



REPORT

25800 COMMERCE DRIVE, LAKE FOREST, CA 92630

Project No. G102328456

Date: July 29, 2016

REPORT NO. 102328456LAX-084

TEST OF ONE LED MOVING HEAD BEAM

MODEL NO. ZW37 ZOOM OUT

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 prototype sample of model number ZW37 ZOOM OUT. The sample was received by Intertek on July 27, 2016, in undamaged condition and one sample was tested as received. The sample designation was LAN1607271107-003.

DATES OF TESTS: July 29, 2016

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SUMMARY

Model No.:	ZW37 ZOOM OUT
Description:	LED Moving Head Beam

Criteria	Result
Total Lumen Output (Lumens)	6703
Total Power (W)	463.8
Luminaire Efficacy (LPW)	14.45

EQUIPMENT LIST

Equipment Used	Model Number	Control Number	Last Date Calibrated	Calibration Due Date
LSI High Speed Mirror Goniometer	6440T	000943	07/13/16	08/13/16
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)

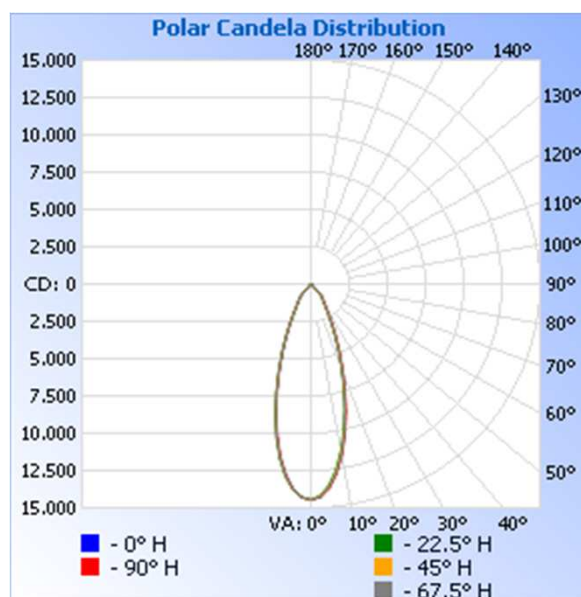
Photometric and Electrical Measurements at Ambient Temperature (25°C +/- 1°C) – Distribution Method

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)
LAN1607271107-003	UP	120.0	3924	463.8	0.985	6703	14.45

Intensity (Candlepower) Summary at 25°C - Candelas

Maximum Candela Value: 14,456.3

Angle	0	22.5	45	67.5	90
0	14456	14456	14456	14456	14456
5	13607	13489	13598	13667	13741
10	11471	11288	11457	11580	11651
15	8603	8447	8597	8738	8837
20	5839	5707	5837	5975	6060
25	3655	3569	3669	3785	3866
30	2129	2125	2202	2292	2359
35	1412	1370	1420	1477	1496
40	1115	1094	1131	1175	1177
45	148	138	136	169	179
50	36	43	34	37	40
55	18	29	27	33	25
60	21	11	12	14	6
65	11	9	13	10	15
70	0	8	11	10	12
75	0	0	3	6	4
80	0	3	4	2	4
85	0	10	7	5	4
90	0	0	0	0	0

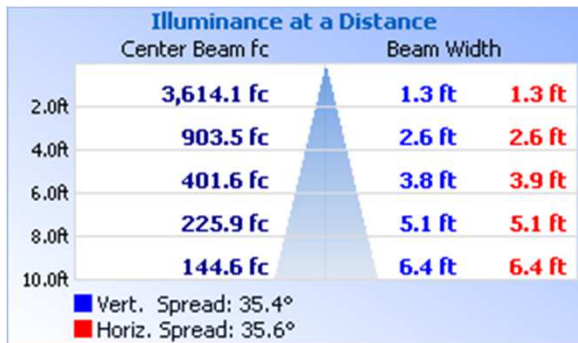


RESULTS OF TEST (cont'd)

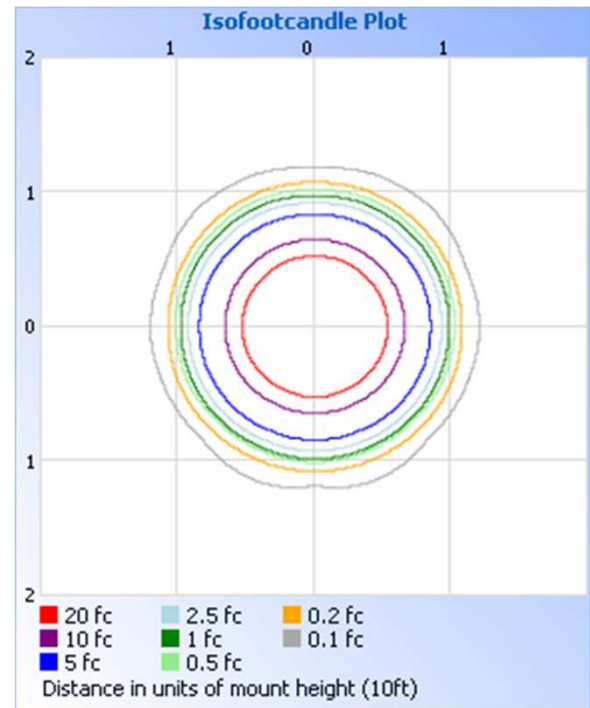
Illumination Plots

Mounting Height: 10 ft.

Illuminance - Cone of Light



Isoillumination Plot



Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens	% Luminaire
0-30	5411	80.7
0-40	6377	95.1
0-60	6685	99.7
60-90	17.8	0.3
0-90	6703	100.0
90-180	0.0	0.0
0-180	6703	100.0

Zonal Lumens and Percentages at 25°C

Zone	Lumens	% Luminaire
0-10	1237	18.5
10-20	2407	35.9
20-30	1767	26.4
30-40	966.7	14.4
40-50	284.3	4.2
50-60	23.4	0.3
60-70	9.9	0.1
70-80	4.8	0.1
80-90	3.1	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:



Melanie Brittain
Associate Engineer
Lighting Division