



REPORT

25800 COMMERCENTRE DRIVE, LAKE FOREST, CA 92630

Project No. G102745412

Date: October 6, 2016

REPORT NO. 102745412LAX-013

TEST OF ONE LED MOVING HEAD BEAM

MODEL NO. SIX PAR Z19 IP RED

RENDERED TO

ELATION LIGHTING
6122 S. EASTERN AVE.
COMMERCE, CA 90040

TEST: Electrical and Photometric tests as required to the IESNA test standard.

STATEMENT OF LIMITATION: This report must not be used by the client to claim product certification, approval, or endorsement by A2LA, NIST, or any agency of the federal government.

AUTHORIZATION: The testing performed was authorized by signed quote number Qu-00648726-1.

STANDARDS USED: The following American National Standards or Illuminating Engineering Society of North America Test Guides were used in part or totally to test each specimen:

IESNA LM-79 - 2008: Electrical and Photometric Measurements of Solid State Lighting

DESCRIPTION OF SAMPLE: The client submitted one production sample of model number SIX PAR Z19 IP RED. The sample was received by Intertek on September 14, 2016, in undamaged condition and one sample was tested as received. The sample designation was LAN1609141019-004.

DATES OF TESTS: September 27, 2016



SUMMARY

Model No.:	SIX PAR Z19 IP RED
Description:	LED Moving Head Beam

Criteria	Result
Total Lumen Output (Lumens)	261.7
Total Power (W)	60.07
Luminaire Efficacy (LPW)	4.36
Power Factor	0.943

EQUIPMENT LIST

Equipment Used	Model Number	Control Number	Last Date Calibrated	Calibration Due Date	Date Used
LSI High Speed Mirror Goniometer	6440T	000943	09/12/16	10/12/16	09/27/16
Elgar Power Supply	CW1251	000944	VBU	VBU	09/27/16
Yokogawa Power Analyzer	WT210	000945	12/04/15	12/04/16	09/27/16
Temp. & RH Meter	971	001380	12/17/15	12/17/16	09/27/16
Extech Instruments Stop Watch	365510	001379	11/19/15	11/19/16	09/27/16
Tape Measure	C1-25	000915	12/04/15	12/04/16	09/27/16
Protractor	33840	000087	12/22/15	12/22/16	09/27/16



TEST METHODS

Seasoning in Sample Orientation – LED Products

No seasoning was performed in accordance with IESNA LM-79.

Photometric and Electrical Measurements – Distribution Method

A LSI Type C High Speed Model 6440 Mirror Goniometer was used to measure the intensity (candelas) at each angle of distribution for each sample.

Ambient temperature was measured equal to the height of the sample mounted on the Goniometer equipment. Each sample was operated at input rated voltage in its designated orientation. Each sample was allowed to stabilize for at least thirty minutes before measurements were made. Electrical measurements including voltage, current, and power were measured using the Yokogawa Power Analyzer.

Some graphics were created with Photometrics Plus software.

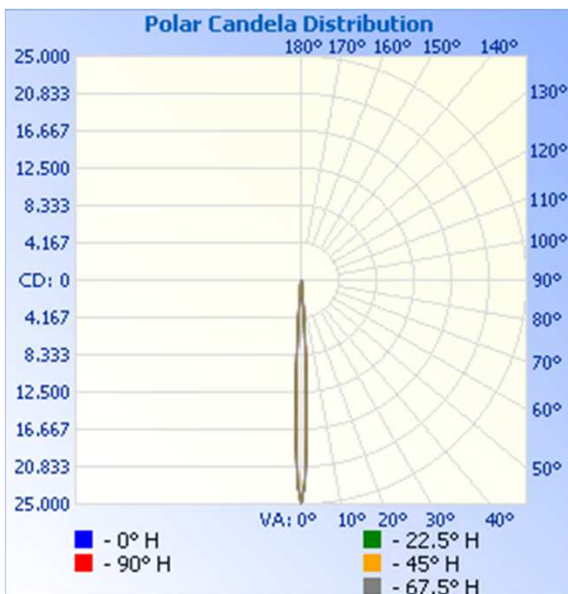
RESULTS OF TEST

Photometric and Electrical Measurements at Ambient Temperature (25°C +/- 1°C) – Distribution Method

Intertek Sample No.	Base Orientation	Input Voltage {Vac}	Input Current (mA)	Input Power (Watts)	Input Power Factor	Absolute Luminous Flux (Lumens)	Lumen Efficacy (Lumens Per Watt)
LAN1609141019-004	UP	120.0	530.5	60.07	0.943	261.7	4.36

Intensity (Candlepower) Summary at 25°C - Candelas

Angle	0	22.5	45	67.5	90
0	24868	24868	24868	24868	24868
5	1867	1772	2033	2090	2090
10	113	114	116	117	116
15	10	12	16	13	11
20	0	0	0	0	0
25	0	0	0	0	0
30	0	0	0	0	0
35	0	0	0	0	0
40	0	0	0	0	0
45	0	0	0	0	0
50	0	0	0	0	0
55	0	0	0	0	0
60	0	0	0	0	0
65	0	0	0	0	0
70	0	0	0	0	0
75	0	0	0	0	0
80	0	0	0	0	0
85	0	0	0	0	0
90	0	0	0	0	0



RESULTS OF TEST

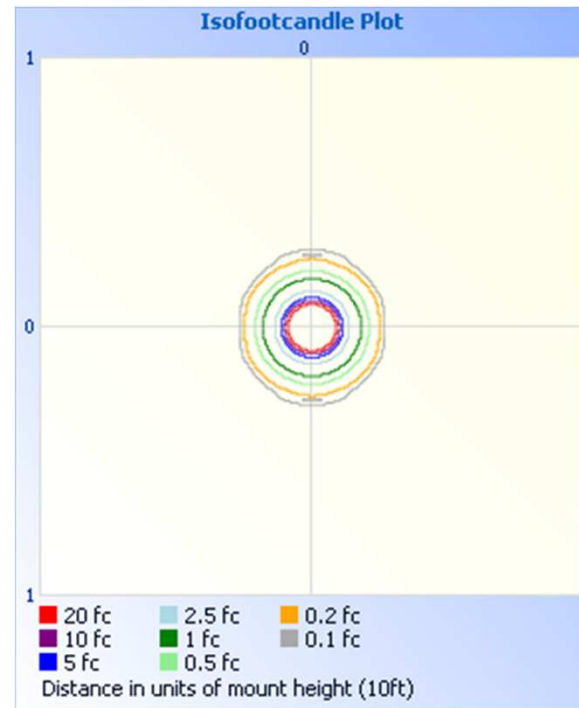
Illumination Plots

Mounting Height: 10 ft.

Illuminance - Cone of Light

Illuminance at a Distance			
	Center Beam fc	Beam Width	
2.0ft	6,217.0 fc	0.2 ft	0.2 ft
4.0ft	1,554.3 fc	0.4 ft	0.4 ft
6.0ft	690.8 fc	0.6 ft	0.6 ft
8.0ft	388.6 fc	0.8 ft	0.8 ft
10.0ft	248.7 fc	1.0 ft	1.0 ft
<div> <div style="display: inline-block; width: 10px; height: 10px; background-color: blue; margin-right: 5px;"></div> Vert. Spread: 5.5° </div> <div> <div style="display: inline-block; width: 10px; height: 10px; background-color: red; margin-right: 5px;"></div> Horiz. Spread: 5.6° </div>			

Isoillumination Plot



Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens	% Luminaire
0-30	261.7	100.0
0-40	261.7	100.0
0-60	261.7	100.0
60-90	0.0	0.0
0-90	261.7	100.0
90-180	0.0	0.0
0-180	261.7	100.0

Zonal Lumens and Percentages at 25°C

Zone	Lumens	% Luminaire
0-10	255.5	97.6
10-20	6.2	2.4
20-30	0.0	0.0
30-40	0.0	0.0
40-50	0.0	0.0
50-60	0.0	0.0
60-70	0.0	0.0
70-80	0.0	0.0
80-90	0.0	0.0

PICTURE (not to scale)



CONCLUSION

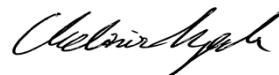
The results tabulated in this report are representative of the actual test samples submitted for this report only. The data is provided to the client for further evaluation. Compliance to the referenced specification requirements was not determined in this report.

In Charge Of Tests:



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Lighting Division

Report Reviewed By:



Vladimir Kozak
Engineering Supervisor
Lighting Division

Attachment: None