



**SICE LS-XXNM-30X-S**  
**SICE MULTIPURPOSE 30 LED LANTERN FOR SAFE AREA**  
**(RANGE UP TO 12 NM at 0.74T)**

**GENERAL**

**SICE LS-XXNM-30X-S** is a multi-LED marine lantern, equipped with 30 LEDs and 30 internal Fresnel lenses, one dedicate lens for each LED. The LEDs are mounted on two overlapped tiers, each equipped with 15 LEDs. This lantern assures an excellent vertical and horizontal light distribution. The photometric data have been tested by Italian Institute in compliance with following last edition of IALA Recommendations: IALA E200-1; IALA E200-2; IALA E200-3; IALA E-200-4. The model is defined in compliance with the required application, as for following example:

- LS-10NM-30W-S: 10NM range, Main White flashing light for fixed structure (safe area)
- LS-5NM-30R-S: 5NM range, Subsidiary Red flashing light for fixed structure (safe area)
- LS-5NM-30Y-S: 5NM, Yellow flashing light for Wind farms fixed structures (safe area)

**TYPICAL APPLICATIONS**

**SICE LS-XXNM-30-S** is ideal for marking on / off-shore temporary or fixed structures as:

- Channels, Harbour entrances, Jetties, Tidal/Wave Generator Fields, Offshore Wind farm, Offshore Aquaculture, Offshore fish farms, Offshore Platforms, etc.

**LONG SERVICE LIFE WITHOUT MAINTENANCE**

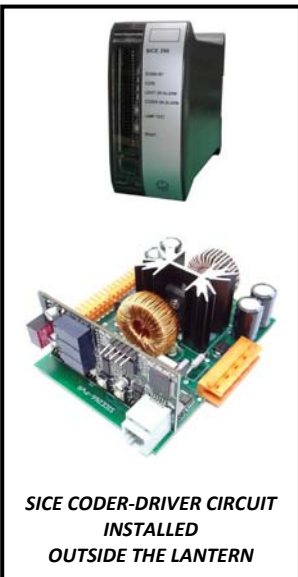
The construction of **SICE LS-XXNM-30X-(S)** is very rugged and this lantern is sealed for life, no maintenance is required during total life time, that is expected for 40 years at least. Only the periodic cleaning of the external glass cover is suggested. Inside this lantern only the LED tiers and its dedicate surge protections are installed, no other devices and no electronic card are installed, the photocell and coder driver-circuit are placed externally in a dedicate control panel or junction box. The **SICE** programmable coder-driver circuit is able to feed the LED tiers at "constant controlled current". So for all the above reasons, the reliability of this equipment is very high.

**OPTION FOR "MAIN & RESERVE LINES" CONFIGURATION**

When required, with the aim of increasing reliability even more, the **SICE LS-XXNM-30X-(S)** lantern can be supplied with the LED tiers connected to two separated lines that are powered through two separated coder-driver circuits, one dedicate driver for each line that is composed of 15 LEDs. During normal working phase, when all devices are correctly working, both driver circuits are activated and all 30 LEDs are lit. In this phase the LEDs are feed at very low current in order to reduce the stress and increase the lantern lifespan. Instead, when a failure occurs, at one LED line or at one driver circuit, the remaining driver circuit increases automatically the working current of the led line that is still working and restores the lumen output in compliance with the IALA Recommendations. So, in this configuration, the failure of one line is not critical because the working mode of lantern remains still compliant. During this phase, when one line is failed, the lantern consumption increases by 15% approx. and a remote control of failure is provided by the driver-coder circuit. This option can be used in the navaid systems where Main & Secondary Lights are required and is compliant with IALA Recommendation. Using this LS-XXNM-30X-S lantern, Main & Secondary Lights are placed in the same lighting fixture for an easy installation.

**SICE CODER-DRIVER CIRCUIT INFORMATION**

The **SICE** coder-driver circuit is complete with internal high efficiency DC / DC converter. It is powered at 24Vdc by the voltage of a battery and, in addition to generating the required flashing code, it supplies the LED array with controlled constant current. This circuit, that is completely programmable for all flashing codes required by IALA, also monitors the operation of the LEDs and provides the status (ON / OFF) and alarm (OK / FAILURE) signals. One alarm signal is provided for the failure of the LEDs and one for the failure of the coder-driver circuit. Furthermore, the circuit is also capable of managing the operation of the photocell sensor in order to activate / deactivate the lantern according to the conditions of visibility and is complete with a 2-wire Modbus RTU RS485 communication system. This circuit is made by **SICE**, for engineering, manufacture and testing and is very reliable assuring long time life without damage. The MTBF is higher than 10 years of working, already tested in the systems installed by **SICE** in several areas of the world.



**SICE CODER-DRIVER CIRCUIT  
 INSTALLED  
 OUTSIDE THE LANTERN**

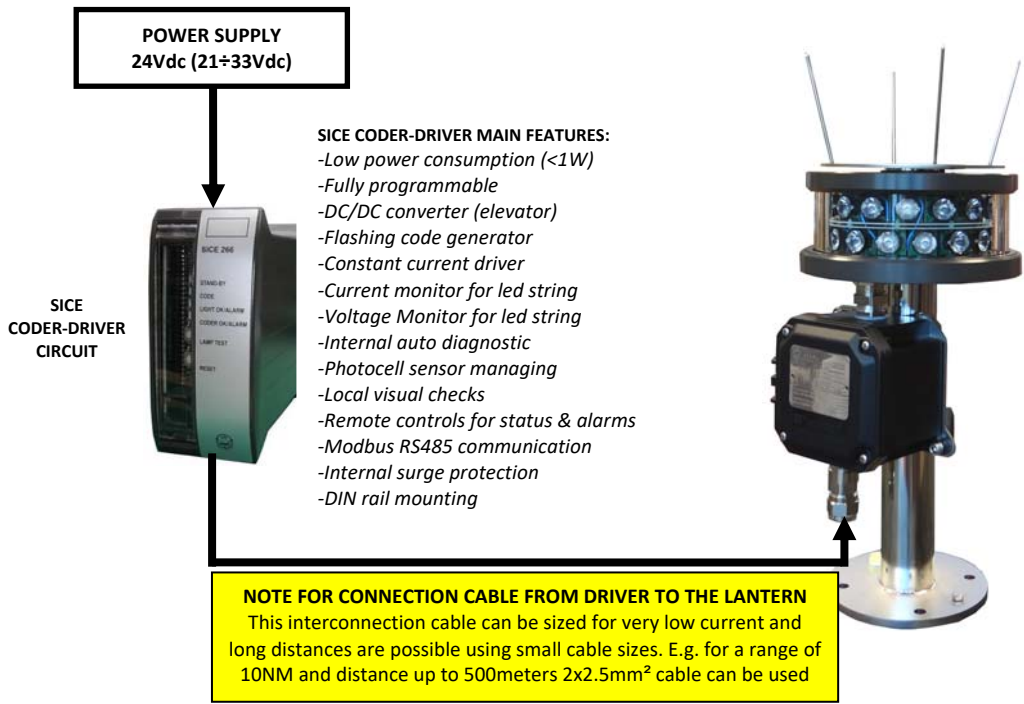


**SICE LS-XXNM-30X-S**  
**SICE MULTIPURPOSE 30 LED LANTERN FOR SAFE AREA**  
**(RANGE UP TO 12 NM at 0.74T)**

**MAIN FEATURES:**

-Input voltage of SICE Coder-Driver Circuit	:	24Vdc (acceptable range from 21 to 33Vdc) (other voltage on request)
-Lantern working voltage	:	From 63Vdc to 85Vdc typical (depend on led colors)
-Power consumption	:	Varies by configuration (see performance table)
-Visibility range	:	Varies by configuration (see performance table)
-Vertical divergence	:	+/- 4 degrees with luminous intensity exceeding 50 %
-Vertical divergence	:	+/- 9 degrees with luminous intensity exceeding 10 %
-Horizontal divergence	:	360 degrees
-Housing material	:	Marine Grade Aluminun with anodic hard oxidation (compliant with UNI 7796)
-Pole, bracket & anti-bird material	:	AISI 316L stainless steel, not painted
-Cover cylinder material	:	Borosilicate Glass
-Cover cylinder external diameter	:	180mm
-Cover cylinder thickness	:	9mm
-LED manufacturer	:	OSRAM
-LED quantity	:	30
-LED Fresnel lens material	:	POLYCARBONATE (internal led lens)
-Connection junction box material	:	GRP
-Lantern mechanical protection degree	:	IP66
-Junction box mechanical protection degree	:	IP66
-Operation temperature range	:	From -40°C to +55°C
-Internal temperature design	:	+75°C (at max power and with air temperature of +55°C)
-Connection terminals	:	From 0.5 to 4mm <sup>2</sup> (screw terminals)
-Signal light dimensions	:	205mm (base diameter) x 572mm (height), including anti-winged system
-Signal light weight	:	8kg (including pole & junction box)
-Mounting	:	4-holes mounting $\phi$ 10.5mm
-Fixing bolts	:	M8x40, A4 material

**TYPICAL INTERCONNECTION DIAGRAM**





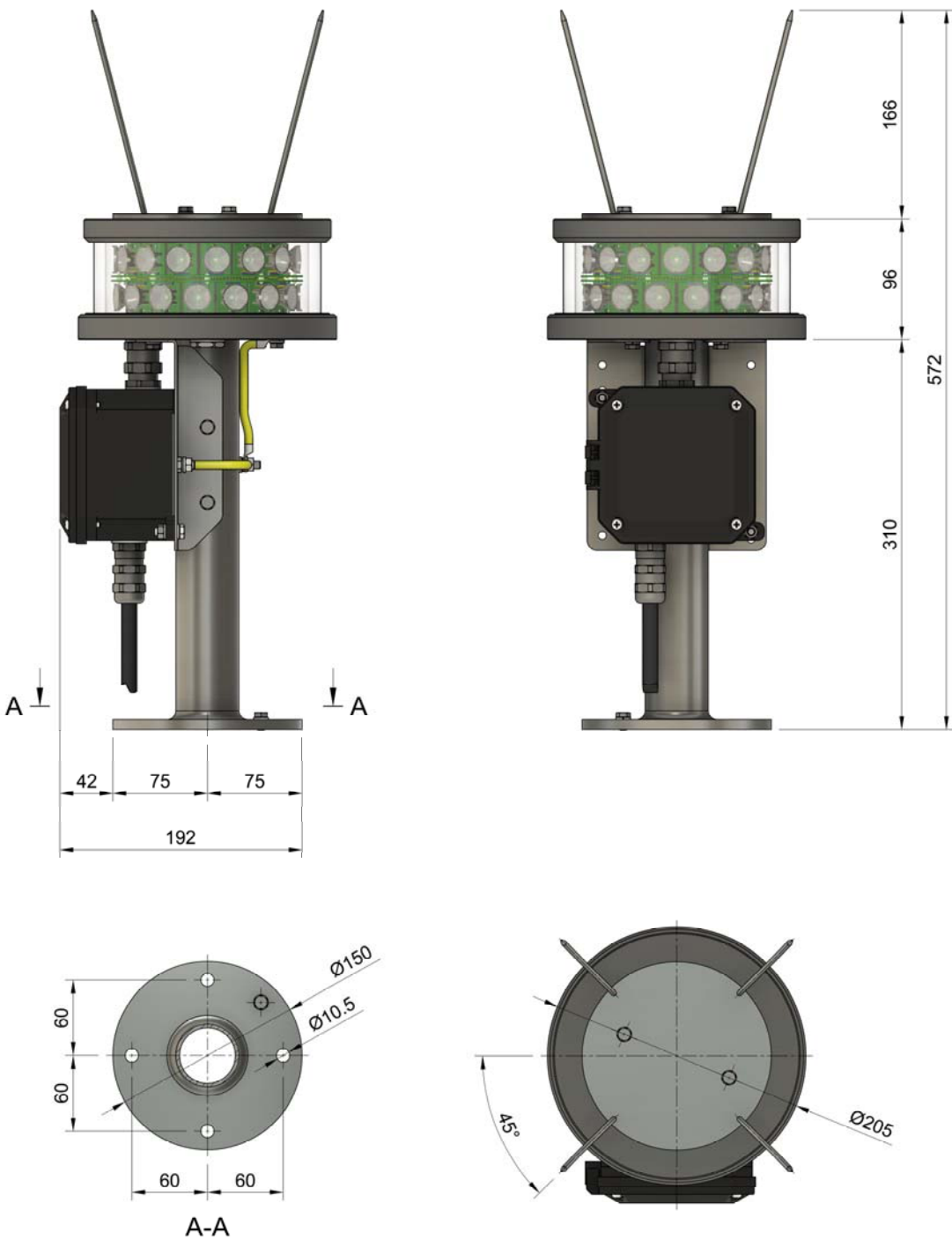
**SICE LS-XXNM-30X-S**  
**SICE MULTIPURPOSE 30 LED LANTERN FOR SAFE AREA**  
**(RANGE UP TO 12 NM at 0.74T)**

<b>30 LED LANTERN PERFORMANCE TABLE (MEASURED AT STEADY LIGHT)</b>			
<b>White Lantern</b>	<b>Red Lantern</b>	<b>Yellow Lantern</b>	<b>Notes</b>
Working voltage range: From 81 to 96Vdc (85V approx. typical)	Working voltage range: From 57 to 75Vdc (63V approx. typical)	Typical working voltage: From 60 to 75Vdc (66V approx. typical)	Working voltage changes at different driving current values and for different production stocks
446cd @ 4W (7.5W including driver losses) Applicable for steady light & flashing mode	220cd @ 3W (6W including driver losses) Applicable for steady light & flashing mode	238cd @ 3W (6W including driver losses) Applicable steady light & flashing mode	Driving current 0.05A
689cd @ 6W (10.5W including driver losses) Available steady light & flashing mode	330cd @ 4.2W (7.5W including driver losses) Available steady light & flashing mode	363cd @ 4.2W (7.5W including driver losses) Available steady light & flashing mode	Driving current 0.075A
910cd @ 8.4W (13W including driver losses) Available steady light & flashing mode	433cd @ 6W (9.5W including driver losses) Applicable for steady light & flashing mode	476cd @ 6W (9.5W including driver losses) Applicable for flashing mode only (Duty-Cycle: 80% max ON time)	Driving current 0.1A
1753cd @ 17W (23W including driver losses) Applicable for flashing mode only (Duty-Cycle: 80% max ON time)	851cd @ 12W (16W including driver losses) Applicable for flashing mode only (Duty-Cycle: 80% max ON time)	936cd @ 12W (16W including driver losses) Applicable for flashing mode only (Duty-Cycle: 40% max ON time)	Driving current 0.2A
2500cd @ 26W (33W including driver losses) Applicable for flashing mode only (Duty-Cycle: 50% max ON time)	1247cd @ 18.5W (24W including driver losses) Applicable for flashing mode only (Duty-Cycle: 50% max ON time)	1371cd @ 18.5W (24W including driver losses) Applicable for flashing mode only (Duty-Cycle: 25% max ON time)	Driving current 0.3A
3209cd @ 35W (44W including driver losses) Applicable for flashing mode only (Duty-Cycle: 40% max ON time)	1609cd @ 25.5W (32W including driver losses) Applicable for flashing mode only (Duty-Cycle: 35% max ON time)	1770cd @ 25.5W (32W including driver losses) Applicable for flashing mode only (Duty-Cycle: 18% max ON time)	Driving current 0.4A
3879cd @ 44W (55W including driver losses) Applicable for flashing mode only (Duty-Cycle: 30% max ON time)	1909cd @ 32.5W (41W including driver losses) Applicable for flashing mode only (Duty-Cycle: 30% max ON time)	Not Applicable for yellow lantern	Driving current 0.5A
4489cd @ 53W (64.5W including driver losses) Applicable for flashing mode only (Duty-Cycle: 25% max ON time)	2226cd @ 40W (49W including driver losses) Applicable for flashing mode only (Duty-Cycle: 25% max ON time)	Not Applicable for yellow lantern	Driving current 0.6A
5066cd @ 63W (77W including driver losses) Applicable for flashing mode only (Duty-Cycle: 20% max ON time)	2520cd @ 48W (59W including driver losses) Applicable for flashing mode only (Duty-Cycle: 20% max ON time)	Not Applicable for yellow lantern	Driving current 0.7A
5500cd @ 72W (88W including driver losses) Applicable for flashing mode only (Duty-Cycle: 18% max ON time)	2676cd @ 56W (68W including driver losses) Applicable for flashing mode only (Duty-Cycle: 16% max ON time)	Not Applicable for yellow lantern	Driving current 0.8A



**SICE LS-XXNM-30X-S**  
**SICE MULTIPURPOSE 30 LED LANTERN FOR SAFE AREA**  
**(RANGE UP TO 12 NM at 0.74T)**

**LANTERN DIMENSIONAL DRAWING**



*Document can be subjected to modifications, without prior notice*