

Photometric Measurement Report

Generated by Radiant Vision Systems Light Measurement Platform

Luminaire Model	L AN4203030 BUZLU				
Led & Driver Type	BRIDGELUX	VERO 10	&	TCI	UNIVERSAL 20
Luminaire Type	ANKASTRE				
Luminaire Family	SIGHT				
Holder	0				
Reflector / Lens Degree	35				
Brand	LAMP 83				
Date of issue	09.01.2018				

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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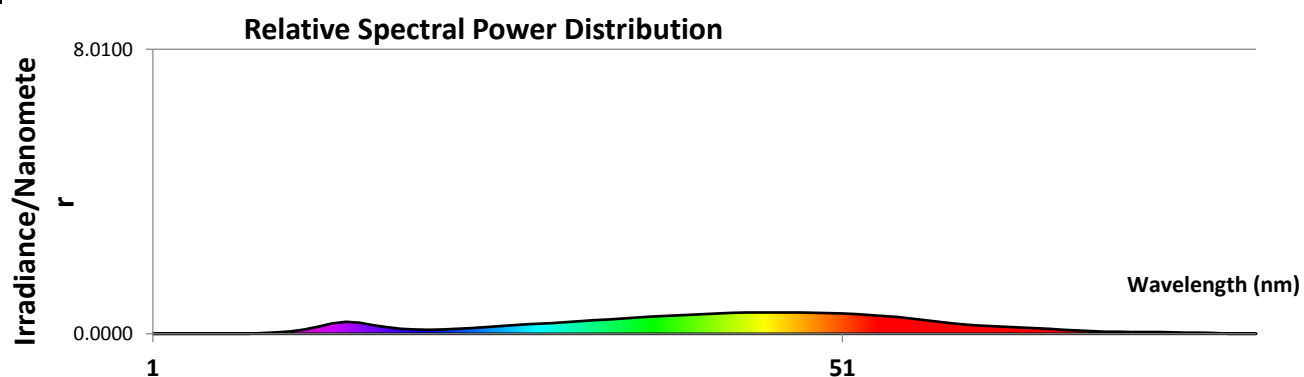
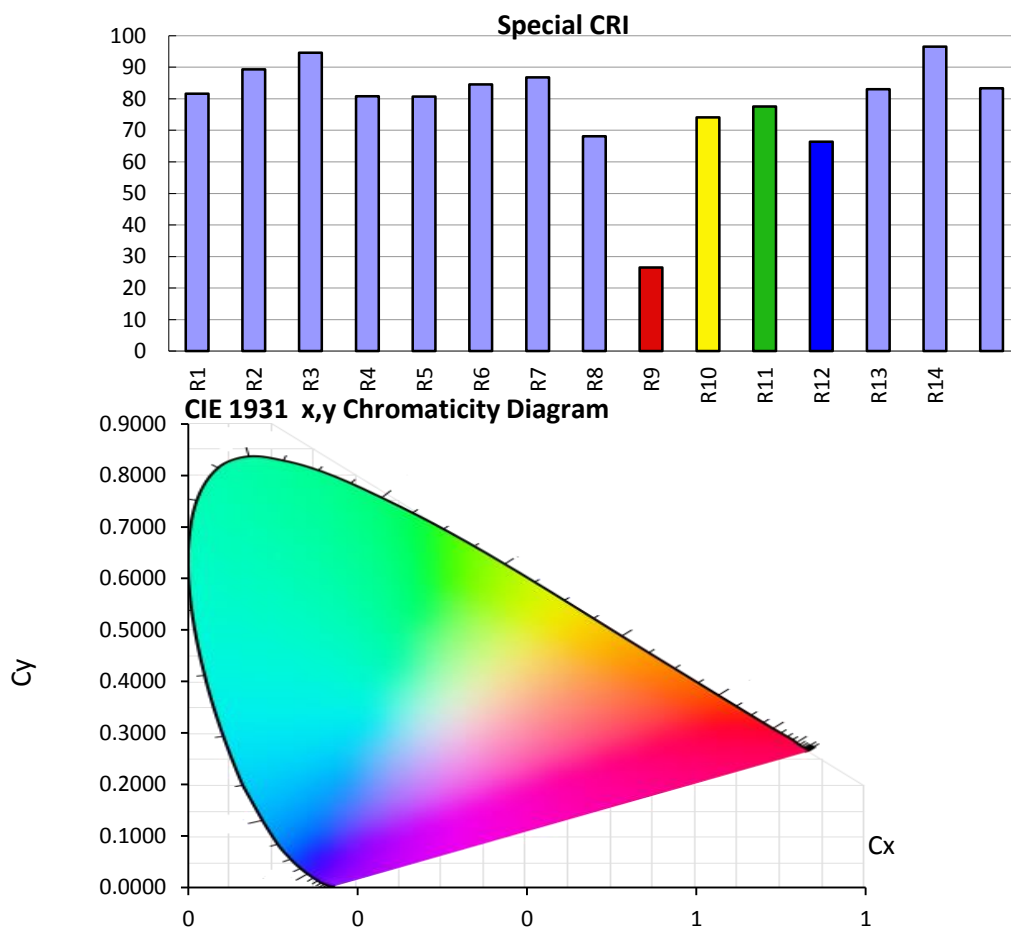
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Luminaire Spectroradiometric Results	
Luminous Flux (lm)	529
CCT (K)	3,031
Illuminance	321
Cx	0.4332
Cy	0.4000
CRI	83
Luminous Efficacy (lm/W)	67.1
Angle (°)	35.5

Luminaire Electric Specifications	
Voltage (VAC)	221.4
Current (A)	0.04
Power (W)	7.88184
Power Factor	0.89
LED Voltage(VDC)	25.4
LED Current(mA)	254
LED Power(W)	6.4516

Measurement Preset Specifications	
External ND Filter	YES
ND Filter	ND1
F-Number	8
Exposure Time (ms)	242.66
Distance(mm)	2075

Rendering Index	
CRI	
R1	81.7
R2	89.3
R3	94.6
R4	80.8
R5	80.8
R6	84.6
R7	86.8
R8	68.1
R9	26.5
R10	74.1
R11	77.5
R12	66.4
R13	83.0
R14	96.6
CRI Ra	83.3

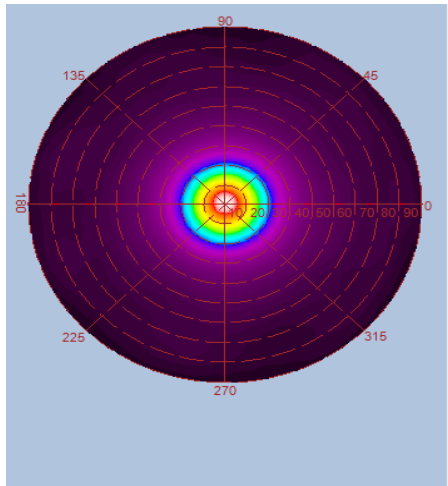


Photometric Measurement Report

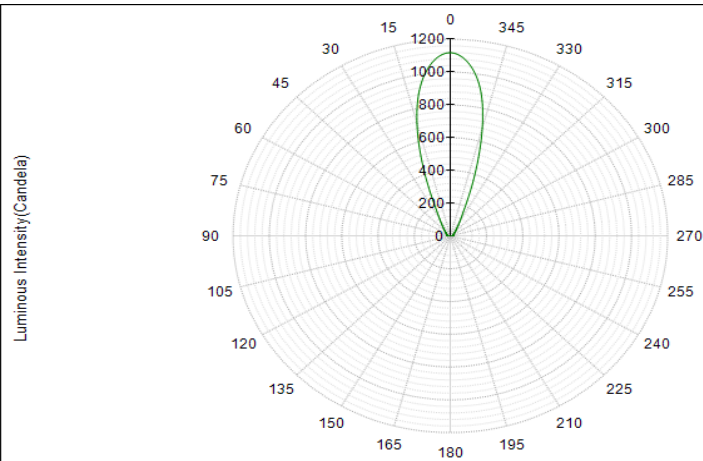
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Intensity Distribution - Polar Curve

Intensity Radar Plot (ray trace to infinity)



Luminous Intensity Distribution



Cone Diagram

0.5	0.31 0.31	E(0°) E(C90) E(C0)	17.0° 17.1°	4468 1963 1965
1.0	0.61 0.62	E(0°) E(C90) E(C0)	17.0° 17.1°	1117 491 491
1.5	0.92 0.92	E(0°) E(C90) E(C0)	17.0° 17.1°	496 218 218
2.0	1.22 1.23	E(0°) E(C90) E(C0)	17.0° 17.1°	279 123 123
2.5	1.53 1.54	E(0°) E(C90) E(C0)	17.0° 17.1°	179 79 79
3.0	1.83 1.85	E(0°) E(C90) E(C0)	17.0° 17.1°	124 55 55

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

— C0 - C180 (Half value angle: 34.2°)
— C90 - C270 (Half value angle: 34.0°)

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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	14.6	15.5	14.8	15.7	15.9	14.7	15.5	14.9	15.8	16.0
	3H	16.0	16.8	16.3	17.0	17.3	15.9	16.7	16.2	16.9	17.2
	4H	16.8	17.6	17.1	17.8	18.1	16.6	17.4	17.0	17.7	17.9
	6H	17.6	18.3	17.9	18.6	18.9	17.5	18.2	17.9	18.5	18.8
	8H	17.8	18.5	18.2	18.8	19.1	17.9	18.6	18.3	18.9	19.2
	12H	18.1	18.7	18.4	19.0	19.3	18.3	18.9	18.6	19.2	19.6
4H	2H	15.0	15.7	15.3	16.0	16.3	15.1	15.8	15.4	16.1	16.3
	3H	16.7	17.3	17.0	17.7	18.0	16.6	17.2	16.9	17.5	17.8
	4H	17.7	18.3	18.1	18.6	19.0	17.6	18.2	18.0	18.5	18.9
	6H	18.8	19.3	19.2	19.6	20.0	18.8	19.3	19.2	19.6	20.0
	8H	19.2	19.6	19.6	20.0	20.4	19.3	19.7	19.7	20.1	20.5
	12H	19.5	19.9	19.9	20.3	20.7	19.7	20.1	20.2	20.5	20.9
8H	4H	18.1	18.5	18.5	18.9	19.3	17.9	18.4	18.4	18.8	19.2
	6H	19.3	19.6	19.7	20.1	20.5	19.4	19.7	19.8	20.1	20.6
	8H	19.8	20.1	20.3	20.6	21.0	20.1	20.4	20.5	20.8	21.3
	12H	20.3	20.5	20.8	21.0	21.5	20.7	20.9	21.2	21.4	21.9
12H	4H	18.1	18.5	18.6	18.9	19.4	18.0	18.4	18.4	18.8	19.2
	6H	19.4	19.7	19.8	20.1	20.6	19.4	19.8	19.9	20.2	20.7
	8H	20.0	20.2	20.4	20.7	21.2	20.2	20.5	20.7	20.9	21.4
Variation of the observer position for the luminaire distance S											
S = 1.0H		+0.2 / -0.2					+0.2 / -0.2				
S = 1.5H		+0.4 / -0.5					+0.6 / -0.4				
S = 2.0H		+0.8 / -0.9					+1.1 / -0.8				
Standard table		BK07					BK07				
Correction summand		2.3					2.4				
Corrected glare indices referring to 529lm total luminous flux											

Sample Pictures