

**Photometric Measurement Report**

Generated by Radiant Vision Systems Light Measurement Platform

<b>Luminaire Model</b>	L SU2811002		
<b>Led &amp; Driver Type</b>	SAMSUNG	5630	& TRIDONIC -
<b>Luminaire Type</b>	SURFACE MOUNTED		
<b>Luminaire Family</b>	MARKT		
<b>Holder</b>	-		
<b>Reflector / Lens Degree</b>	30		
<b>Brand</b>	LAMP 83		
<b>Date of issue</b>	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).

<b>Temperature:</b>	25°C	(± 1 °C)
<b>Moisture:</b>	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:**

Gökhan AKSEL  
Test Technician

**Reviewed By:**

Anıl TOKER  
Physics Engineer

**Approved By:**

Erdoğan EMREM  
R&D Manager

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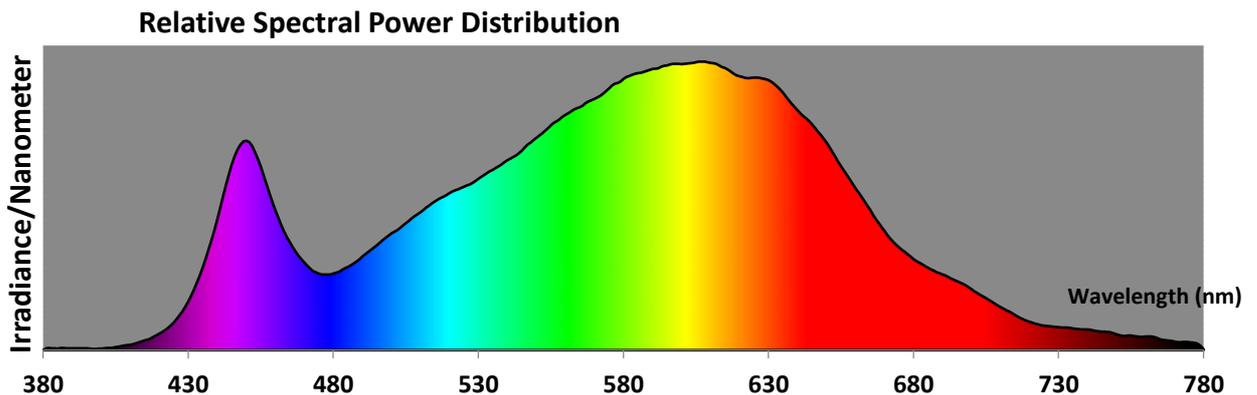
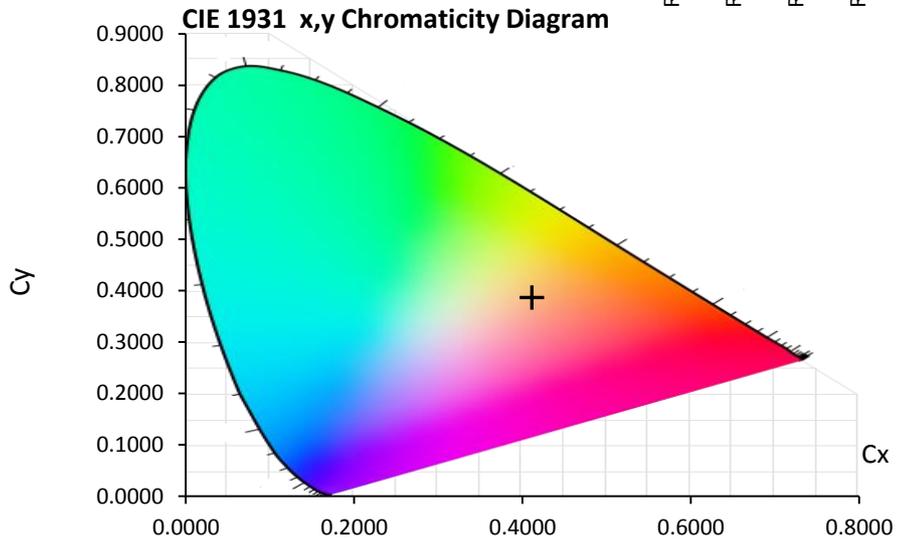
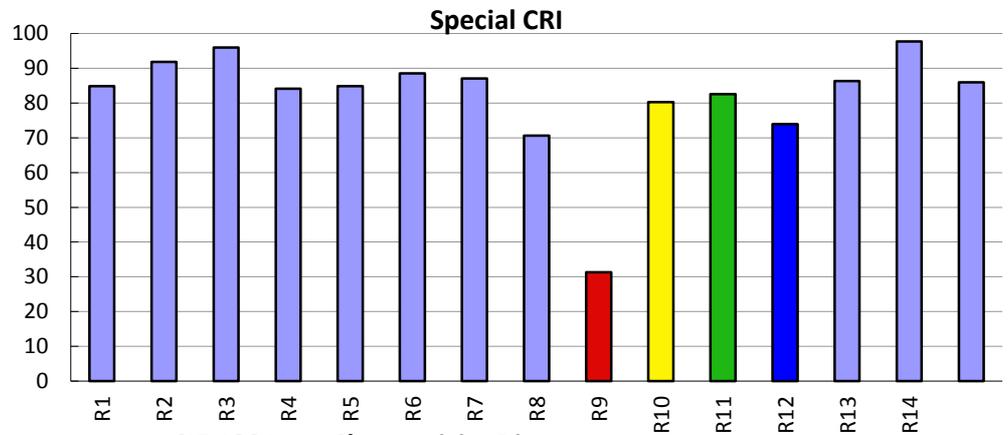
Luminaire Spectroradiometric Results	
Luminous Flux (lm)	4100
CCT (K)	3,339
Cx	0.4111
Cy	0.3865
CRI	86
Luminous Efficacy (lm/W)	100.62
Angle (°)	28.5

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

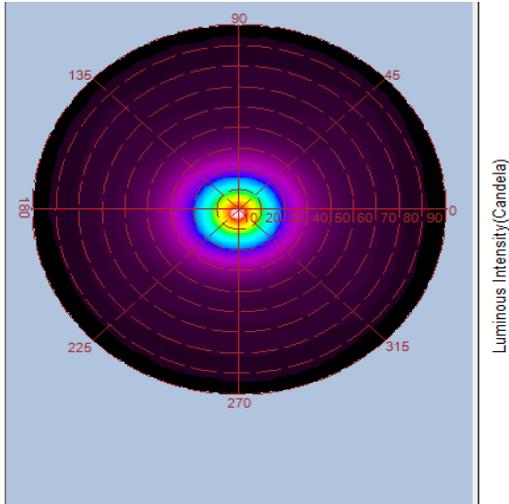


**Photometric Measurement Report**

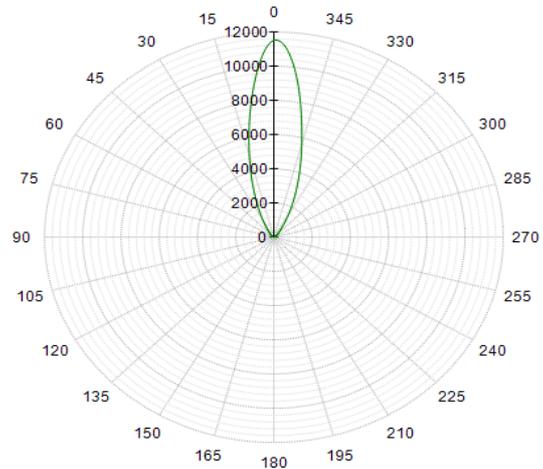
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**Intensity Distribution - Polar Curve**

Intensity Radar Plot (ray trace to infinity)



Luminous Intensity Distribution



**Cone Diagram**

0.5	0.26 0.26	E(0°) 45981 E(C90) 14.7° 20872 E(C0) 14.8° 21261
1.0	0.52 0.53	E(0°) 11495 E(C90) 14.7° 5218 E(C0) 14.8° 5315
1.5	0.79 0.79	E(0°) 5109 E(C90) 14.7° 2319 E(C0) 14.8° 2362
2.0	1.05 1.06	E(0°) 2874 E(C90) 14.7° 1304 E(C0) 14.8° 1329
2.5	1.31 1.32	E(0°) 1839 E(C90) 14.7° 835 E(C0) 14.8° 850
3.0	1.57 1.59	E(0°) 1277 E(C90) 14.7° 580 E(C0) 14.8° 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

$\rho$ Ceiling	70	70	50	50	30	70	70	50	50	30	
$\rho$ Walls	50	30	50	30	30	50	30	50	30	30	
$\rho$ 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