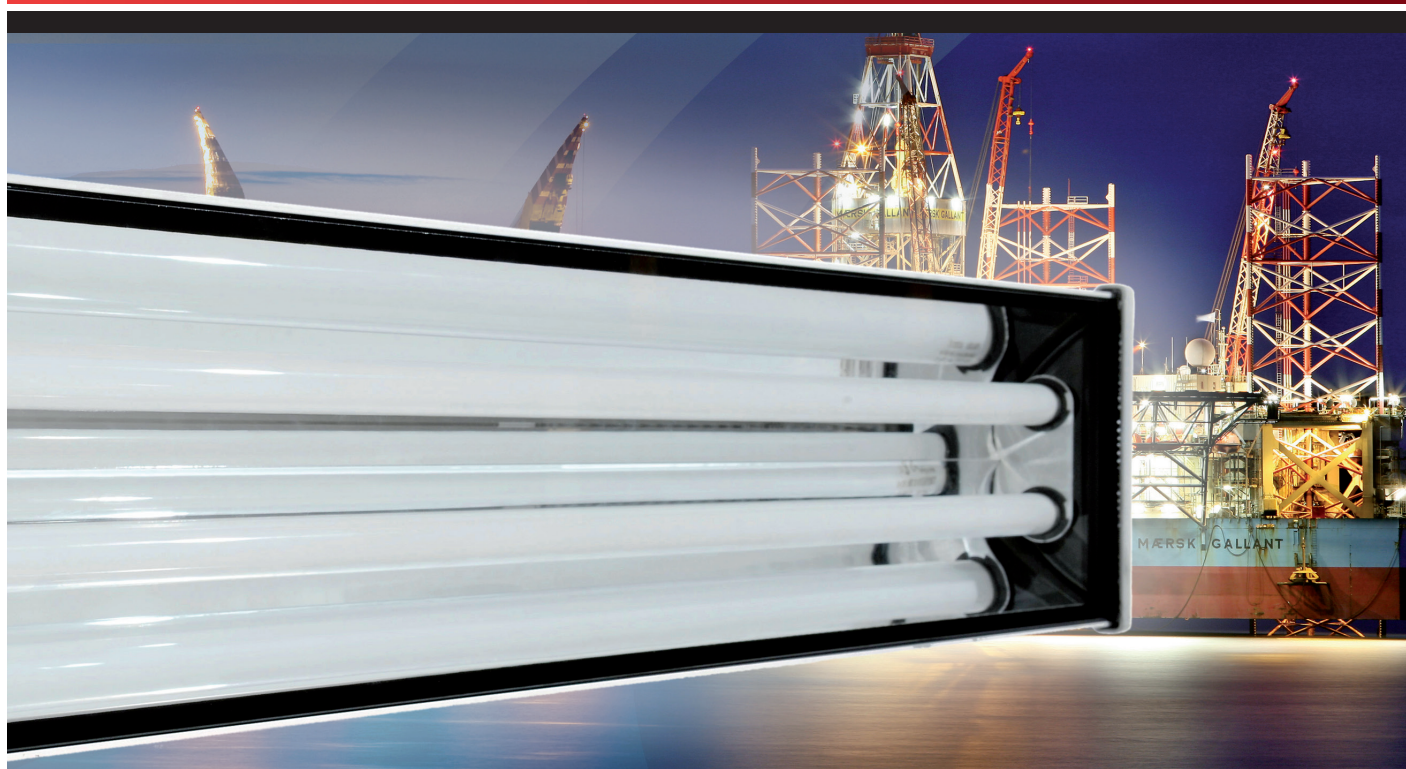


TNAML[®] zone 1/21

Maintenance Free Fluorescent Luminaire



Features:

- + 100% encapsulated, maintenance free design requiring only visual inspection to IEC/EN 60079-17
- + In accordance with ATEX regulations
- + 10 years operational warranty * assures favourable total cost of ownership
- + Easy and flexible installation
- + Fit & Forget
- + Seawater resistant anodized aluminium (in accordance with NORSOK 121)
- + Tempered glass, very high impact resistant, IK 20 (20 joules)
- + Fully recyclable, environmental friendly product
- + High light output efficiency (>80%) i.e. less luminaires required for same lighting level
- + Available with 2x18W / 2x36W / 2x58W lamps
- + Optional battery powered, 90/180 minutes functionality, battery functionality -20°C to +30°C
- + Emergency lighting by LED
- + Self-locking device for cable gland nuts
- + Self-cleaning glass
- + No condensation
- + **due to 100% sealed for life construction**
- + Safety wire connection
- + 100% Leakage test
- + Clean room recessed mounting system
- + HACCP approved for food applications
- + Black start for unmanned platforms

Characteristics:

+ Maintenance free (visual inspection only)

+ Sealed-for-life concept

+ Fit and forget

+ 10 years operational warranty*

+ 84.000 hours functionality*

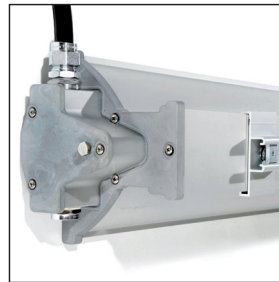
+ Patented design

+ **Vibration test by Thales (detailed report available on request)**

- Standard: IEC60721-2-3 Ed 1.0 and IEC68-2-6
- Frequency range: 1 - 150 Hz
- Amplitude: 5mm (1 to 10 Hz)
- Acceleration: 2 gn (10 to 150 Hz)
- Sweep rate: 1 octave per minute
 - sweep cycles: 10
 - directions: 3

+ **Vibration test by Sebert Trillingstechniek BV (detailed report available on request)**

- Standard: IEC60068-3-3 for Nuclear Generating Stations

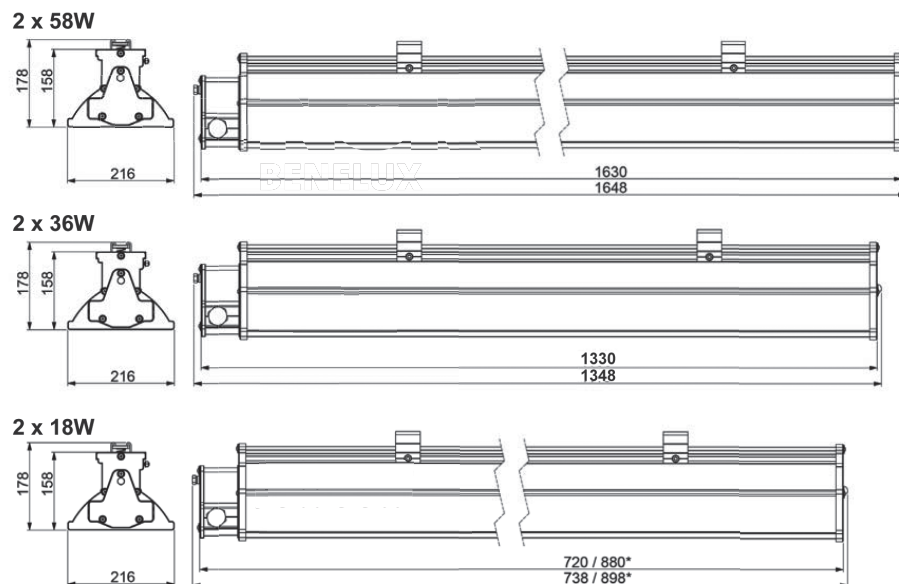


General specifications:

Certificate:	IECEx: Dek 11.0075 ATEX: DEKRA 11ATEX0133
Modes of protection:	Ex e mb, Ex tD A21
ATEX classification:	Group II Category 2 G D
Zones:	1, 2, 21, 22
Applied standards:	EN-IEC 60079-0, EN-IEC 60079-7, EN-IEC 60079-18, EN-IEC 60079-31 EN-IEC 62262, EN-IEC 60598-2, EN-IEC 60598-2-1, EN-IEC 60598-2-22 EN 55015, EN 61000-3-2, EN 61000-3-3
Ex code:	Gas II 2 G Ex e mb II T5/T6 Dust II 2 D Ex tD A21 IP68 T80°C/ 100°C
Inspection:	Visual inspection in accordance with EN/IEC 60079-17
HACCP:	Stated by DEKRA 06540-QUA/EX
Ingress protection:	IP 68 by attest DEKRA 211978700

Product specifications:

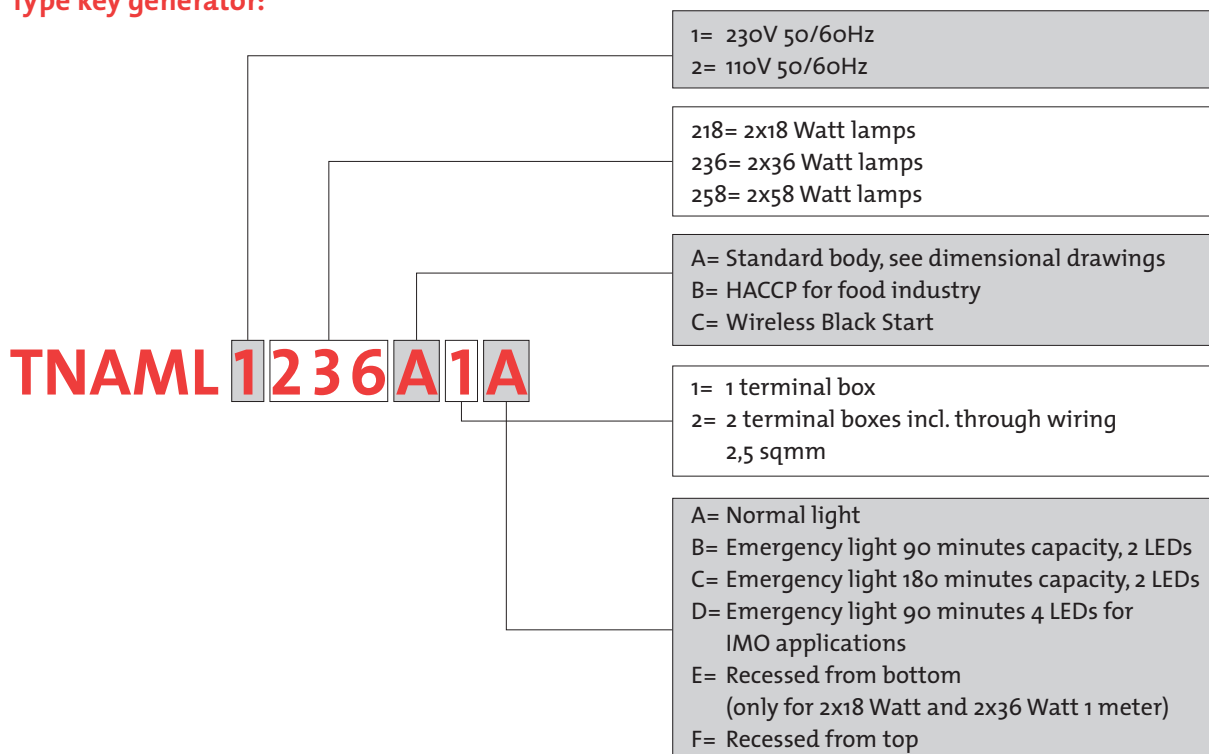
Housing:	Seawater resistant (NORSOK 121) anodized (25 micron) aluminium with tempered glass
Lamps:	Pre-mounted long life lamps, colour 4000K
Impact rating:	IK 10 (20 joules) to IEC 662262
Operational temperature range:	-20°C to +55°C for standard version, -20°C to +30°C for emergency version
Voltage:	220-264VAC 50/60Hz
Electrical connection:	0,5-6mm ² by spring terminals through integrated external junction box (sealed by resin after installation and test)
Entries:	2 x M25 cable gland entries. One plugged off.
Ballast:	Electronic with end of life protection, Pre-heated start
Mounting:	2 x brackets on guidance rail for flexible, easy and quick installation
Emergency batteries:	Disconnecting possibility during installation by "B" terminal
Battery life time:	300 cycles, automatic random test each 100 days



* Emergency light version



Type key generator:



Most common types:

Article code	Wattage	Voltage	Weight	Lumen
TNAML 1218A1A	2 x 18W	220-264VAC	7,1 kgs	2,600
TNAML 1236A1A	2 x 36W	220-264VAC	9.7 kgs	6,000
TNAML 1258A1A	2 x 58W	220-264VAC	12.4 kgs	10,400
TNAML 1218A1B	2 x 18W	220-264VAC	9.4 kgs	2,600
TNAML 1236A1B	2 x 36W	220-264VAC	11.3 kgs	6,000
TNAML 1258A1B	2 x 58W	220-264VAC	14,2 kgs	10,400

Type	Max. qty. of luminaires on a 16A/C-char. circuit. 30mA ELCB	Inrush current
2 x 18W	30	18A / 250µs
2 x 36W	30	18A / 250µs
2 x 58W	20	31A / 350µs

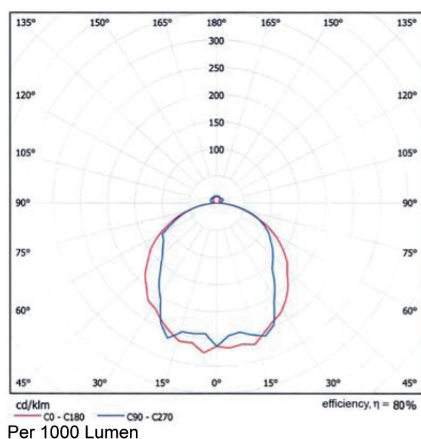
Total Cost of Owner ship

The benefits of installing TNAML® can be shown in a Total Cost of Ownership calculation. For this purpose we have created a software tool to calculate the lifetime cost savings based on input from the client.

Upon request:

Voltage:	110/120VAC, 50/60 Hz (only for 2x18W and 2x36W)
Lamps:	Colour 3000K or 6500K
Electrical connection:	By 6 meter permanent flying lead, braided
LED Emergency lighting:	180 minute back-up for 2x18W, 2x36W and 2x58W 4 LED's to meet IMO specifications
Mounting brackets:	Pole and ceiling mounting brackets
Glass:	For use in accordance with HACCP environment (food industry)
Frosted glass:	Avoiding glare for low mounted luminaires
HACCP:	For food industry
Safety wire:	For installation onto a fixing arrangement on the light fitting
Cable Gland Ex e:	Suitable rated cable glands can be supplied with the luminaire (separate package)
Black start Emergency light:	Wireless "Black start" function for manned/unmanned functionality
Recessed ceiling installation:	Frame for recessed installation in modular ceiling systems, painted steel or stainless steel
Wiring:	Through wiring by 2 junction boxes
Other area classifications:	Zone II, Ex nA, 3 GD (TNAML-nA...) or safe area industrial version (TNAML-I...)
Mounting brackets:	Pole and ceiling mounting brackets

Standard luminaire



Emergency luminaire

