

MADE IN ITALY



NAVY SHIPS LED LIGHT FIXTURES INNOVATIVE AND FUTURE PROOF



naval.atiled.it



NAVY SHIPS LED LIGHT FIXTURES INNOVATIVE AND FUTURE PROOF

Fabas Luce is solid and reliable family owned company with 40 years of experience.

We design and produce in Italy a full range of technologically advanced led fixtures and flood lights, carefully built for naval use.

Our top quality led lights combine very high performances, compact dimensions, reduced weight and are extremely robust. Our ultimate led technologies are continuously updated to assure high luminous flux and low power consumption for effective energy saving.

The led light fixtures we produce according to the international standards take in great account the "human factor".

The appropriate light level and distribution are important safety factors for navy crew that work and rest in artificial light illuminated ships.

Best view lower the fatigue, helping crews on usual tasks and improve and faster the responses on critical situations.

Our complete and wide led fixtures range for every navy ship spaces and illumination needs.

- multifunctional general purpose: TVE models that include TVE-NVG compatible red or green led lights
- flood lights models :TON, TOR, white or colored led light
- EX hazardous areas and explosive atmosphere models GEX, PEX that include PEX-NVG compatible red or green led lights
- recessed led fixtures, reading and berth lights with integrated on/off touch dimmable control, table lights for living quarters, cabins, mess rooms
- hospital operating room model Keros led dark light IP65
- inox model Galcor for galley and cold room USPHS compliant, and for NBC decontamination station
- globe led (EX type available) pendant fixtures, lights colors: white, red, green, blue, amber
- emergency battle lantern model LEM-PRO fully microprocessor driven, two leds wide or narrow beam, high or low intensity light, that in case of blackout last for 10 hours. Portable and floating IP67 with rechargeable batteries.

Naval vessels services:

- accurate lighting design and 3D simulation
- lights controls and dimming solutions
- custom fixtures design
- lifecycle spare part service: our fixtures are almost maintenance free but in case of need they can be quickly disassembled and every components is available and easily replaceable



OUR EXPERIENCE ON ITALIAN NAVY U212 SUBMARINES

Our first led light fixture model TVE installed in Fuel cell Scirè submarines in November 2012
The poster in the picture celebrate in November 2015 the totalisation of 25.000 hours of continuous running
Today the total hours are more than 50.000 and the led board is still the same.



ITALIAN NAVY C6259 LSS VULCANO TVE LED FIXTURES INSTALLED ON BOARD



TVE

LED LIGHT FIXTURE

SOME OF THE MANY DIFFERENT MODELS



TVE and its different types of controls remote or on the fixture: dimmer, switch, light colors selector.



TVE-SMG

TVE multifunctional general purpose led light fixture is available in different models Each configurations is designed to create different kind of lights for every ship areas TVE for weather deck is equipped with anti-condensation valve for air recirculation.



left TVE with dimmer control

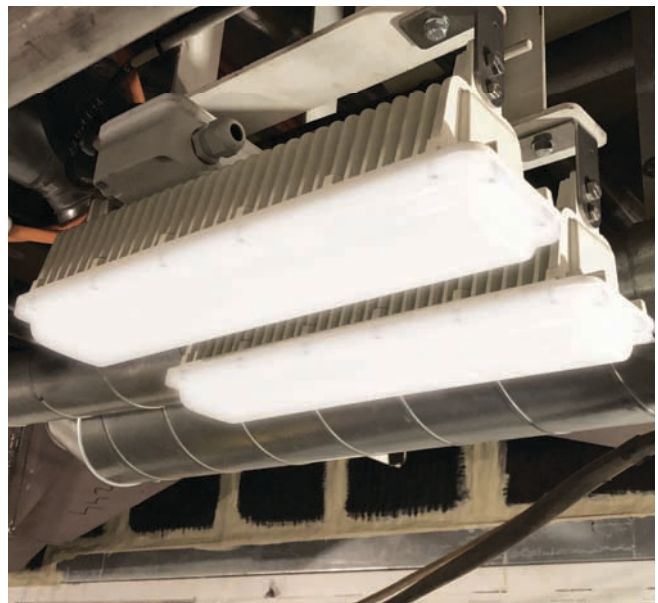
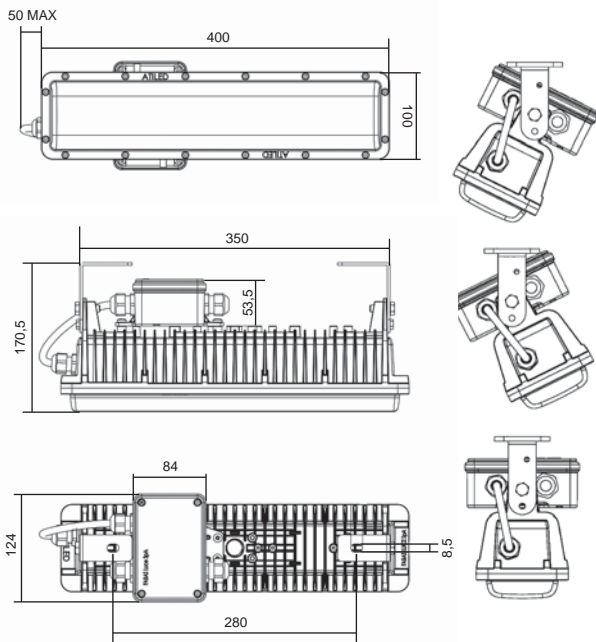


on the right white + red independent led lights in the same fixtures



Fabas Luce model	technical features: IP66, temperature range -25°C / +55°C, weight 2,5 Kg Maintenance free: duration L70 B10 50.000 hours at ambient tempertaure +35°C
TVE	3400 lumen natural white 4000K or warm white 3000K, 22 W.
TVE-EM	white light and another indipendent white light in the same fixture, one power supply for each light.
TVE-DIM / DALI	dimnable with potentiometer mounted on the fxture / dimmable with DALI device for broadcast operations
TVE-CR / CRI	white light and red (or blue) light in the same fixture. one power supply for each color, color selection: with remote switch or by rotative switch mounted on the fixture
TVE-R / B	red or blu led light
TVE-SMG	designed for submarines Power connection with MIL-STD connectors, easy and fast disassembly.
TVE-NVG	NVG compatible red led light, dimmable
TGL	5600 lumen natural white 4000K, 35 W general purpose

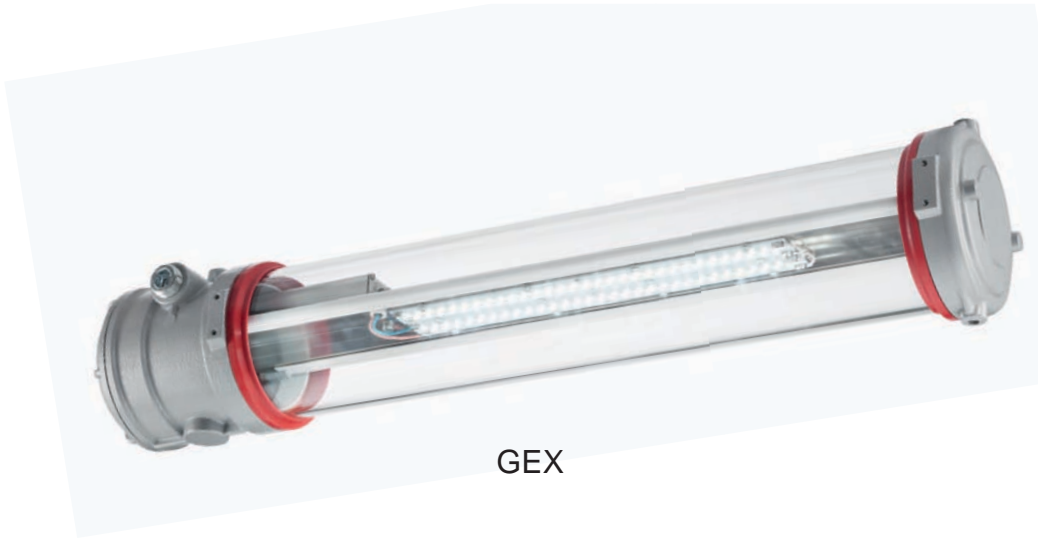
Diffuser high thickness opal polycarbonate
Orientable housing made of marine grade copper free amagnetic aluminium, stainless steel brackets.
Available colors white RAL9010, grey RAL7040, blu RAL5011, others on request.
Power supply inside the fixture body input 110 / 240 VAC 50 / 60 Hz (optional input 24 VDC)
On request special TVE models MIL-STD compliant: EMI, shock, vibration, magnetic signature.



GEX and PEX

LED FIXTURES

FOR EX HAZARDOUS AREAS
AND EXPLOSIVE ATMOSPHERE



GEX



PEX



Fabas Luce models	EX hazardous area explosion proof led fixtures technical features: IP66, temperature range -25°C / +55°C	
PEX	3000 lumen natural white 4000K, 23 W	Execution: II 2 G Ex d IIB+H2 T5 Gb II 2 D Ex tb IIIC T100°C Db
PEX-EM	white light and another independent white light in the same fixture, one power supply for each light.	
PEX-CR	white light and red (or blue) light in the same fixture, one power supply for each color, color selection whit remote switch.	
PEX-R / DIM	only red light, dimmable with potentiometer placed outside EX area	
PEX-NVG	NVG compatible red led light, dimmable	
GEX	5600 lumen natural white 4000K, 35 W. Execution: II 2 G Ex d IIC T6 GbII 2 D Ex tb IIIC T85°C Db	
<p>CDiffuser high thickness borosilicate glass Housing made of marine grade copper free aluminium. Available colors white RAL9010, grey RAL7040, others on request.</p>		



Italian Navy c6259 LSS Vulcano -PEX explosion proof led fixtures installed on board



TOR, TON

LED FLOOD LIGHTS WHITE OR COLORED LIGHT

GEST

WEATHERDECK FIXTURE SPECIALDESIGN
FOR STEALTH NAVY SHIP



TOR



TON



GEST

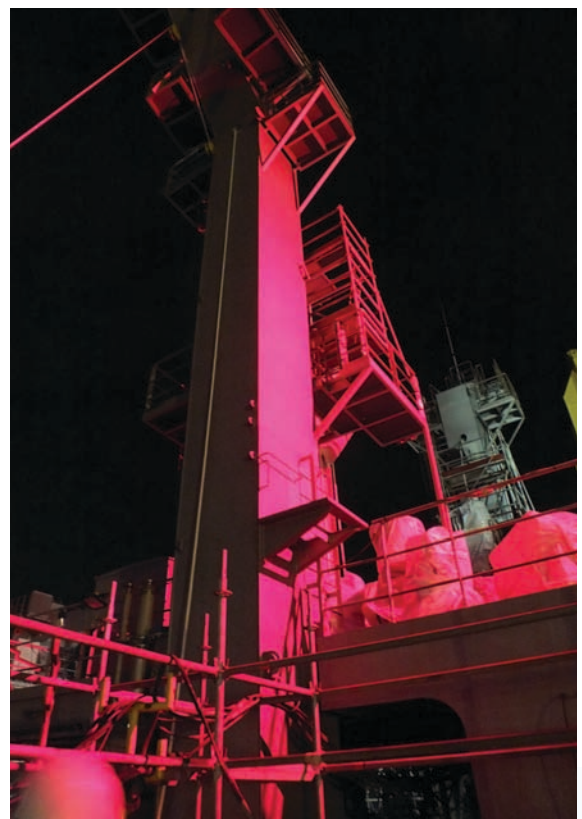
led weatherdeck fixture
special design for stealth navy ship



Fabas Luce model	led flood lights technical features: IP66, narrow or wide beam, temperature range -25°C / +55°C
TOR	6500 lumen natural white 4000K, 50W
TON 105	13.800 lumen natural white 4000K, 105W
TON 160	19.400 lumen natural white 4000K, 160W
PRED / PBLU	red or blue light
<p>Orientable housing made of marine grade copper free aluminium, stainless steel brackets. Available colors white RAL9010, grey RAL7040, others on request.</p>	



Italian Navy c6259 LSS Vulcano
 TON 160W led flood white light during test



Italian Navy c6259 LSS Vulcano
 TON led flood RED light during test



GLOBE

LED (EX TYPE AVAILABLE) PENDANT FIXTURES
LIGHTS COLORS: WHITE, RED, GREEN, BLUE, AMBER



LEM PRO

EMERGENCY LED BATTLE LANTERN

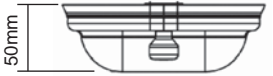


Fully microprocessor driven
Two leds wide or narrow beam, high or low intensity light, that in case of blackout last for 10 hours.
Portable and floating IP67 with rechargeable batteries



GALCOR

GALLEY, COLD ROOM, NBC DECONTAMINATION AREA,
INOX AISI 316 LED LIGHT FIXTURE



very low height 50 mm only

Luminous flux	3500 lumen
Light color	natural white 4000K
Diffuser opal polycarbonate beam	180°
Power consumption	29W
Color Rendering Index	CRI 85
Power supply installed inside fixture inox Aisi 316 housing	90/305 V AC 50/60 Hz – 127/300 V DC
Power factor	>0,9
Insulation	Class 1
Protection	IP67
Working ambient temperatures	-35 / +45° C
Weight	1,8 Kg
System lifetime hours	duration L70 B10 50.000Technical

LED FIXTURES FOR LIVING AREAS

BERTH ot reading table ed lights with integrated on/off touch dimmable control



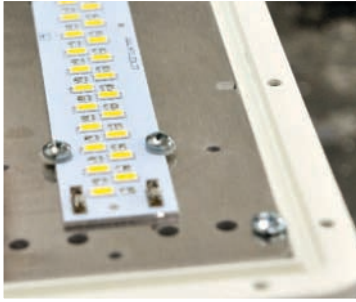
PSAR2 recessed IP44 for offices, wardoom, messroom



KEROS led dark light recessed IP65 for hospital operating room



Test performed and passed	International Standards applied for tests
EMC Electromagnetic Compatibility	IEC 60533 Electrical and electronic installations in ships - Electromagnetic compatibility
EMC Electromagnetic Compatibility	EN 55015 Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment EN 61547 Equipment for general lighting purposes - EMC immunity requirements EN 61000-3-2 Electromagnetic compatibility (EMC) - Part 3-2: Limits - Limits for harmonic current emissions EN 61000-3-3 Electromagnetic compatibility (EMC) - Part 3-3: Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems
Insulation, High voltage, Dry heat, Damp heat, Cold, Vibration, Shock	Electrical installations in ships. Part 306: Equipment - Luminaires and accessories
Various safety tests: Endurance Thermal (Temperature), Wiring, Electric Insulation, Connections, Glow wire, etc.	EN 60598-2-1 Luminaires Part 2: Particular requirements; Section 1: Fixed general purpose luminaires
Electric cable from connection box to fixture gland	refer to electric cable manufacturer technical data sheet
IP code degree of protection	EN 60529:1991 + A1:2000 + A2:2013 Degrees of protection provided by enclosures (IP code). Amendment A1 issued February 2000. Amendment A2 issued October 2013
Salt fog	MIL-STD-810D Environmental Engineering Considerations and Laboratory Tests - Test Method 509.5 Salt Fog
Led light fixture photometric data	UNI EN 13032 Measurement and presentation of photometric data of lamps and luminaires UNI 11356 Protocol for the measurement of LED luminaires photometric data
Led light fixture photobiological safety	IEC TR 62778:2014 Application of IEC 62471 for the assessment of blue light hazard to light sources and luminaires
Opal polycarbonate led light fixture diffuser test to check UV and IR resistance under temperature, humidity and wetting	ISO 4892-2:2013 Plastics - Methods of exposure to laboratory light sources - Part 2: Xenon-arc lamps test chamber reproduces the entire spectrum of sunlight including ultraviolet UV visible light and infrared IR. This standard was last reviewed and confirmed in 2018. It specifies methods for exposing specimens to xenon-arc light in the presence of moisture to reproduce the weathering effects (temperature, humidity and wetting) that occur when materials are exposed in actual end-use environments to daylight.
Shock testing	MIL-S-901D - work in progress



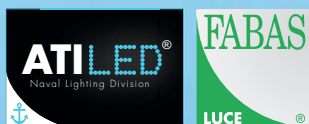
Fabas Luce carefully manage all the different technologies that are necessary to produce reliable led light fixtures. According to the type of light needed we select top quality leds and design the proper electronic board. We develop compact fixture housing with marine grade aluminum or stainless steel that assure the right heat dissipation and long lasting in harsh environment. The light diffusers and the optics are designed to create the best efficient view.

References

Anno	Armatore	nome Nave	numero navi	tipologia	numero costruzione	Costruttore / esecutore installazione a bordo FABAS	LUCE spa referenze lampade LED fornite
2019	Marina Militare Italiana	S 526 Todaro	1	sommersibile U212-		Fincantieri	nr 104 lampade led TVE per sostituzione plafoniere con lampadine
2019	Marina Militare Qatar	-	2	OPV offshore Patrol Vessel	c6290	Fincantieri	tutte le luci nave
2019	Marina Militare Qatar	-	4	Corvetta multiruolo	c6291	Fincantieri	tutte le luci nave
2018/19	Marina Militare Italiana	UNPAV	2	unità polifunzionale ad altissima velocità	-	Intermarine	tutte le luci nave
2018	Marina Militare Algeria	-	1	cacciamine	-		oltre 300 corpi illuminanti di varie tipologie di cui circa 200 mod. TVE
2018	Marina Militare Italiana	FREMM	10	fregate	-	Molteni	avvio sostituzione su tutte le unità dei faretto luce blu notturna
2018	Marina Militare Italiana	A 5309 Anteo	1	appoggio attività subacquee, soccorso, salvataggio	-	Socrem	campana Mc Cann
2018	Marina Militare Italiana	Trieste	1	LHD unità anfibia multiruolo	6260	Fincantieri	corpi luminosi vario tipo per tutte le esigenze di bordo: aree tecniche interne ed esterne, di vita, cucine, ospedale, armature EX antideflagranti, globi, proiettori luce bianca
2018	Marina Militare Italiana	-	7(+3 in opzione)	PPA Pattugliatore Polivalente d'Altura	c6261	Fincantieri	corpi luminosi vario tipo per tutte le esigenze di bordo: aree tecniche interne ed esterne, di vita, cucine, ospedale, armature EX antideflagranti, globi, proiettori luce bianca
2017	Marina Militare Italiana	FREMM F597, 598, 599	10	fregate	c6248, 6276, 6277	Fincantieri	da c6248 in avanti tutte le luci esterne profilo nave e contestuale sostituzione di quelle malfunzionanti sulle precedenti FREMM
2017	Marina Militare Italiana	Vulcano	1	LSS unità supporto logistico	c6259	Fincantieri	oltre 3.000 corpi luminosi vario tipo: aree tecniche interne ed esterne, di vita, cucine, ospedale, armature EX antideflagranti, globi, proiettori luce bianca e luce rossa e blu per RAS
2016	Marina Militare Italiana	FREMM	10	fregate		Fincantieri	in ogni FREMM "sea cabin" equipaggiate TVE con luce bianca e luce led rosso bruno integrate nello stesso corpo lampada
2016	Marina Militare Finlandia	-	3	cacciamine		Intermarine	sostituzione luci esterne prua
2016	Marina Militare Venezuela	-	1	U 209 sommersibile		Navaltech Italia	rifacimento completo illuminazione
2015	Marina Militare Italiana	S 526 Todaro	1	sommersibile U212	-	Fincantieri	nr 10 lampade TVE, refit led cucina, tavolo carteggio
2015	Marina Militare Algeria		1	cacciamine		Intermarine	oltre 300 corpi illuminanti di varie tipologie di cui circa 200 mod. TVE
2015	Norwegian Polar Institute	Kronprins Haakon	1	rompighiaccio oceanografica		Fincantieri	armature EX antideflagranti
2015 2018	Marina Militare Italiana	Crotone, Numana, Alghero, Viareggio	4	Cacciamine		Sistemi Iperbarici	container camera iperbarica mod. TVE con luce bianca e rossa a funzionamento indipendente integrate nello stesso corpo lampada
2015	Marina Militare Italiana	San Marco	1	L 9893 LPD unità da trasporto anfibio	-	Comes	luci rosse e verdi per bacino allagabile
2015	RosRAO - Russia	Itarus	1	piattaforma galleggiante semisommersibile	-	Fincantieri	lampade portatili emergenza ad intervento automatico con batterie ricaricabili
2014	Marina Militare Italiana	Vespucci	1	nave scuola	-	Arsenale MMI La Spezia, Fincantieri	oltre 1.500 corpi illuminanti di varie tipologie di cui circa 600 mod. TVE per aree tecniche e di vita non controsfittate ed apparato motore, incluse LEM-PRO lampade portatili emergenza ad intervento automatico con batterie ricaricabili. Proiettori luce colorata e bianca per tricolore italiano ed illuminazione generale.
2014	Marina Militare Algeria	Kalaat Beni-Abbes	1	LPD unità anfibia e supporto logistico	c6235	Fincantieri	vari modelli per tutte le aree di vita
2013	Guardia Costiera Italiana	CP 409 Ingianni	1	motovedetta d'altura	-	Cimel Italiana	sostituzione lampade plancia, aree di vita ed alloggi
2012	Marina Militare Italiana	S 527 Scirè	1	sommersibile U 212		sperimentazione	fuel cell



Our wide range of led lights fixtures cover 95% of the all type of lights a navy ship may need, no matter if is a new build or modernization of existing vessel.



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