

Photometric Measurement Report

Generated by Radiant Vision Systems Light Measurement Platform

Luminaire Model	L AN4203031 ŞEFFAF				
Led & Driver Type	BRIDGELUX	VERO 10	&	TCI	UNIVERSAL 20
Luminaire Type	ANKASTRE				
Luminaire Family	SIGHT				
Holder	0				
Reflector / Lens Degree	18				
Brand	LAMP 83				
Date of issue	10.01.2018				

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:

Anıl TOKER
Physics Engineer

Approved By:

Erdoğan EMREM
R&D Manager

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Luminaire Spectroradiometric Results

Luminous Flux (lm)	648
CCT (K)	3,040
Illuminance	743
Cx	0.4328
Cy	0.4002
CRI	83
Luminous Efficacy (lm/W)	53.0
Angle (°)	22

Luminaire Electric Specifications

Voltage (VAC)	221.4
Current (A)	0.06
Power (W)	12.22128
Power Factor	0.92
LED Voltage(VDC)	25.7
LED Current(mA)	360
LED Power(W)	9.252

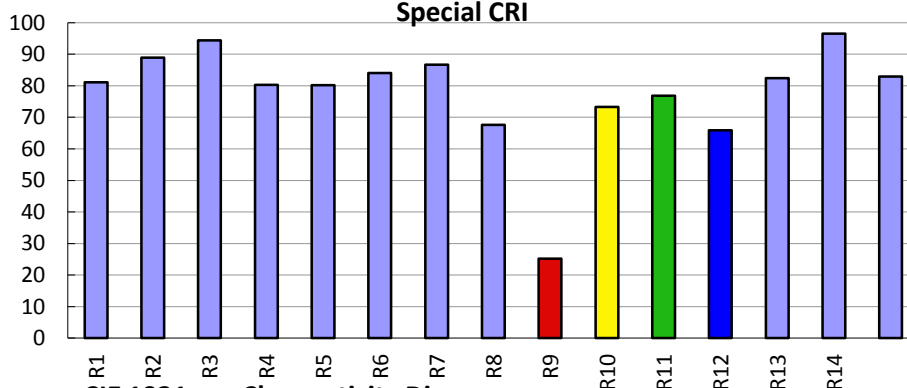
Measurement Preset Specifications

External ND Filter	YES
ND Filter	ND1
F-Number	8
Exposure Time (ms)	156.71
Distance(mm)	2075

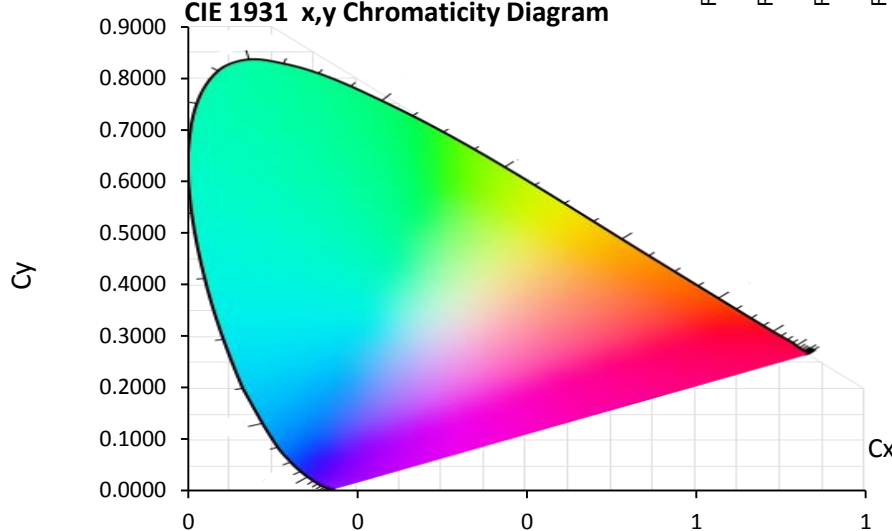
Rendering Index

CRI	
R1	81.1
R2	88.9
R3	94.4
R4	80.3
R5	80.2
R6	84.1
R7	86.7
R8	67.7
R9	25.2
R10	73.3
R11	76.8
R12	65.9
R13	82.4
R14	96.5
CRI Ra	82.9

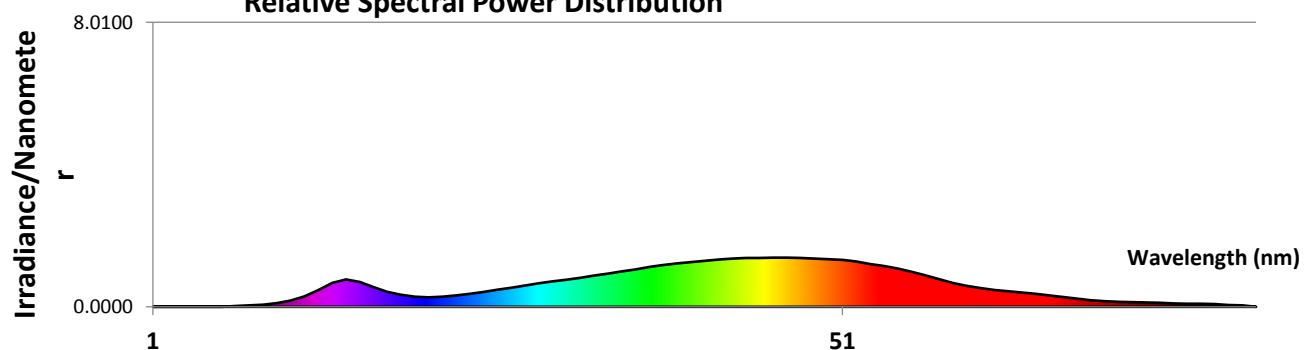
Special CRI



CIE 1931 x,y Chromaticity Diagram



Relative Spectral Power Distribution

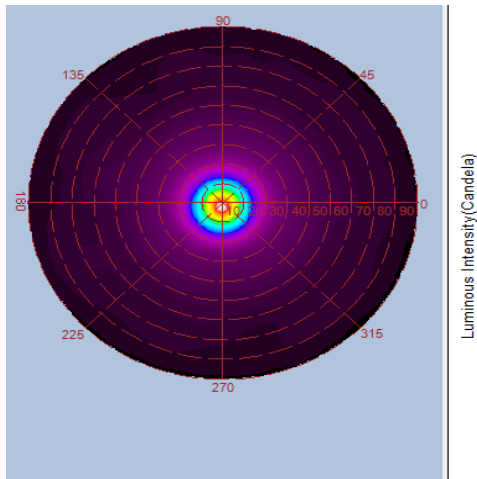


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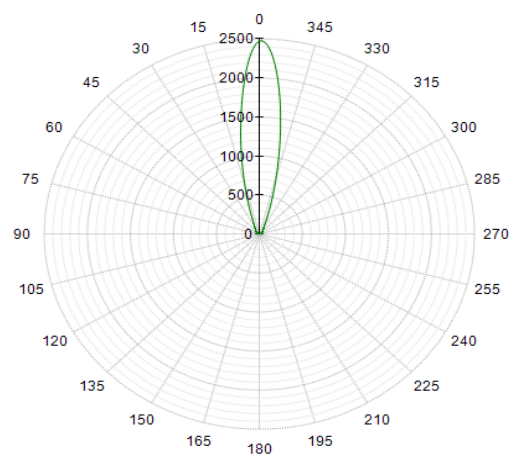
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Intensity Distribution - Polar Curve

Intensity Radar Plot (ray trace to infinity)



Luminous Intensity Distribution



Cone Diagram

0.5	0.20 0.21	E(0°) E(C90) E(C0)	11.2° 12.1°	9871 4692 4760
1.0	0.40 0.43	E(0°) E(C90) E(C0)	11.2° 12.1°	2468 1173 1190
1.5	0.59 0.64	E(0°) E(C90) E(C0)	11.2° 12.1°	1097 521 529
2.0	0.79 0.86	E(0°) E(C90) E(C0)	11.2° 12.1°	617 293 298
2.5	0.99 1.07	E(0°) E(C90) E(C0)	11.2° 12.1°	395 188 190
3.0	1.19 1.29	E(0°) E(C90) E(C0)	11.2° 12.1°	274 130 132

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

— C0 - C180 (Half value angle: 24.2°)
— C90 - C270 (Half value angle: 22.4°)

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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	16.0	16.9	16.2	17.1	17.3	15.8	16.7	16.1	16.9	17.1
	3H	17.1	17.9	17.4	18.1	18.4	17.3	18.1	17.6	18.4	18.6
	4H	17.6	18.4	18.0	18.7	18.9	18.2	18.9	18.5	19.2	19.5
	6H	18.2	18.9	18.5	19.2	19.5	18.9	19.6	19.2	19.9	20.2
	8H	18.4	19.1	18.8	19.4	19.7	19.2	19.9	19.5	20.2	20.5
	12H	18.6	19.3	19.0	19.6	19.9	19.4	20.1	19.8	20.4	20.7
4H	2H	16.5	17.2	16.8	17.5	17.8	16.4	17.1	16.7	17.4	17.7
	3H	17.9	18.5	18.2	18.8	19.1	18.3	18.9	18.6	19.2	19.5
	4H	18.7	19.2	19.0	19.6	19.9	19.4	19.9	19.7	20.3	20.6
	6H	19.4	19.9	19.8	20.3	20.7	20.4	20.9	20.8	21.2	21.6
	8H	19.7	20.2	20.1	20.6	21.0	20.7	21.2	21.2	21.6	22.0
	12H	20.0	20.4	20.4	20.8	21.2	21.0	21.5	21.5	21.9	22.3
8H	4H	19.1	19.5	19.5	19.9	20.3	19.7	20.2	20.1	20.5	20.9
	6H	20.0	20.4	20.5	20.8	21.2	21.0	21.3	21.4	21.7	22.2
	8H	20.4	20.8	20.9	21.2	21.7	21.5	21.8	22.0	22.3	22.8
	12H	20.8	21.1	21.3	21.5	22.0	22.0	22.3	22.5	22.7	23.2
12H	4H	19.2	19.6	19.6	20.0	20.4	19.7	20.1	20.2	20.5	21.0
	6H	20.1	20.5	20.6	20.9	21.4	21.0	21.3	21.5	21.8	22.3
	8H	20.6	20.9	21.1	21.4	21.9	21.7	21.9	22.1	22.4	22.9

Variation of the observer position for the luminaire distance S

S = 1.0H	+0.2 / -0.3	+0.2 / -0.2
S = 1.5H	+0.3 / -0.5	+0.2 / -0.5
S = 2.0H	+0.5 / -1.0	+0.4 / -0.9
Standard table	BK06	BK07
Correction summand	3.3	4.2

Corrected glare indices referring to 649lm total luminous flux

Sample Pictures