

136-513 10W 4000K specific configuration
Downlight | Ø192mm | white | 5-CCT | 6~15W | EU plug

Introduction

Purpose of this Document

This document provides information for 136-513 10W 4000K. During measurement, the product is used in a different mode where output power, colour temperature and/or beam angle are changed from factory standard. These adjustments can be made without altering the product and are designed to be set by the installer. In most cases, the options are set through switches on the product.

Results

Total input power	9.9 W
Correlated Colour Temperature	4181 K
Total lumen output	1079 lm
Efficiency	109 lm/W

Electrical measurement details

Input Power

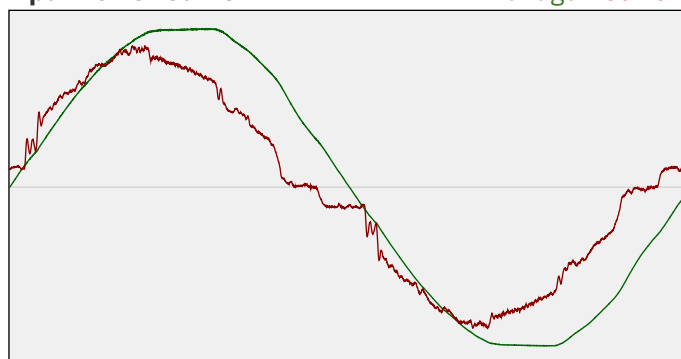
RMS Input voltage feed. V_{RMS}	230 V
RMS Input current feed. I_{RMS}	0.046 A
Total input power	9.9 W

Frequency of input power	50 Hz
Power factor	0.93
Displacement power factor	0.94

Total harmonic distortion of the current	12.85%
Total harmonic distortion of the voltage	2.4%

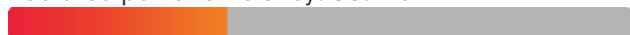
Input Power Curve

Voltage - Current



Efficiency

Radiated power efficiency: 35.4%



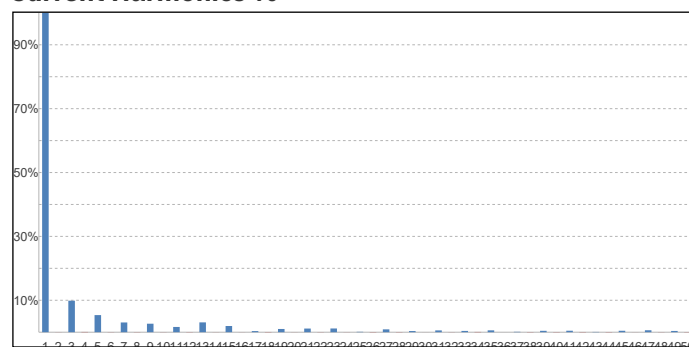
Lumen efficiency: 109 lm/W



Harmonics

3rd Harmonic	9.87%
5th Harmonic	5.35%
7th Harmonic	3.05%
9th Harmonic	2.66%
11th Harmonic	1.64%

Current Harmonics %



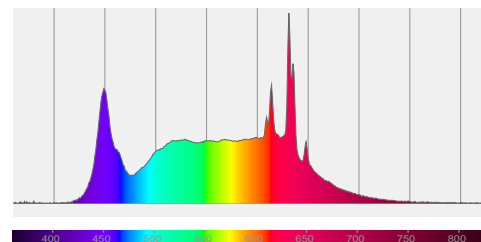
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Colour measurement details

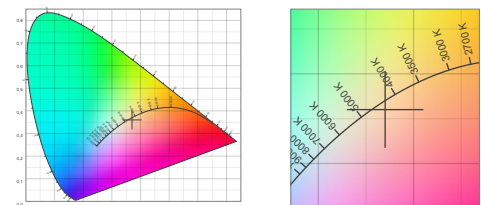
Total lumen output 1079 lm
 Correlated Colour Temperature 4181 K
 Colour coordinates CIE 1931 (x;y) = (0.370;0.360)
 Colour deviation from BBL Duv = -0.0049

TM30-18 Colour Fidelity Index R_f 93.1
 TM30-18 Colour Gamut Index R_g 103.8
 Colour Rendering Index (Ra) CRI 96.0
 Colour Rendering Index. (red component) $R_9 = 96.8$

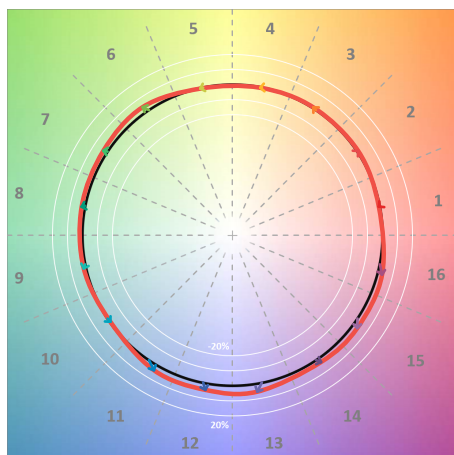
Colour Quality Scale CQS = 95.6
 Television Lighting Consistency Index TLCI = 92



Relative spectral power distribution



TM30 details

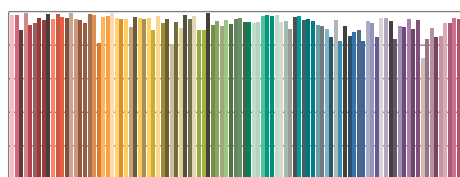


TM30 Colour vectors per hue bin

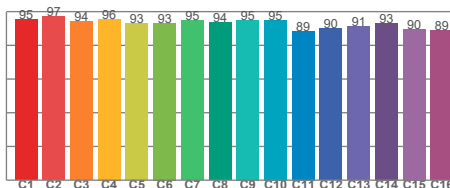


TM30 Colour distortion

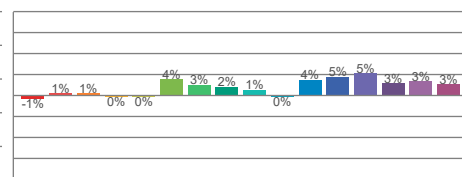
Hue Bin	R_f	Shifts (%)	
		Chroma	Hue
C1	95	-1%	0%
C2	97	1%	0%
C3	94	1%	2%
C4	96	0%	1%
C5	93	0%	2%
C6	93	4%	2%
C7	95	3%	1%
C8	94	2%	1%
C9	95	1%	2%
C10	95	0%	3%
C11	89	4%	6%
C12	90	5%	2%
C13	91	5%	-4%
C14	93	3%	2%
C15	90	3%	-5%
C16	89	3%	-6%



TM30-18 R_f -values per reference colour

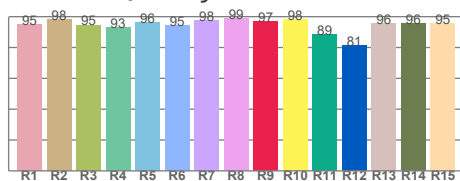


TM30-18 R_f -values per hue bin

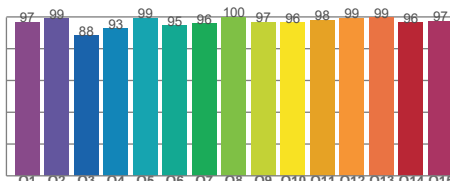


TM30 Chroma shift

Colour Quality details



Colour Rendering Index



Colour Quality Scale