

MEDIUM INTENSITY AND LOW INTENSITY MULTILED SYSTEM AIRCRAFT WARNING LIGHTS

Explosion Proof Electrical Equipment



Ex Lighting

MIOL - LIOL

Installation: hazardous areas - Zone 1 / 2 (Gases) - Zone 21 / 22 (Dusts) - Safe area
Classification: Group II - Category 2G 2D

MIOL - LIOL



OBSTRUCTION WARNING LIGHTS

	ATEX 94/9/EC	GOST-R (RTR / RTN)	GOST-K
EXECUTION	Ⓜ II 2 G Ex d IIC T6/T2 Ⓜ II 2 D Ex tD A21 T80°C / T290°C	1Ex d IIC T6 (T5...T2) X DIP A21 TA (80...290)°C	1Ex d IIC T6 (T5...T2) X DIP A21 TA (80...290)°C
INSTALLATION	ZONE 1 / 2 - ZONE 21 / 22 SAFE AREA	ZONE 1 / 2 - ZONE 21 / 22 SAFE AREA	ZONE 1 / 2 - ZONE 21 / 22 SAFE AREA
PROTECTION DEGREE	IP66	IP66	IP66
CERTIFICATE REF.	INERIS 01 ATEX 0054X	POCC IT. Г505.В02536	No. 07/43-269
RULES OF COMPLIANCE	EN 60079-0; EN 60079-1; EN 61241-1	ГОСТ Р 51330.9-99 (МЭК 60079-0-98); ГОСТ Р 51330.1-99 (МЭК 60079-1-98); ГОСТ Р 51330.8-99; ГОСТ Р МЭК 61241-1-1-99	ГОСТ Р 51330.0 / 1 / 8 / 14-99 ГОСТ Р МЭК 61241-1-1-2002
INTERNATIONAL REGULATIONS COMPLIANCY FOR VISUAL AIDS	ICAO International Standards and Recommended Practices: Aerodromes - Annex 14 - Volume 1 - 4th Edition (November 2004) Chapter 6 : Medium Intensity Type B Flashing obstacle light MIOL-B Chapter 6 : Low Intensity Type A-B Steady burning obstacle light LIOL-A / LIOL-B FAA Advisor Circular AC150/5345-43F E.B.#67 - Lamp type MIOL-B / LIOL-A / LIOL-B		

Mechanical characteristics

Body	Marine grade copper free aluminium
Globe	High-temperature resistant borosilicate glass (zone 1/2 - 21/22 version) Transparent polycarbonate U/V resistant (safe area version)
Painting	External epoxy powders grey RAL-9006 colour
Screws	External stainless steel
Gaskets	Silicon rubber
Cable Entry	3/4" NPT size threaded

Electrical characteristics

LEDs	separate groups with individual led protection system - LED technology stabilized by constant current generator
Consumption	LIOL-B = 4,8W (single and dual) / MIOL-B = 30W (single) - 60W (dual)
Medium intensity (MIOL)	flashing light with intensity 2000 cd (+/-25%) flashing 40 flash/minute
Low intensity (LIOL)	steady burning with intensity 32 cd (flashing on request)
Realization	single group LEDs system with own reflector dual groups LEDs system, each group with own reflector (1 main + 1 reserve)

Optical characteristics

Horizontal beam radiation	360° (MIOL / LIOL)
Vertical beam radiation	LIOL = between 5° and 10° / MIOL = 3°
Efficiency	> 91% - pfc factor 0,99
Expetancy life	long life time - more than 10 years

APPLY TO:

FLARE - AIRPORT - STACKS - HIGH BUILDINGS - CHIMNEYS - TOWER CRANE - PIPELINES - BRIDGES - RADIO AND TELEVISION TOWERS
TRANSMISSION LINES - WIND TURBINES - RADAR - and so on

ON REQUEST ACCESSORIES:

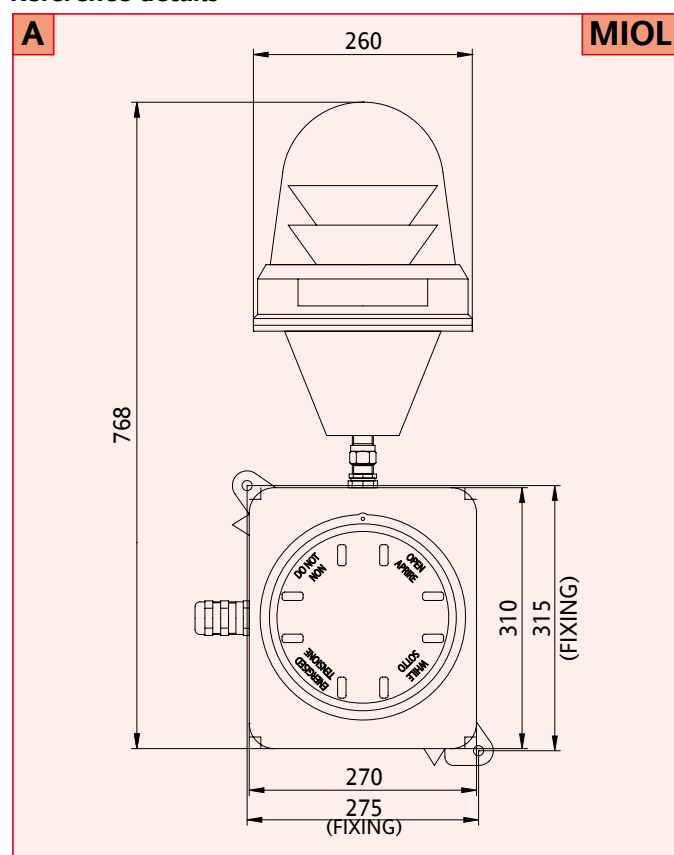
- Stainless steel wire protection guard
- Aircraft Warning Lights and control panel support manufactured in according to customer specification
- External painting colour on request
- Threaded cable entry different than standard
- Control panel with simultaneous or catenary multilight flashing system

MIOL - LIOL Technical data

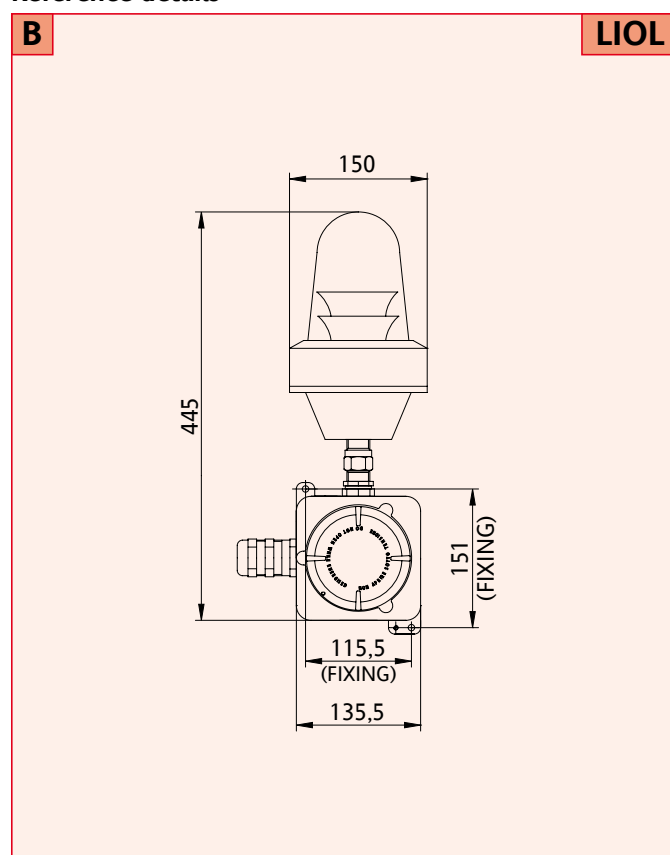
CODE	LED LAMP GROUP	VISUAL AIDS TYPES	FLASHING [x/min.]	EXECUTION	TEMPERATURE CLASS (GAS)	TEMPERATURE CLASS (DUSTS)	CABLE ENTRIES	DETAIL
LOW INTENSITY OBSTRUCTION WARNING LIGHTS								
LIOL-A-S	> 10 cd x 1	RED FIXED	-	Ex-d	T6	T80°C	1 x 3/4"	B
				IP66	-	-	2 x 3/4"	D
LIOL-A-D	> 10 cd x 2	RED FIXED	-	Ex-d	T6	T80°C	1 x 3/4"	B
				IP66	-	-	2 x 3/4"	D
LIOL-B-S	> 32 cd x 1	RED FIXED	-	Ex-d	T6	T80°C	1 x 3/4"	B
				IP66	-	-	2 x 3/4"	D
LIOL-B-D	> 32 cd x 2	RED FIXED	-	Ex-d	T6	T80°C	1 x 3/4"	B
				IP66	-	-	2 x 3/4"	D
MEDIUM INTENSITY OBSTRUCTION WARNING LIGHTS								
MIOL-A-S	= 20.000 cd x 1	WHITE FLASHING	40	IP66	-	-	2 x 3/4"	C
MIOL-A-D	= 20.000 cd x 2	WHITE FLASHING	40	IP66	-	-	2 x 3/4"	C
MIOL-B-S	= 2.000 cd x 1	RED FLASHING	40	Ex-d	T6	T80°C	1 x 3/4"	A
				IP66	-	-	2 x 3/4"	C
MIOL-B-D	= 2.000 cd x 2	RED FLASHING	40	Ex-d	T6	T80°C	1 x 3/4"	A
				IP66	-	-	2 x 3/4"	C
MIOL-C-S	= 2.000 cd x 1	RED FIXED	-	Ex-d	T6	T80°C	1 x 3/4"	A
				IP66	-	-	2 x 3/4"	C
MIOL-C-D	= 2.000 cd x 2	RED FIXED	-	Ex-d	T6	T80°C	1 x 3/4"	A
				IP66	-	-	2 x 3/4"	C

MIOL - LIOL Technical features

Reference details

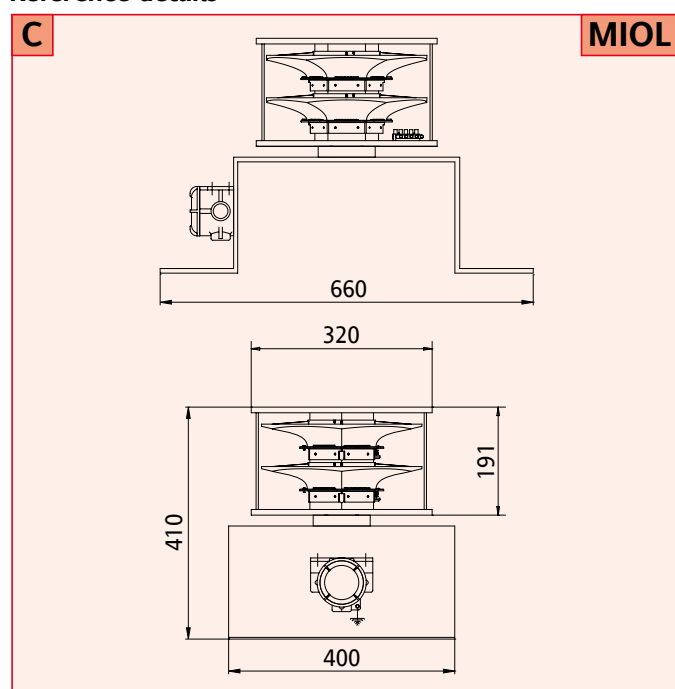


Reference details

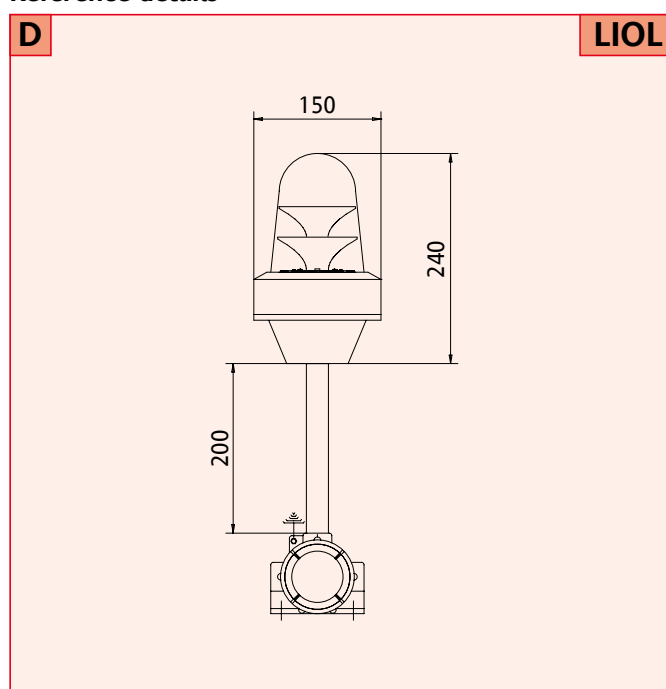


MIOL - LIOL Technical features

Reference details



Reference details



MIOL - LIOL Main rules for aircraft warning lights

MAIN RULES FOR VISUAL AIDS

ICAO Annex 14 - Aerodromes Vol. 1 - Chapter 6 / 10 (July 2004)

- The marking and/or lighting of obstacles is intended to reduce hazards to aircraft by indicating the presence of the obstacles (ICAO: Aerodromes - Annex 14 - Vol. 1 - Ch. 6.1)
- Marking (red-orange/white painting) is used for day time
- Marking may be omitted when the obstacle is lighted
- A fixed obstacle above a horizontal surface should be marked and, if the aerodrome is used at night, lighted.. (ICAO: Aerodromes - Annex 14 - Vol. 1 - Ch. 6.1.4)
- A system of preventive maintenance of visual aids shall be employed to ensure lighting and marking system reliability (ICAO: Aerodromes - Annex 14 - Vol. 1 - Ch. 10.4.2)
- The reliability of installed lighting equipments should not less than one year (ICAO: Aerodromes - Annex 14 - Vol. 1 - Ch. 10.4.6)
- 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, additional light shall be provided (ICAO: Aerodromes - Annex 14 - Vol. 1 - Ch. 6.3.22)
- The number of lights needed for each level depends on the outside diameter of the obstacle
- The top lights should be placed sufficiently below the top, so as to minimize contamination by smoke, powders, and so on.. (ICAO: Aerodromes - Annex 14 - Vol. 1 - Ch. 6.3.12)

AWL TYPES (Aircraft Warning Lights)

LIOL-A / B Low Intensity Obstacle Lights on fixed objects, Type-A / Type-B, shall be steady burning RED lights

(ICAO: Aerodromes - Annex 14 - Vol. 1 - Ch. 6.3.23)

MIOL-A Medium Intensity Obstacle Lights on fixed objects, Type-A , shall be flashing WHITE lights

MIOL-B Medium Intensity Obstacle Lights on fixed objects, Type-B , shall be flashing RED lights

MIOL-C Medium Intensity Obstacle Lights on fixed objects, Type-C , shall be steady burning RED lights

(ICAO: Aerodromes - Annex 14 - Vol. 1 - Ch. 6.3.30)

MIOL-A / MIOL-B Medium Intensity Obstacle Lights Type-A / Type-B, located on an obstacle, shall be flash simultaneously

(ICAO: Aerodromes - Annex 14 - Vol. 1 - Ch. 6.3.32)

HIOL-A / B High Intensity Obstacle Lights on fixed objects, Type-A / Type-B, shall be flashing WHITE lights

(ICAO: Aerodromes - Annex 14 - Vol. 1 - Ch. 6.3.33)

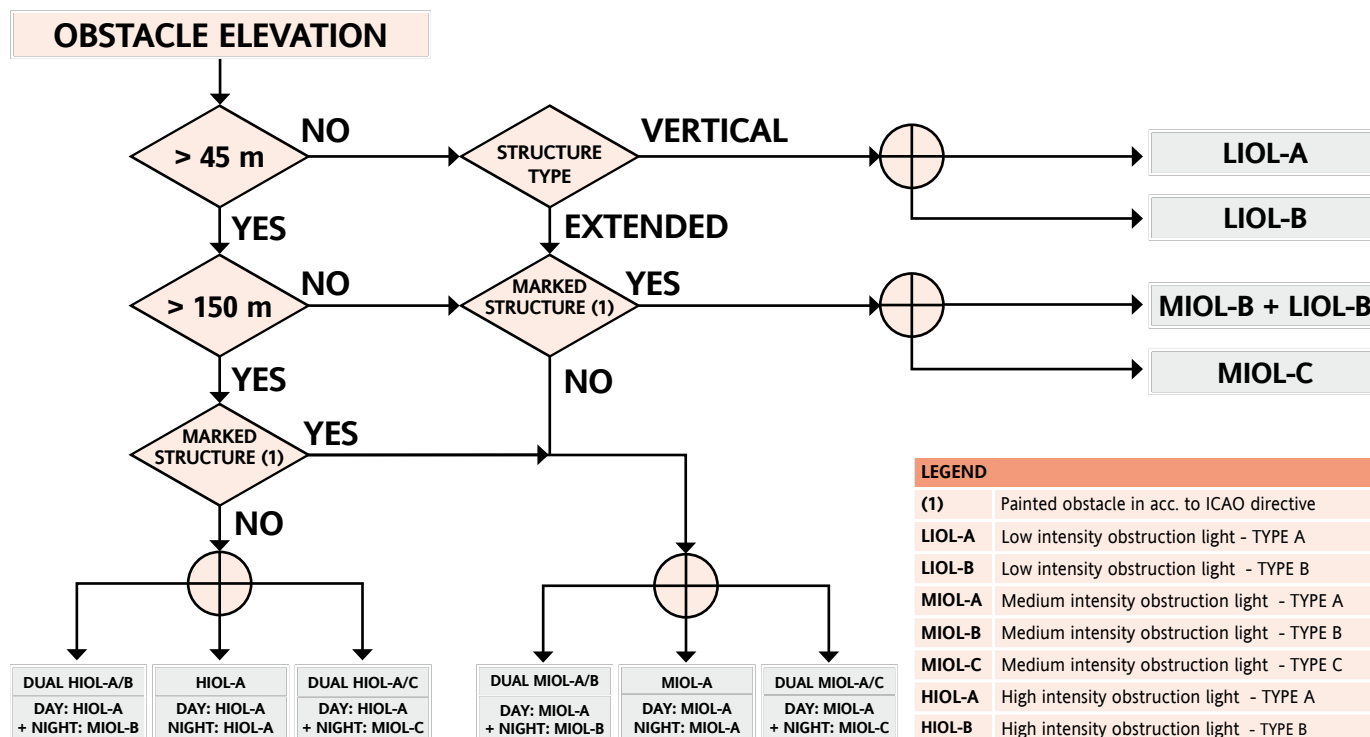
HIOL-A High Intensity Obstacle Lights Type-A, located on an obstacle, shall be flash simultaneously

(ICAO: Aerodromes - Annex 14 - Vol. 1 - Ch. 6.3.35)

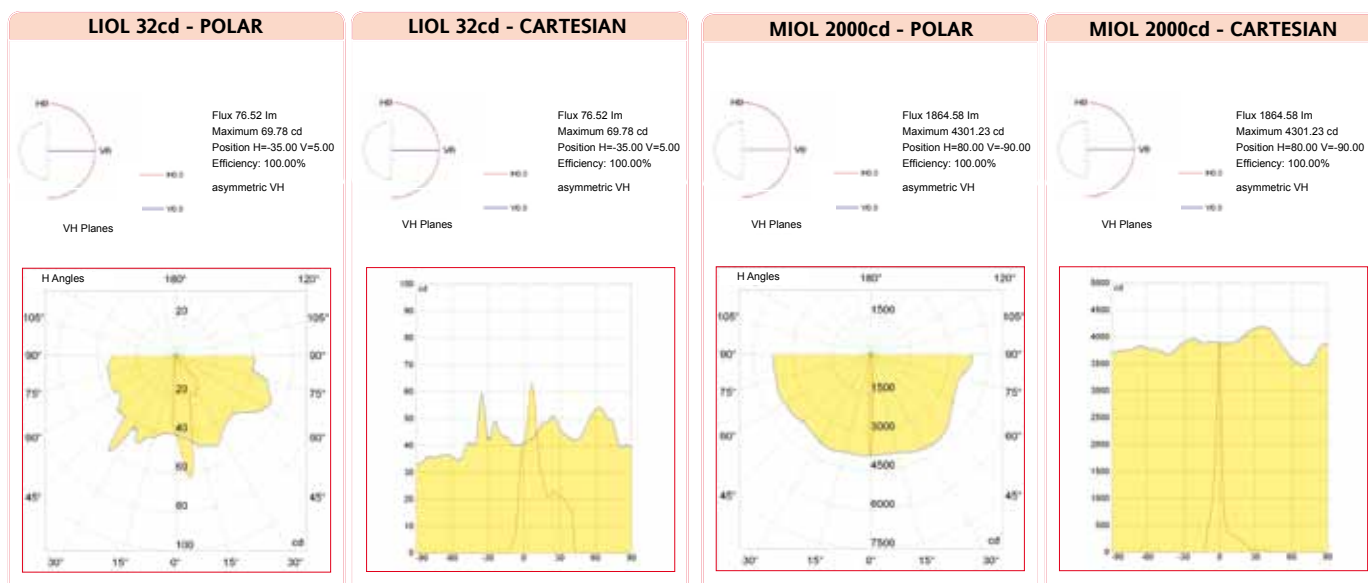
HIOL-B High Intensity Obstacle Lights Type-B, indicating the presence of tower supporting overhead wires, an others.. shall be flash sequentially

(ICAO: Aerodromes - Annex 14 - Vol. 1 - Ch. 6.3.36)

MIOL - LIOL Indicative diagram to obstruction light selection



MIOL - LIOL Polar diagrams – photometric data



MIOL - LIOL On request accessories

CODE	DESCRIPTION	MATERIAL
20302.0074	EVAC 100 / 101 SIZE STANDARD PROTECTION GUARD	GALVANIZED STEEL
20302.0077	EVAC 500 / 501 SIZE STANDARD PROTECTION GUARD	GALVANIZED STEEL
20302.0037	EVAC 100 / 101 SIZE STAINLESS STEEL PROTECTION GUARD	STAINLESS STEEL
20302.0040	EVAC 500 / 501 SIZE STAINLESS STEEL PROTECTION GUARD	STAINLESS STEEL
	CONTROL PANEL WITH SIMULTANEOUS OR CATENARY MULTILIGHT FLASHING SYSTEM	ALUMINIUM / PAINTED STEEL

REMARK: Due to the development of the national and international specifications and of the technology, the above technical characteristics showed on this bulletin can be considered as binding on our confirmation only.