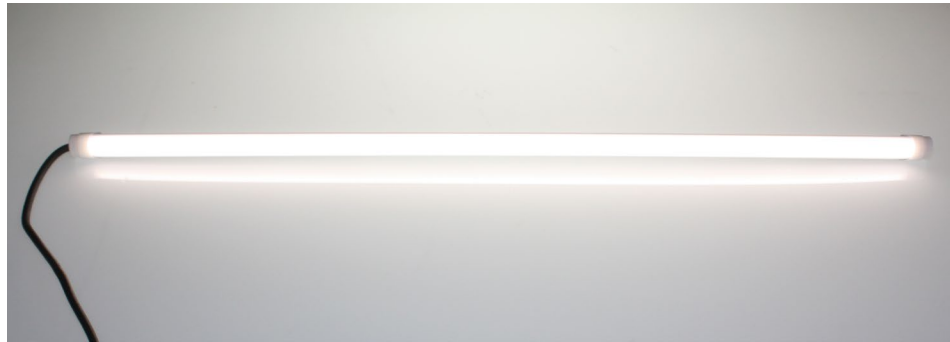




next generation led

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## Wired LED Tube



### Properties

- Lifespan L70 %: > 50.000hr
- Immediate start regardless of temperature or humidity
- No maintenance costs
- Efficacy: 130 lumen per watt
- SMD 2835
- Aluminum cooling surface
- Built in driver
- Flicker free to reduce eyestrain
- Will not break when dropped
- No mercury or toxic gases
- Warranty: 3 year

IP 44

Quality driver

### Specifications

Wired LED Tube	590mm	895mm	1200mm	1500mm
Input voltage	AC 165 ~ 265 V			
Number of LED's	76	120	156	236
Power	10W	15W	20W	30W
Color rendering index	RA > 80, optional RA > 90			
Color temperature	3000K, 4000K, 5000K			
Cover	Clear, striped, frosted cover			
Diameter	26mm			
Powerfactor	> 0.8			

### Application

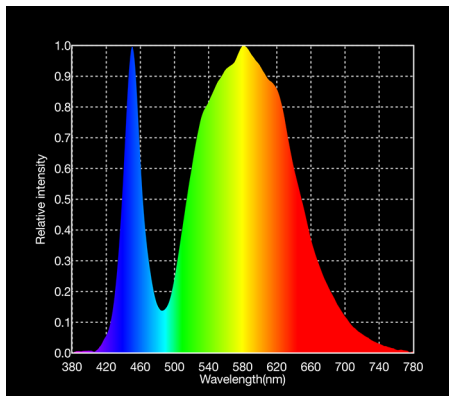
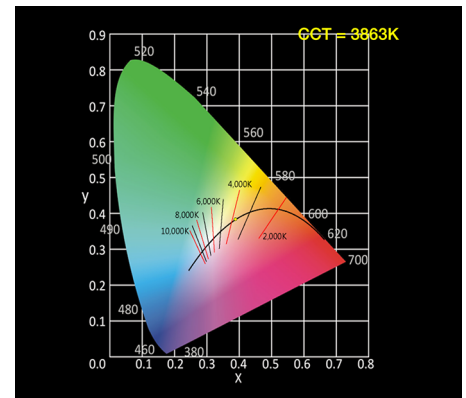
Office, hospital, hotel, supermarket, library, parking, corridors ...

Updated: June 2017



## 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.

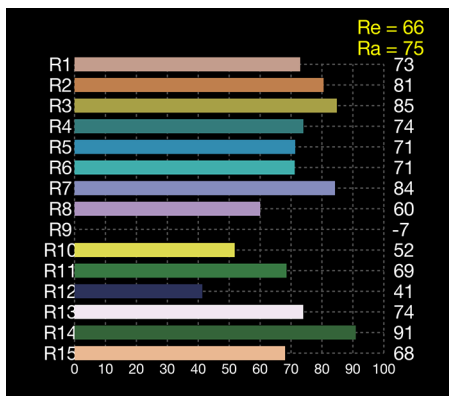
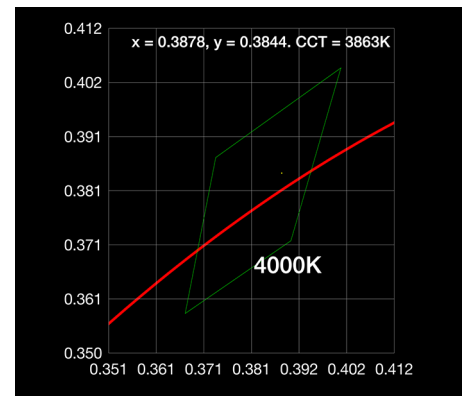


## SPECTRUM

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

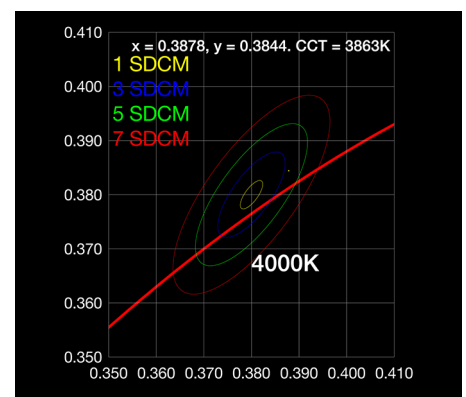
Re = average of R1 to R15

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

## SDCM

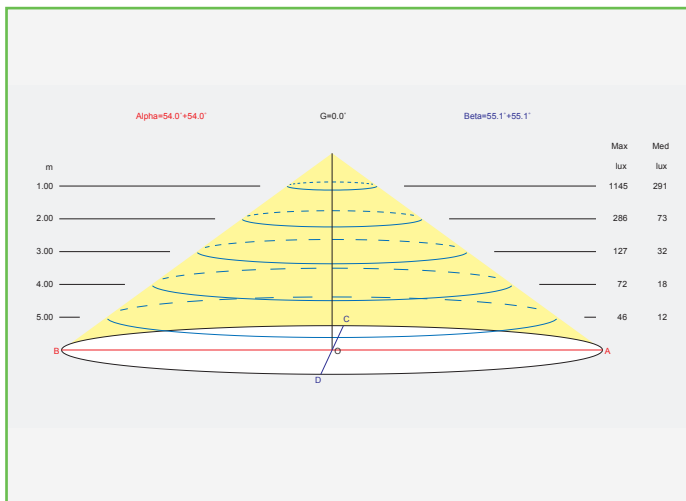
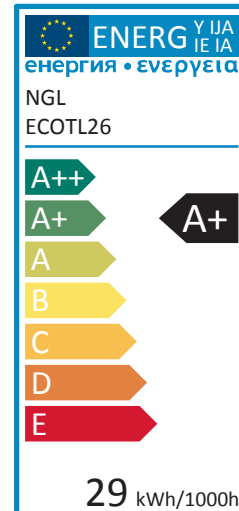
SDCM is an acronym which stands for Standard Deviation Colour Matching. SDCM has the same meaning as a "MacAdam ellipse". A 1-step MacAdam ellipse defines a zone in the CIE 1931 2 deg (xy) colour space within which the human eye cannot discern colour difference. Most LEDs are binned at the 4-7 step level,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

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



## ENERGY LABEL

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.

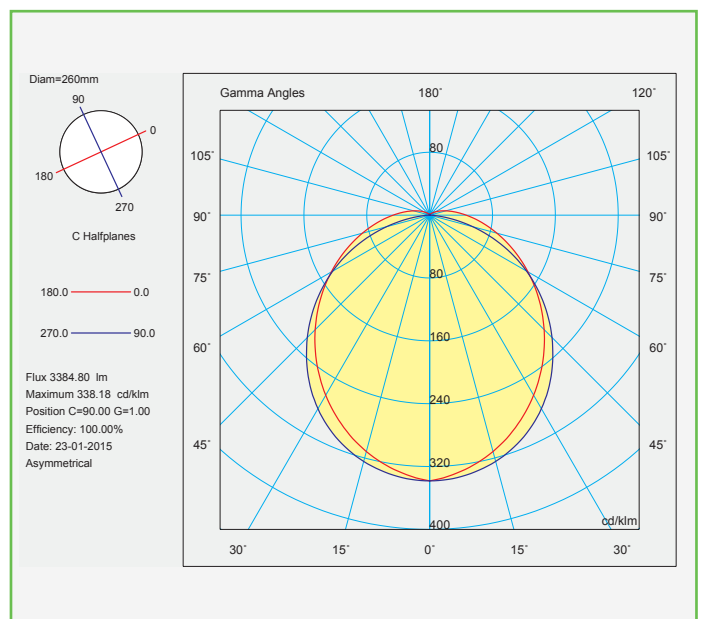


## BEAM

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.



## Wired LED Tube

REFERENCE	WATT	LENGTH	LUMEN	COLOR	CRI
281-0003	10W	590mm	1300lm	3000K	80
281-0004	10W	590mm	1300lm	4000K	80
281-0005	10W	590mm	1300lm	5000K	80
281-0000	15W	895mm	2000lm	3000K	80
281-0001	15W	895mm	2000lm	4000K	80
281-0002	15W	895mm	2000lm	5000K	80
281-0006	20W	1200mm	2600lm	3000K	80
281-0007	20W	1200mm	2600lm	4000K	80
281-0008	20W	1200mm	2600lm	5000K	80
281-0009	30W	1500mm	3200lm	3000K	80
281-0010	30W	1500mm	3200lm	4000K	80
281-0011	30W	1500mm	3200lm	5000K	80

