



REPORT

25800 COMMERCE DRIVE, LAKE FOREST, CA 92630

Project No. G102697884

Date: August 25, 2016

REPORT NO. 102697884LAX-014

TEST OF ONE LED MOVING HEAD BEAM

MODEL NO. FUZE PAR Z60IP FULL ON ZOOM IN

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.

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 FUZE PAR Z60IP FULL ON ZOOM IN. The sample was received by Intertek on August 11, 2016, in undamaged condition and one sample was tested as received. The sample designation was LAN1608110839-003.

DATES OF TESTS: August 16, 2016

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SUMMARY

Model No.:	FUZE PAR Z60IP FULL ON ZOOM IN
Description:	LED Moving Head Beam

Criteria	Result
Total Lumen Output (Lumens)	302.9
Total Power (W)	60.09
Luminaire Efficacy (LPW)	5.041

EQUIPMENT LIST

Equipment Used	Model Number	Control Number	Last Date Calibrated	Calibration Due Date
LSI High Speed Mirror Goniometer	6440T	000943	08/15/16	09/15/16
Elgar Power Supply	CW1251	000944	VBU	VBU
Yokogawa Power Analyzer	WT210	000945	12/04/15	12/04/16
Temp. & RH Meter	971	001178	12/18/15	12/18/16
Extech Instruments Stop Watch	365510	001379	11/19/15	11/19/16
Tape Measure	C1-25	000915	12/04/15	12/04/16
Empire Magnetic Level	581-9	001610	VBU	VBU

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 (cont'd)

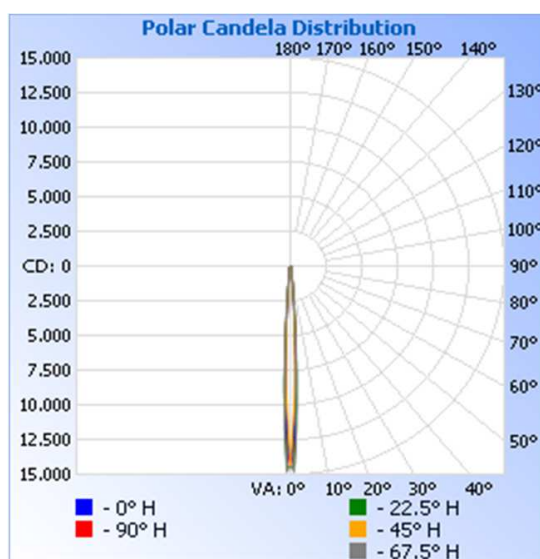
Photometric and Electrical Measurements at Ambient Temperature (25°C +/- 1°C) – Distribution Method

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)
LAN1608110839-003	UP	120.0	532.5	60.09	0.949	302.9	5.041

Intensity (Candlepower) Summary at 25°C - Candelas

Maximum Candela Value: 14,799.2

Angle	0	22.5	45	67.5	90
0	14435	14435	14435	14435	14435
5	2332	2884	2271	3063	2688
10	370	457	349	480	427
15	166	210	163	213	195
20	87	112	77	105	99
25	34	46	24	45	42
30	0	9	0	12	8
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 (cont'd)

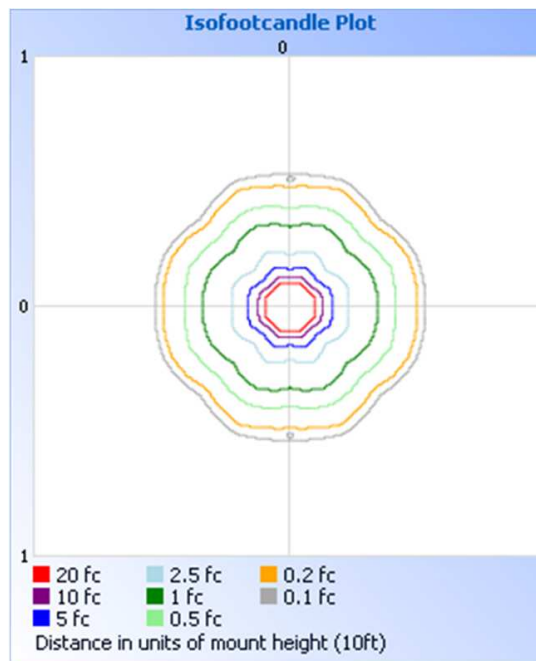
Illumination Plots

Mounting Height: 10 ft.

Illuminance - Cone of Light

Illuminance at a Distance			
	Center Beam fc	Beam Width	
2.0ft	3,608.8 fc	0.2 ft	0.2 ft
4.0ft	902.2 fc	0.4 ft	0.4 ft
6.0ft	401.0 fc	0.6 ft	0.6 ft
8.0ft	225.5 fc	0.8 ft	0.9 ft
10.0ft	144.4 fc	1.0 ft	1.1 ft
<div> <div>■</div> Vert. Spread: 5.7° <div>■</div> Horiz. Spread: 6.2° </div>			

Isoillumination Plot



Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens	% Luminaire
0-30	302.6	99.9
0-40	302.9	100.0
0-60	302.9	100.0
60-90	0.0	0.0
0-90	302.9	100.0
90-180	0.0	0.0
0-180	302.9	100.0

Zonal Lumens and Percentages at 25°C

Zone	Lumens	% Luminaire
0-10	228.9	75.6
10-20	55.8	18.4
20-30	17.9	5.9
30-40	0.3	0.1
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:



Ameet Alawi
Technician
Lighting Division

Attachment: None

Report Reviewed By:



Kenda Branch
Lighting Performance Team Lead
Lighting Division