



next generation led

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MARINE TL TOP PRO

Properties

- Lifespan L70 %: > 40.000 hours
- No Flickering- reduce eyestrain
- Energy savings + 70%
- Built in driver
- Uniform lighting without glare
- New technology MCPET inside
- Will not break when dropped
- Environment friendly : no mercury or toxic gasses
- Immediate start regardless of temperature or humidity
- Retro-fit = easy installation
- **EN60945 certified: Helps in meeting a requirement of the International Convention for Safety of Life at Sea (SOLAS), adopted by the International Maritime Organization (IMO), that the radio equipment defined in chapters III and IV, and the navigation equipment defined in chapter V of the Convention, be type-approved by administrations to conform with performance standards not inferior to those adopted by the IMO**
- **Vibration class B (anti-vibration)**
- **Anti-corrosion**
- Warranty: 3 years

Application

Marine applications: boats, offshore platforms, etc...



Retro-fit

165 lm/W

40.000 h

IP44

Specifications

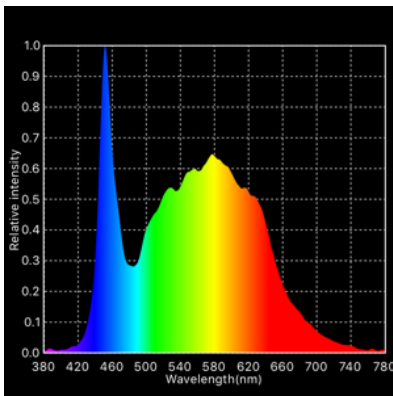
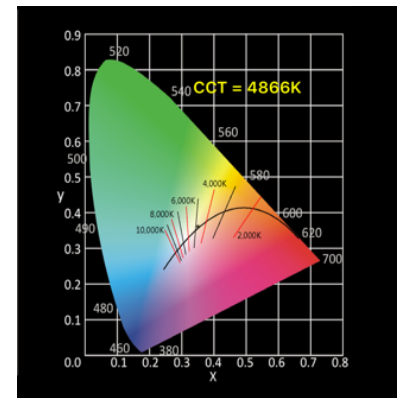
TL TOP PRO	60 CM	120 CM	150 CM
Power	6 W	15 W	21 W
Input voltage	220 ~240 V		
Diameter	26 mm		
Color temperature	3000 K / 4000 K / 5000 K		
Cover	Frosted cover		
Color rendering index	CRI>80		
Powerfactor (Pf)	> 0.9		
Beam angle	210 °		
Ambient Temperature	-25 ° C ~ +55 ° C		
Humidity	0% ~ 95%		
Luminous intensity	1500	2500	3500

Updated: July 2020



CIE 1931

The CIE color space, developed in 1931, is still used to define colors, and as a reference for other color spaces. The figure is a two-dimensional display of colors of the same intensity (brightness), which is based on observations of color measurements by people.

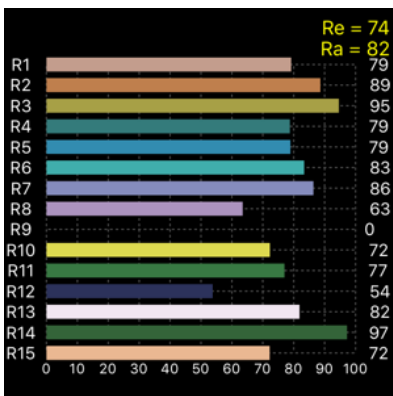
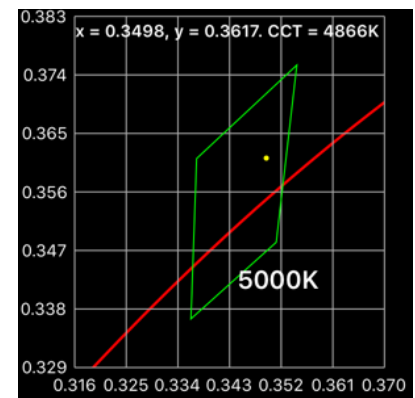


SPECTRUM

Isaac Newton used the Latin word spectrum to define the color series which arose when he dropped a bundle of sunlight through a glass prism. The color spectrum consists of the colors of the rainbow with the color sequence red-orange-yellow-green-blue-indigo-violet, which corresponds to bearish wave length (increasing frequency) of the light waves.

C78 377

ANSI C 78.377 is now the standard for color quality, as determined by the American National Standards Institute. ANSI recommends lamp manufacturers to stay within a 4-step ellipse. This means that manufacturers with a particular focus on the CIE diagram have a broad range of observable differences.



CRI HISTOGRAM

The color reproduction of a light source indicates whether the color of an object can be displayed true to nature. The graph shows whether we can accurately determine color, depending on the color rendering properties of the light source.

Ra = average of R1 to R8

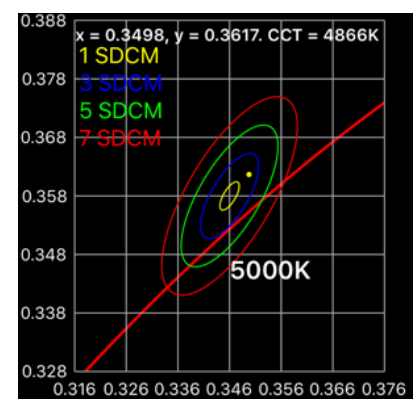
Re = average of R1 to R15

R9 = saturated red. Should be as high as possible.

SDCM

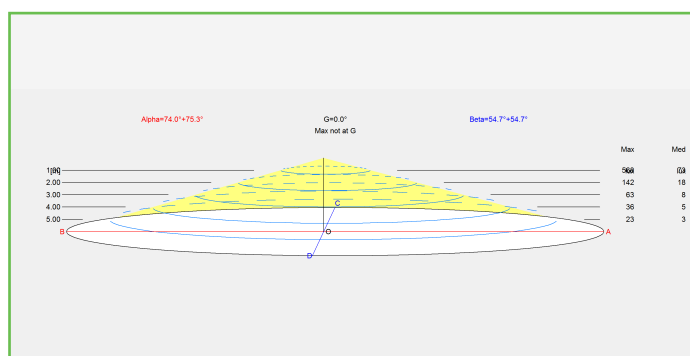
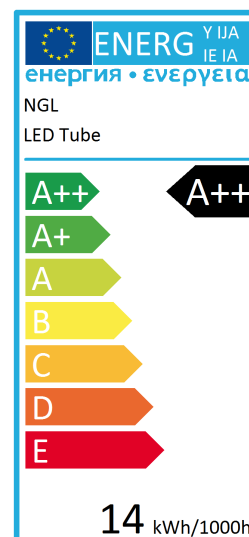
SDCM is an acronym which stands for Standard Deviation Colour Matching. SDCM has the same meaning as a "MacAdam ellipse". A 1-step MacAdam ellipse defines a zone in the CIE 1931 2 deg (xy) colour space within which the human eye cannot discern colour difference. Most LEDs are binned at the 4-7 step level, in other words you certainly can see colour differences in LEDs that are ostensibly the same colour.

SDCM	CCT @ 3000K	$\Delta U V$
1x	±30K	±0.0007
2x	±60K	±0.0010
4x	±100K	±0.0020
7-8x	±175K	±0.0060



ENERGYLABEL

Electrical appliances carry an energy label. This label prints the so-called energy efficiency score in classes. These classes range from 'very energy efficient' (A++) to 'very waste of energy' (E). A more expensive new device may eventually turn out to be cheaper if the energy score is good. IPEA is the new system for luminaire energy efficiency assessment.

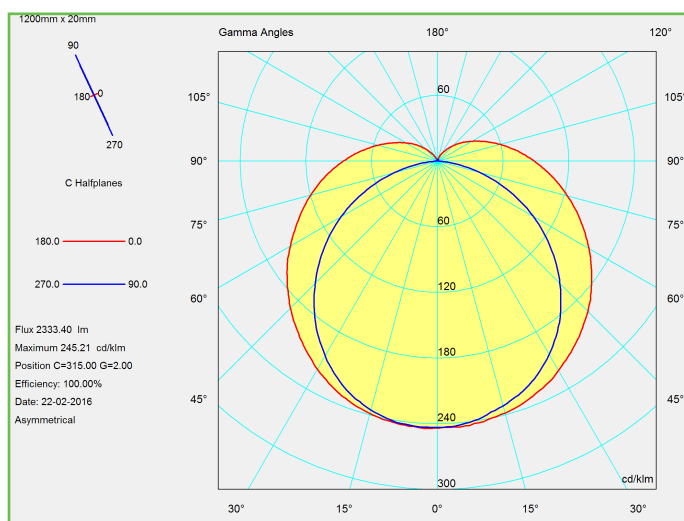


BEAM

The Illuminance Cone Diagram indicates the maximum illuminance at different distances from the fixture.

POLAR DIAGRAM

The polar luminous intensity graph illustrates the distribution of luminous intensity, in candelas, for the transverse (solid line) and axial (dashed line) planes of the luminaire. The shown curve provides a visual guide to the type of distribution expected from the luminaire e.g. wide, narrow, direct, indirect... in addition to intensity.



TL TOP PRO

REFERENCE	LENGTH	WATT	COVER	COLOR	DIMMABLE
286-0050	60 CM	9 W	Frosted	4000 K	No
286-0051	120 CM	15 W	Frosted	4000 K	No
286-0052	150 CM	21 W	Frosted	4000 K	No