity	Current drawn	Power consumed	Life
Part 13110	From 110 V to 240 V AC 50/60 Hz	> 32 Cd	110 V - 730 mA 240 V - 370 mA	45 W	> 25,000 h

Spare lamps for existing installation

OBSTA H.I. LAMP	Number of turns	Luminous intensity	Interference suppression	Life
Part 00653	13	35 Cd	Normal	> 25,000 h
Part 00654	13	35 Cd	Reinforced against UHF	> 25,000 h



Description

The OBSTA H.I. S.T.I. is a one-piece moulded assembly which includes a constant-power inverter and the discharge lamp proper (13 turns).

This new design ensures:

- perfect weatherproofing
 - no requirement for a ground connection, which allows any connection configuration to be used and avoids any voltage return from the earth (for example due to lightning).
- The overall reliability is thus considerably improved.

The OBSTA H.I. S.T.I. also includes:

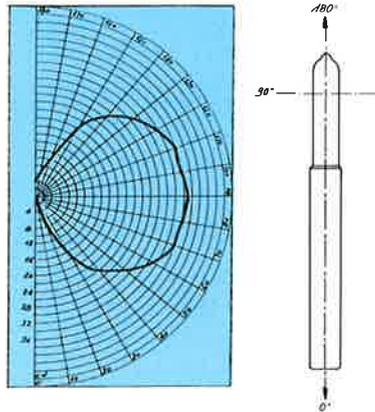
- protection against transient overvoltages
- circuitry to monitor the operation of the lamp and, in the event of a failure, to trigger an alarm or light up an auxiliary lamp (if active redundant circuits are used).

Auxiliary functions are also available (photoelectric cell) see block diagram.

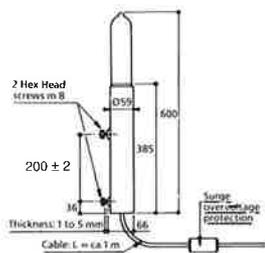
The OBSTA H.I. S.T.I. is easy to install and requires no servicing.

Complementary characteristics

Light Intensity Diagram:



- IP Degree:**..... 66
- Operating temperature:** - 30 to + 60 °C
- Supply voltage:** 110 V to 240 V \sim ($\pm 10\%$) - 50/60 Hz
- Weight:** 2.3 kg
- Overall dimensions (in mm):**

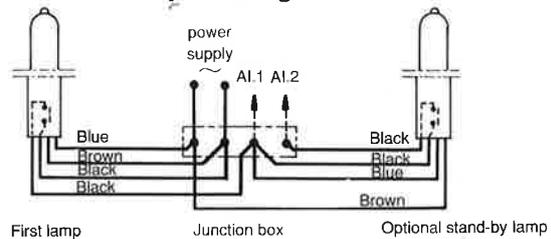


- Attachment:**..... by 2 screws (tightening thickness: 1 to 5 mm)
- Connection:**..... on bare wires (2 power wires, 2 alarm)
- Maintenance:**..... none
- Specific precautions:** for chimney installations, secure the lamp beneath the top (1.5 to 3 m), in accordance with ICAO's recommendations

For installation with RFI risk, the power supply cable must be shielded.

Complementary functions:

- out of order alarm (relay switching)



- automatic emergency lamp configuration enabling automatic control of an emergency lamp and/or an alarm in case of a fault with the main lamp (active redundancy)
- control by crepuscular photoelectric cell (see p. 16)
- EMC specification EN 55011, class B.

MEDIUM INTENSITY OBSTRUCTION LIGHT BEACON SYSTEM



Conforms with ICAO regulations and FAA L. 856 and L. 865 specifications

Extracts from annex 14 ICAO

6.3 2 Recommendation. - Where the use of low - intensity obstacle lights would be inadequate or an early special warning is required then medium or high-intensity obstacle lights should be used.

6.3 3 Recommendation. - Medium-intensity obstacle lights should be used, either alone or in combination with low-intensity obstacle lights, where the object is an extensive one or its height is greater than 45 m.
Note. - A group of trees or buildings is regarded as an extensive object.

6.3 13 Recommendation. - Medium-intensity obstacle lights should be flashing red lights, except when used in conjunction with high-intensity obstacle lights they shall be flashing white lights...

Application

Aviation obstruction warning system

- * Broadcast transmitting towers.
- * Microwave repeater towers.
- * Similar skeletal structures.
- * Temporary obstruction lighting system on chimneys, hyperbolic cooling towers and other tall structures using a high intensity system as permanent obstruction marking.

Main characteristics :

Medium intensity lighting system	Light intensity		Beam spread		Flashes per minute
	White	Red	Vertical	Horizontal	
	> 20 000 cd	> 1600 cd	3 °	360 °	40

Main supply	Frequency	Power consumption	Peak VA
230 V	50 Hz	160 W	< 600 VA

Description

Medium intensity lighting system is a two part assembly which includes a flashead and a control cabinet.

This design ensures :

- * a low weight flashead to be installed anywhere
- * a good weatherproofing
- * an easy installation

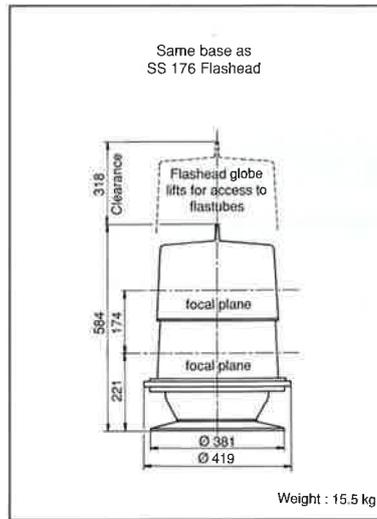
The MI lighting system also includes :

- * automatic day/night switching
- * fault monitoring

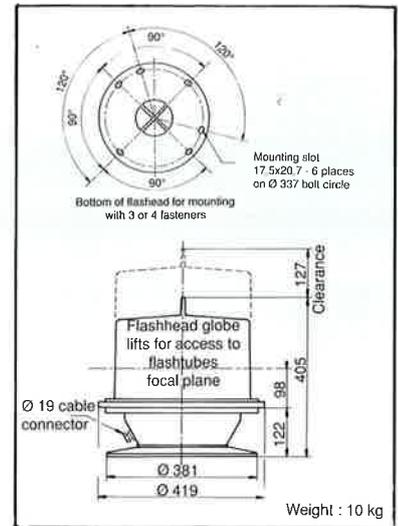
No servicing is required

WEIGHT AND AVERALL DIMENSIONS (in mm) :

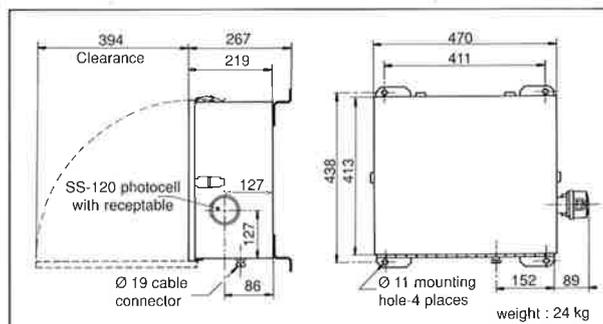
SS 178 Flashhead



SS 176 Flashhead



SS 175 and SS177 Control Cabinet



SYSTEM ELEMENTS

OBSTRUCTION LIGHTING SYSTEM 230 V-50 Hz		MEDIUM INTENSITY	
		Description	Code
FG2000	FLASHHEAD SS176 CONTROL CABINET SS175	white (red as option) one per flashhead	13618
FG3000	FLASHHEAD SS178 CONTROL CABINET SS177	red and white one per flashhead	13617
FLASHHEAD CABLE		length < 200 m	-
SPARE FLASHTUBE ASSY		xenon type	13630

OTHER CHARACTERISTICS

- quartz flashtube especially manufactured
- "weathertight" stainless steel enclosures (in vertical position)
- "plug-in" modular construction with gold-plated contact surfaces
- conformally coated printed circuit cards protect solid state circuitry
- flashhead and control cabinet separation distance up to 200 m (to be specified on the order)
- safety interlock in both flashhead and control cabinet
- day/night automatic switch

OPTIONS

- master/slave multiple beacon systems
- remote mounting of the photocell
- red beacon (red light)
- synchronization with High Intensity system (see page 17)
- other voltage (24 VDC...)

HIGH INTENSITY OBSTRUCTION LIGHT BEACON SYSTEM



Conforms with ICAO regulations and FAA L. 856 specifications

Extracts from annex 14 ICAO

6.3 2 Recommendation. - Where the use of low - intensity obstacle lights would be inadequate or an early special warning is required then medium or high-intensity obstacle lights should be used.

6.3 4 Recommendation. - High-intensity obstacle lights should be used to indicate the presence of :
 a/ an object if its height exceeds 150 m ; or
 b/ a tower supporting overhead wires, cables, etc, where an aeronautical study indicates such lights to be essential for recognition of the presence of wires, cables etc., by day ; or it has not been found practicable to install markers on the wires, cables, etc.

.....
6.3 14 Recommendation. - High-intensity obstacle lights should be flashing white lights.

Applications

Aviation obstruction warning system

- * Broadcast transmitting towers.
- * Microwave repeater towers.
- * Similar skeletal structures.
- * chimneys, cooling towers and all tall structures.

Main characteristics :

High intensity lighting system	Light intensity			Beam spread		Flashes per minute
	Day	Twilight	Night	Site	Azimut	
	200 000 cd	20 000 cd	4 000 cd	± 2 °	± 60 °	40

Main supply	Frequency	Power consumption per light	Elevation of flashhead can be tilted
230 V	50 Hz	≤ 0.5 KVA	- 2 ° to + 8 ° to the horizontal

Description

High intensity lighting system is modular : flashheads include power and optic elements and a controller that drives the total equipment.

This design ensures :

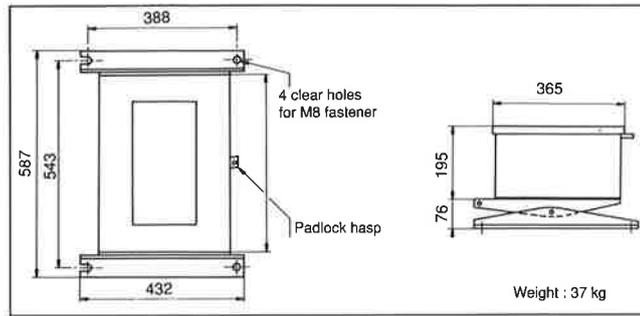
- * a choice of the number of flashheads
- * the synchronisation of all flashes
- * the simultaneous switching mode operation
- * an easy installation with ajustable centerline of the light beam

The HI lighting system also includes :

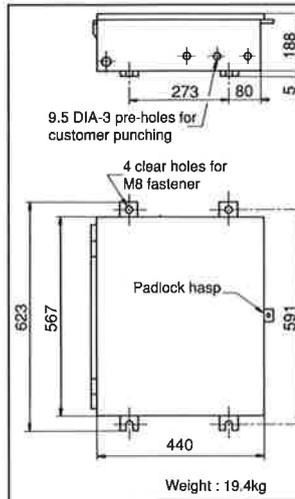
- * protection against transient overvoltages
- * automatic day/twilight/night switching
- * fault monitoring with digital lamp visualisation

WEIGHT AND AVERALL DIMENSIONS (in mm) :

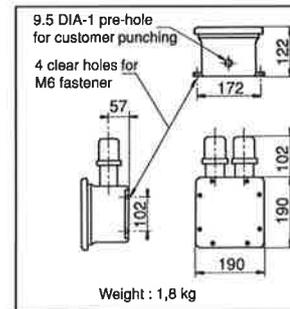
SS 125 Flashhead



SS 122 Controller



SS 124 Photocell



SYSTEM ELEMENTS

OBSTRUCTION LIGHTING SYSTEM 230 V-50 Hz	HIGH INTENSITY	
	Description	Code
FLASHHEAD	white	13621
POWER SUPPLY	N/A	-
CONTROLLER	one per installation	13625
FLASHHEAD CABLE	not supplied as standard	-
SPARE FLASHTUBE ASSY	xenon type	13631

OTHER CHARACTERISTICS

- quartz flashtube especially manufactured
- "weathertight" stainless steel enclosures (in vertical position)
- "plug-in" modular construction with gold-plated contact surfaces
- conformally coated printed circuit cards protect solid state circuitry
- built-in surge arrester
- one controller for the whole installation
- fault indicator in the controller (up to 32 flashheads)
- safety interlock in the flashhead
- day/twilight/night automatic switch

OPTIONS

- inquire for other configurations

BALISORS



Application:

High-voltage lines are a major hazard for low-flying aircraft. Placing beacons on pylons is not sufficient to ensure safety due to the very long spans of cable.

The BALISOR system – exclusive to CLAUDE – beacons high-voltage conductors by tapping the power required directly from the line. The system is, therefore, completely self-contained. The BALISOR falls into the ICAO low-intensity category.

The neon discharge offers:

- inherent generation of the “aviation” red
- a very long life – essential to allow continuing operation of high-voltage lines.

Main characteristics

BALISOR LAMP	Luminous intensity	Voltage of the line	Interference suppression
P/N 00616	> 10 Cd	33 kV	yes
P/N 00618	> 10 Cd	66 kV – 115 kV 132 kV – 220 kV 380 kV	yes

Power tapping accessories configuration depend on power lines, cable diameter...

Description:

The Balisor system comprises:

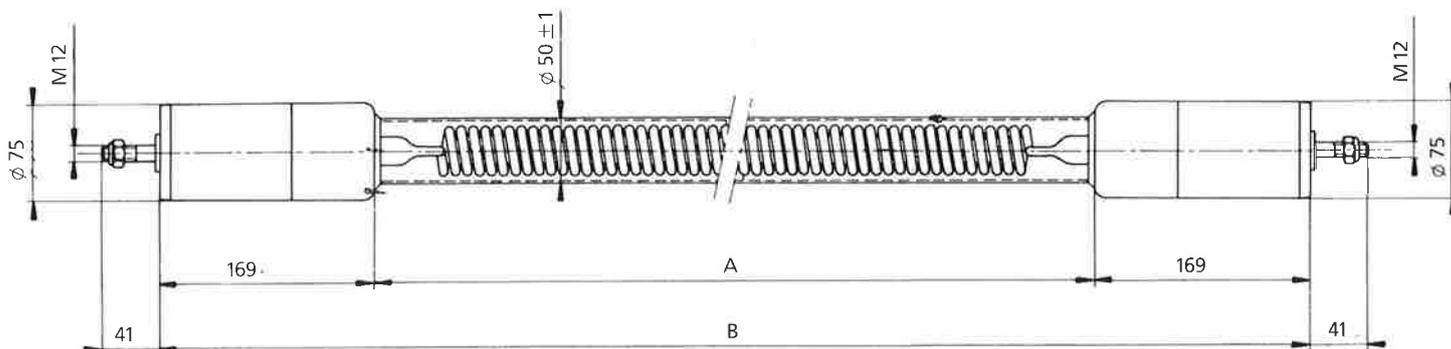
A discharge lamp

- A set of capacitive tapings (which depends on the voltage of the line to be protected)
- A set of accessories for suspension and insulation

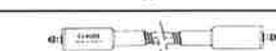
Characteristics:

Lamps weight and dimensions (in millimeters):

	A	B	Weight
B type lamp (49 turns)	563 ± 5	901 ± 5	4,7 kg
B33 type lamp (33 turns)	376 ± 5	714 ± 5	4 kg



Constitutive elements depending on line voltage

Unit weight	Parts	Designation	33 KV	66 KV	115 KV	132 KV	220 KV	380 KV
0.85 kg	00637	Clamp 	10	8	7	6	4	3
3.50 kg	00621	Insulator 	10	8	7	6	4	3
0.10 kg	00636	Shunt braid 	1	1	1	1	1	1
0.50 kg	00628	Simplified auxiliary holder 	1	1	7	6		
2.00 kg	00631	Lamp holder 					2	2
1.35 kg	00632	Auxiliary tubing holder 					2	1
0.95 kg	00630	End double auxiliary tubing holder 	2	2				
1.40 kg	00629	Intermediate double auxiliary tubing holder 	7	5				
1.90 kg	00623	Auxiliary tubing 	16	12	5	4	2	1
0.50 kg	00606	Flexible connector 	2	2	2	2		
0.50 kg	00624	Lamp end suspender 	2	2	2	2		
4.70 kg	00618	BALISOR B lamp 		1	1	1	1	1
4.00 kg	00616	B33 BALISOR 	1					
Unit weight	Parts	Designation	Number of elements 33 KV	Number of elements 66 KV	Number of elements 115 KV	Number of elements 132 KV	Number of elements 220 KV	Number of elements 380 KV

Other versions: with cable capacitive tappings (instead of tubings) for voltage range equal or less than 66 KV, consult us.

QUELQUES INSTALLATIONS

SOME INSTALLATIONS



Photo Claude D.P.S.



Photo Claude D.P.S.



Photo Thomson C.S.F



Photo Claude D.P.S.

REPRESENTED BY

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