

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	120		
Brand	LAMP 83		
Date of issue	11.10.2018		

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 ± 0.5%.

Equipment Specifications

Precision: 0.25° (NFMS Goniometer)

Luminance (Y): ± 3% (Imaging Colotimeter IC-PMI2)

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

Tested By:

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Test Technician

Reviewed By:

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Physics Engineer

Approved By:

Erdoğan EMREM
R&D Manager

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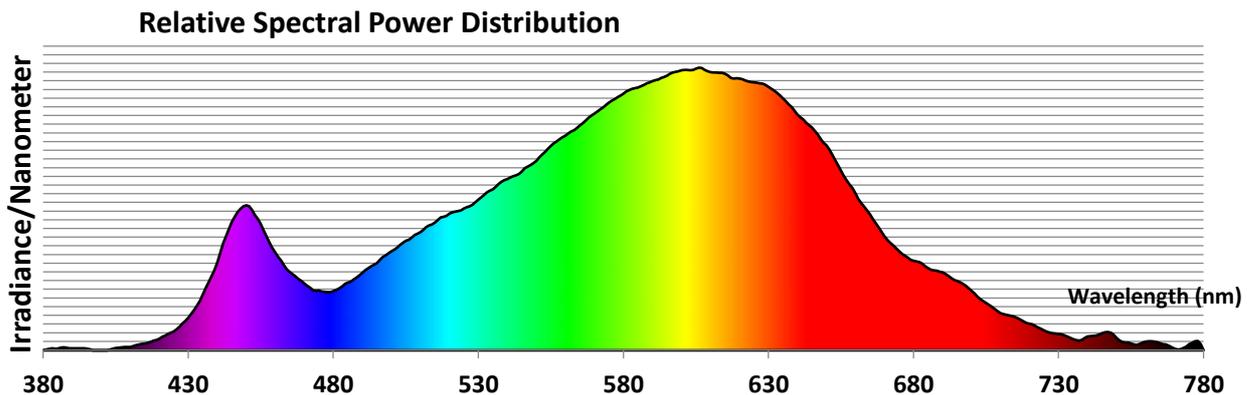
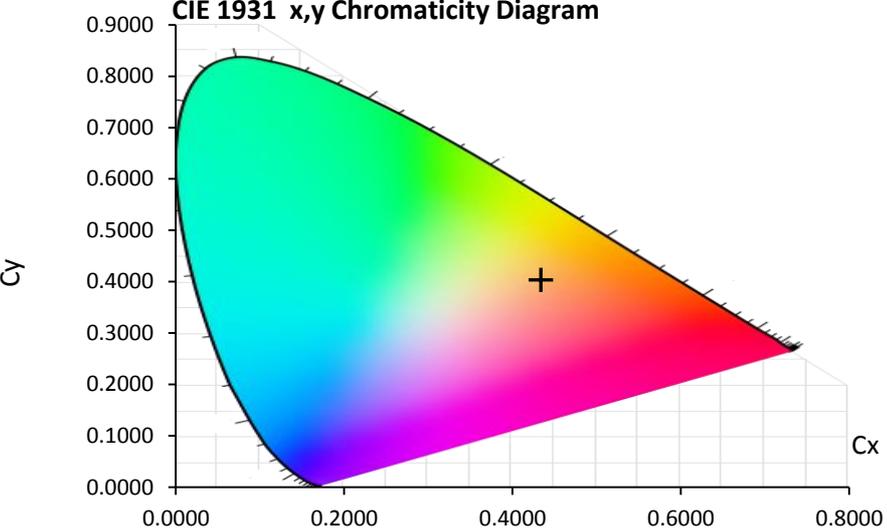
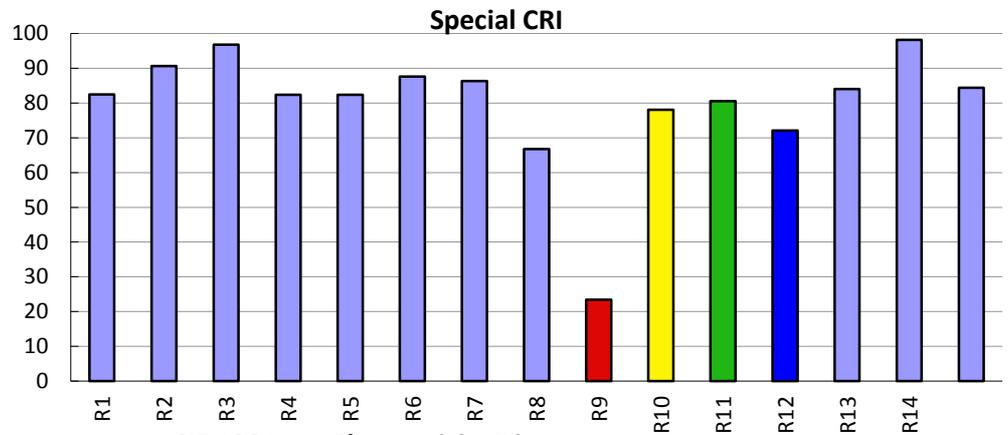
Luminaire Spectroradiometric Results	
Luminous Flux (lm)	3898
CCT (K)	3,050
Cx	0.4337
Cy	0.4033
CRI	84
Luminous Efficacy (lm/W)	95.659
Angle (°)	121.0

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	ND2
F-Number	8
Exposure Time (ms)	85.11
Distance(mm)	3135

Rendering Index

CRI	
R1	82.5
R2	90.6
R3	96.8
R4	82.4
R5	82.4
R6	87.7
R7	86.4
R8	66.8
R9	23.4
R10	78.1
R11	80.6
R12	72.1
R13	84.1
R14	98.2
CRI Ra	84.4

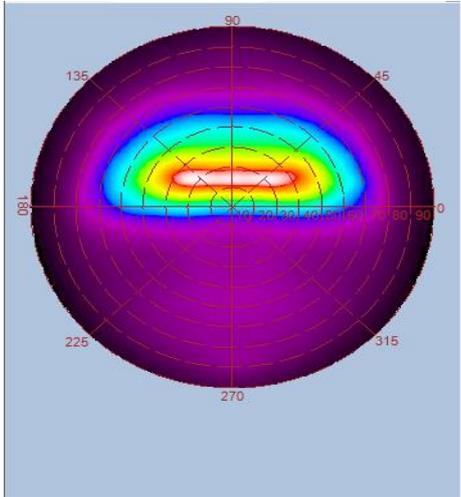


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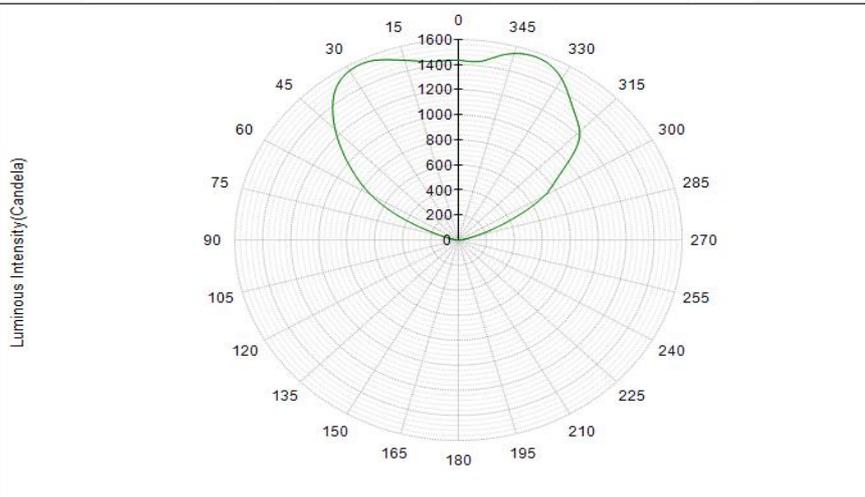
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Intensity Distribution - Polar Curve

Intensity Radar Plot (ray trace to infinity)



Luminous Intensity Distribution



Cone Diagram

0.5	1.58 0.12	E(0°) E(C90) E(C0)	5743 479 2837
1.0	3.16 0.24	E(0°) E(C90) E(C0)	1436 120 709
1.5	4.75 0.36	E(0°) E(C90) E(C0)	638 53 315
2.0	6.33 0.48	E(0°) E(C90) E(C0)	359 30 177
2.5	7.91 0.60	E(0°) E(C90) E(C0)	230 19 113
3.0	9.49 0.72	E(0°) E(C90) E(C0)	160 13 79

Distance [m] Cone Diameter [m]
 — C0 - C180 (Half value angle: 13.6°)
 — C90 - C270 (Half value angle: 115.4°)

Illuminance [lx]

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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	19.0	20.4	19.3	20.6	20.8	21.5	22.9	21.8	23.1	23.3
	3H	21.6	22.8	21.9	23.1	23.3	22.9	24.1	23.2	24.4	24.7
	4H	22.9	24.1	23.3	24.4	24.6	23.3	24.4	23.6	24.7	25.0
	6H	24.2	25.2	24.5	25.5	25.8	23.4	24.5	23.8	24.8	25.1
	8H	24.6	25.6	25.0	26.0	26.3	23.5	24.5	23.8	24.8	25.1
4H	12H	24.9	25.9	25.3	26.2	26.6	23.5	24.5	23.9	24.8	25.1
	2H	19.4	20.5	19.7	20.8	21.1	21.5	22.7	21.9	23.0	23.3
	3H	22.1	23.1	22.5	23.4	23.8	23.0	24.0	23.4	24.3	24.7
	4H	23.6	24.5	24.0	24.8	25.2	23.4	24.3	23.8	24.6	25.0
	6H	24.9	25.7	25.3	26.1	26.5	23.6	24.4	24.1	24.8	25.2
8H	8H	25.4	26.2	25.9	26.6	27.0	23.7	24.4	24.2	24.8	25.3
	12H	25.9	26.5	26.3	26.9	27.4	23.8	24.4	24.2	24.8	25.3
	4H	23.7	24.4	24.1	24.8	25.2	23.5	24.2	24.0	24.6	25.0
	6H	25.1	25.7	25.6	26.1	26.6	23.8	24.4	24.3	24.8	25.3
	8H	25.7	26.2	26.2	26.7	27.2	23.9	24.4	24.4	24.9	25.4
12H	12H	26.2	26.7	26.7	27.1	27.6	24.0	24.5	24.5	24.9	25.4
	4H	23.7	24.3	24.1	24.7	25.2	23.5	24.2	24.0	24.6	25.0
	6H	25.1	25.6	25.6	26.1	26.6	23.9	24.4	24.3	24.8	25.3
	8H	25.7	26.2	26.2	26.6	27.1	24.0	24.4	24.5	24.9	25.4
Variation of the observerposition for the luminaire distance S											
S = 1.0H	+0.1 / -0.1					+0.9 / -1.2					
S = 1.5H	+0.2 / -0.1					+2.1 / -2.2					
S = 2.0H	+0.4 / -0.4					+3.4 / -3.0					
Standard table	---					BK04					
Correction summand	---					4.2					
Corrected glare indices referring to 3898lm total luminous flux											

Sample Pictures