

Photometric Measurement Report

Generated by Radiant Vision Systems Light Measurement Platform

Luminaire Model	L SU2811002				
Led & Driver Type	SAMSUNG	5630	&	TRIDONIC	-
Luminaire Type	SURFACE MOUNTED				
Luminaire Family	MARKT				
Holder	-				
Reflector / Lens Degree	30				
Brand	LAMP 83				
Date of issue	19.09.2018				

Test Standards

EN 13032-1:2012 and EN 13032-4:2013 Light and Lighting. Measurement and presentation of photometric data of lamps and luminaires

IESNA LM-79-08 Approved Method: Electrical and Photometric Measurements of SSL Products(Type-C)

Test and Test Method

The photometric measurements listed in this report are performed by a Radiant Vision Systems PM-NFMS™ near field goniometer system. The NFMS system performs brightness and color measurements as a function of viewing angle. It provides accurate near-field luminance distribution data and generates far field distribution data.

Test Equipment

Name	Serial / Version
The PM-NFMS™ system consists of a PM-Series™ Imaging Colorimeter IC-PMI2	SN# 79046501
NFMS 800 two-axis goniometer	SN# 641502001
SP-1000 spectrometer	SN# 3017942276
PM-NFMS™ software	Version 4.9.9
ProSource™ Software	Version 10.2.2

The measurement data is preserved as a set of images Radiant Source Model™(RSMX). The ProSource™ Software (Version 10.2.2) was been used to convert the RSMX to a ray set(LTD file)

Laboratory Environment and Conditions

The measurement was done in the photometric laboratory of Lamp83 (Istanbul). It is a climate controlled dark room. Also a AC/DC power stabilisation unit is used(Pyramid Plus PPS310,8KW,10kVA,SN# 073010T0066).

Temperature:	25°C	(± 1 °C)
Moisture:	60%	(± 10 %)

The luminaire was thermally stabilized for **at least 45 minutes** on the goniometer. The end of the stabilization period has been reached if in the last 10 minutes the luminance output has not changed by more than $\pm 0.5\%$.

Equipment Specifications

Precision: 0.25° (NFMS Goniometer)

Luminance (Y): $\pm 3\%$ (Imaging Colorimeter IC-PMI2)

Color Accuracy: ± 0.002 Illuminant A type source (Spectrometer SP-1000)

Tested By:

Gökhan AKSEL
Test Technician

Reviewed By:

Anıl TOKER
Physics Engineer

Approved By:

Erdoğan EMREM
R&D Manager

LAMP83 Aydınlatma San. Ve Tic. A.Ş

Dudullu Organize Sanayi Bölgesi 2. Cadde No:22 PK: 34775 Ümraniye - İstanbul

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Luminaire Spectroradiometric Results

Luminous Flux (lm)	4100
CCT (K)	3,339
Cx	0.4111
Cy	0.3865
CRI	86
Luminous Efficacy (lm/W)	100.62
Angle (°)	28.5

Luminaire Electric Specifications

Voltage (VAC)	221.1
Current (A)	0.19
Power (W)	40.74873
Power Factor	0.97
LED Voltage(VDC)	99.3
LED Current(mA)	358
LED Power(W)	35.5494

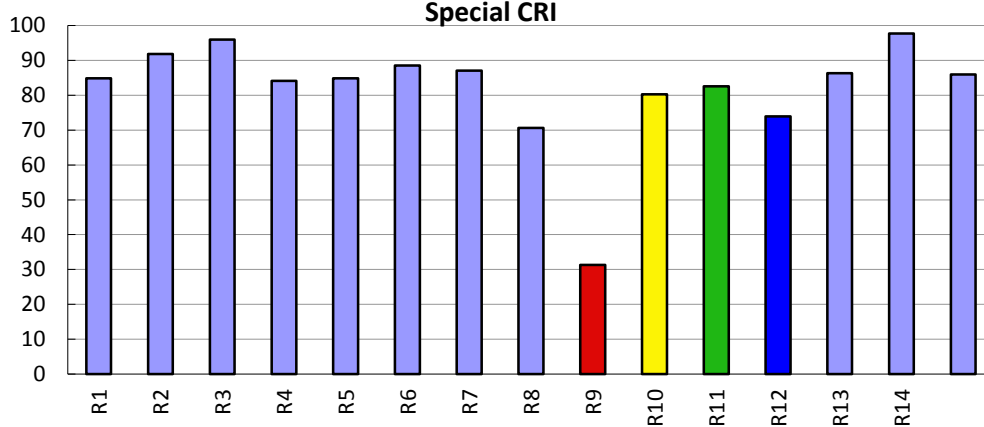
Measurement Preset Specifications

External ND Filter	NO
ND Filter	ND3
F-Number	8
Exposure Time (ms)	133.77
Distance(mm)	3135

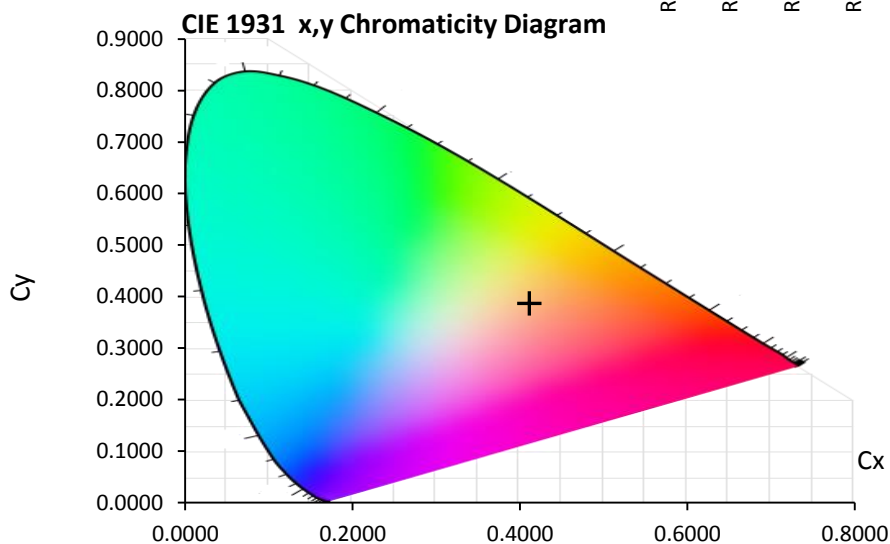
Rendering Index

CRI	
R1	84.8
R2	91.8
R3	96.0
R4	84.1
R5	84.9
R6	88.5
R7	87.1
R8	70.6
R9	31.3
R10	80.3
R11	82.6
R12	73.9
R13	86.3
R14	97.8
CRI Ra	86.0

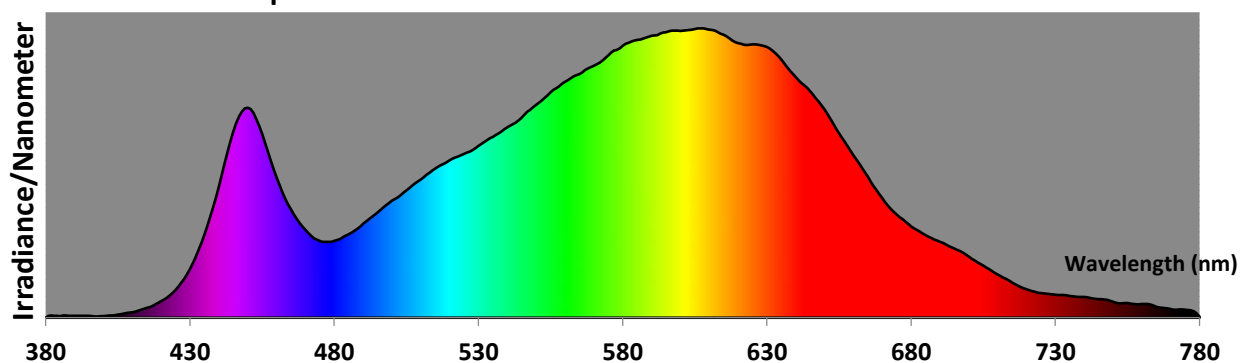
Special CRI



CIE 1931 x,y Chromaticity Diagram



Relative Spectral Power Distribution

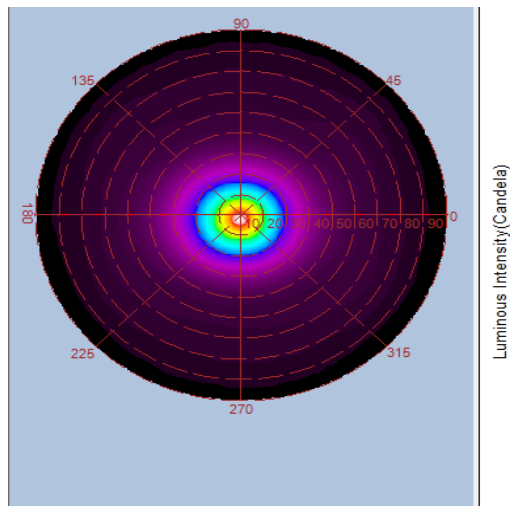


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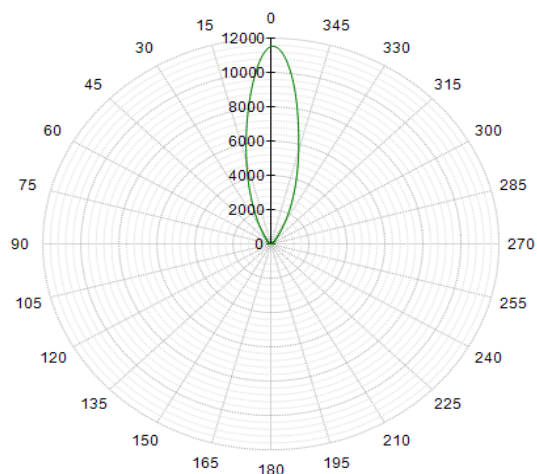
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Intensity Distribution - Polar Curve

Intensity Radar Plot (ray trace to infinity)



Luminous Intensity Distribution



Cone Diagram

0.5	0.26 0.26	E(0°) E(C90) E(C0)	45981 20872 21261
1.0	0.52 0.53	E(0°) E(C90) E(C0)	11495 5218 5315
1.5	0.79 0.79	E(0°) E(C90) E(C0)	5109 2319 2362
2.0	1.05 1.06	E(0°) E(C90) E(C0)	2874 1304 1329
2.5	1.31 1.32	E(0°) E(C90) E(C0)	1839 835 850
3.0	1.57 1.59	E(0°) E(C90) E(C0)	1277 580 591

Distance [m] Cone Diameter [m] Illuminance [lx]

— C0 - C180 (Half value angle: 29.6°)
— C90 - C270 (Half value angle: 29.4°)

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UGR Table

Glare Evaluation According to UGR

ρ Ceiling		70	70	50	50	30	70	70	50	50	30
ρ Walls		50	30	50	30	30	50	30	50	30	30
ρ Floor		20	20	20	20	20	20	20	20	20	20
Room size X Y		Viewing direction at right angles to lamp axis					Viewing direction parallel to lamp axis				
2H	2H	11.7	12.4	11.9	12.6	12.8	14.3	15.1	14.6	15.3	15.5
	3H	13.0	13.7	13.3	14.0	14.2	15.4	16.1	15.7	16.3	16.6
	4H	13.7	14.4	14.0	14.7	14.9	15.9	16.6	16.2	16.8	17.1
	6H	14.4	15.0	14.7	15.3	15.6	16.4	17.0	16.8	17.3	17.6
	8H	14.6	15.2	15.0	15.5	15.8	16.7	17.3	17.0	17.6	17.9
	12H	14.8	15.4	15.2	15.7	16.0	17.0	17.5	17.3	17.8	18.1
4H	2H	12.4	13.1	12.7	13.3	13.6	14.6	15.3	14.9	15.5	15.8
	3H	14.0	14.5	14.3	14.8	15.2	15.9	16.5	16.3	16.8	17.1
	4H	14.8	15.3	15.2	15.6	16.0	16.6	17.1	17.0	17.4	17.8
	6H	15.5	16.0	15.9	16.3	16.7	17.2	17.6	17.6	18.0	18.4
	8H	15.8	16.2	16.3	16.6	17.0	17.6	17.9	18.0	18.3	18.7
	12H	16.1	16.4	16.5	16.8	17.2	17.9	18.2	18.3	18.6	19.0
8H	4H	15.2	15.6	15.6	16.0	16.4	16.8	17.2	17.2	17.5	17.9
	6H	16.1	16.4	16.6	16.8	17.3	17.6	17.9	18.0	18.3	18.7
	8H	16.5	16.7	17.0	17.2	17.7	17.9	18.2	18.4	18.6	19.1
	12H	16.8	17.0	17.3	17.5	18.0	18.3	18.5	18.8	19.0	19.5
12H	4H	15.3	15.6	15.7	16.0	16.4	16.8	17.1	17.2	17.5	18.0
	6H	16.2	16.4	16.7	16.9	17.4	17.6	17.8	18.1	18.3	18.8
	8H	16.6	16.8	17.1	17.3	17.8	18.0	18.2	18.5	18.7	19.2
Variation of the observer position for the luminaire distance S											
S = 1.0H		+0.5 / -0.3					+1.0 / -0.4				
S = 1.5H		+1.2 / -0.4					+2.1 / -0.6				
S = 2.0H		+2.0 / -0.6					+3.4 / -0.8				
Standard table		BK06					BK05				
Correction summand		-0.6					0.9				
Corrected glare indices referring to 4100lm total luminous flux											

Sample Pictures