

136-448 20W 3000K specific configuration

Refl downl | white | Ø280mm | 60° | 3-CCT | 18~30W | EU plug

## Introduction

### Purpose of this Document

This document provides information for 136-448 20W 3000K. 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	18.7 W
Correlated Colour Temperature	2969 K
Total lumen output	1985 lm
Efficiency	106 lm/W

## Electrical measurement details

### Input Power

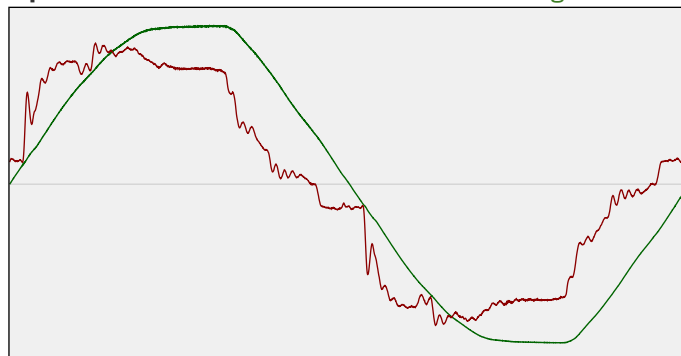
RMS Input voltage feed. $V_{RMS}$	230 V
RMS Input current feed. $I_{RMS}$	0.090 A
Total input power	18.7 W

Frequency of input power	50 Hz
Power factor	0.9
Displacement power factor	0.92

Total harmonic distortion of the current	14.5%
Total harmonic distortion of the voltage	3.14%

### Input Power Curve

Voltage - Current



### Efficiency

Radiated power efficiency: 32.6%



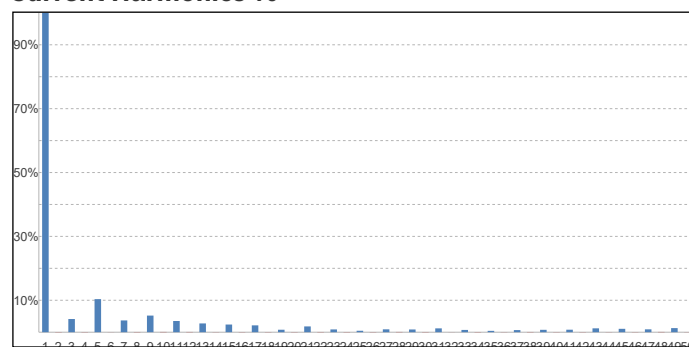
Lumen efficiency: 106 lm/W



### Harmonics

3rd Harmonic	4.13%
5th Harmonic	10.36%
7th Harmonic	3.69%
9th Harmonic	5.2%
11th Harmonic	3.51%

### Current Harmonics %



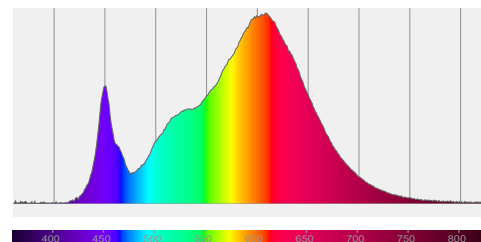
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### Colour measurement details

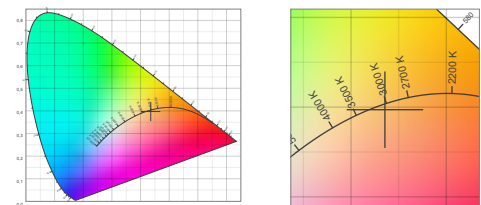
Total lumen output 1985 lm  
 Correlated Colour Temperature 2969 K  
 Colour coordinates CIE 1931 (x;y) = (0.436;0.397)  
 Colour deviation from BBL Duv = -0.0026

TM30-18 Colour Fidelity Index  $R_f$  85.2  
 TM30-18 Colour Gamut Index  $R_g$  97.8  
 Colour Rendering Index (Ra) CRI 84.0  
 Colour Rendering Index. (red component)  $R_9 = 10.7$

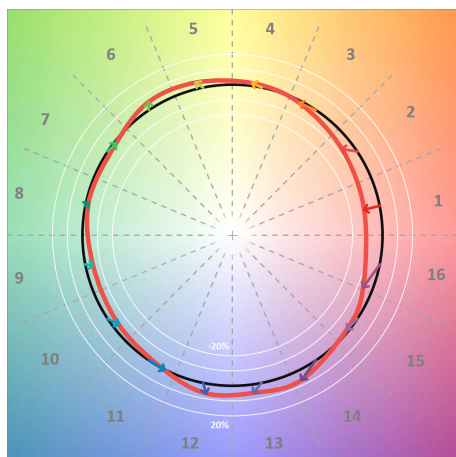
Colour Quality Scale CQS = 82.5  
 Television Lighting Consistency Index TLCI = 68



Relative spectral power distribution



### TM30 details

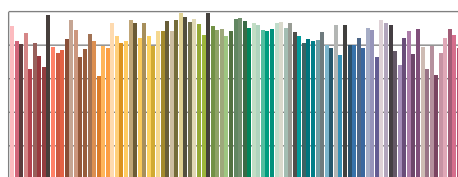


TM30 Colour vectors per hue bin

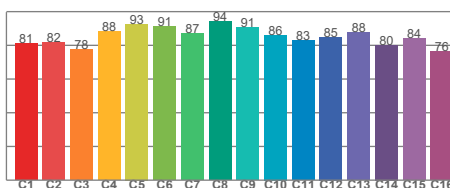


TM30 Colour distortion

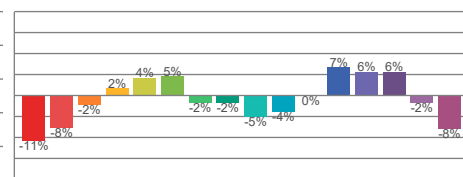
Hue Bin	$R_f$	Shifts (%)	
		Chroma	Hue
C1	81	-11%	-1%
C2	82	-8%	7%
C3	78	-2%	12%
C4	88	2%	7%
C5	93	4%	4%
C6	91	5%	-2%
C7	87	-2%	-8%
C8	94	-2%	-3%
C9	91	-5%	2%
C10	86	-4%	8%
C11	83	0%	12%
C12	85	7%	3%
C13	88	6%	-7%
C14	80	6%	-15%
C15	84	-2%	-10%
C16	76	-8%	-17%



TM30-18  $R_f$ -values per reference colour

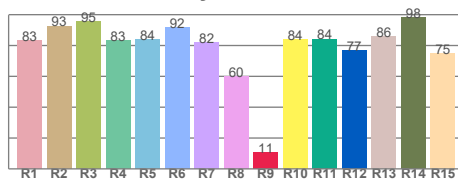


TM30-18  $R_f$ -values per hue bin

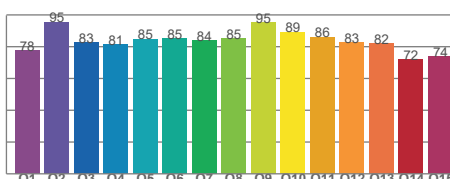


TM30 Chroma shift

### Colour Quality details



Colour Rendering Index



Colour Quality Scale