



# REPORT

25800 COMMERCE DRIVE, LAKE FOREST, CA 92630

Project No. G102328456

Date: July 29, 2016

REPORT NO. 102328456LAX-083

TEST OF ONE LED MOVING HEAD BEAM

MODEL NO. ZW37 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 prototype sample of model number ZW37 ZOOM IN. 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 28, 2016

---

This report is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this report. Only the Client is authorized to copy or distribute this report and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results in this report are relevant only to the sample tested. This report by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program.



## SUMMARY

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

Criteria	Result
Total Lumen Output (Lumens)	5807
Total Power (W)	463.9
Luminaire Efficacy (LPW)	12.52

## 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)

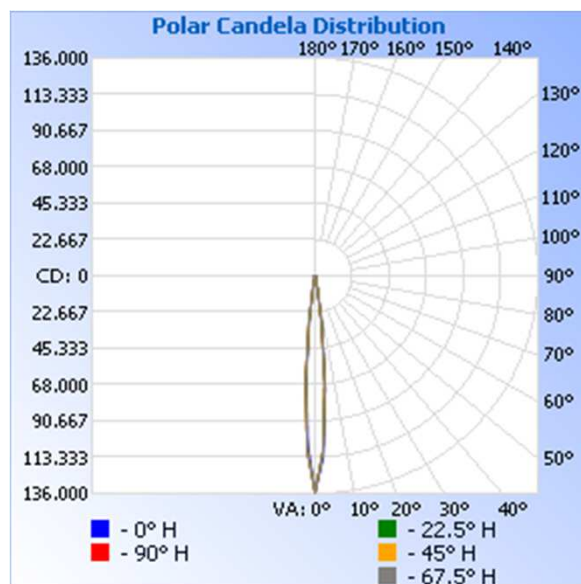
### Photometric and Electrical Measurements at Ambient Temperature (25°C +/- 1°C) – Distribution Method

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	3926	463.9	0.985	5807	12.52

### Intensity (Candlepower) Summary at 25°C - Candelas

Maximum Candela Value: 135,028.4

Angle	0	22.5	45	67.5	90
0	135028	135028	135028	135028	135028
5	70668	67002	67080	67183	67420
10	8653	7817	8077	8102	8125
15	856	855	858	867	801
20	378	322	356	374	421
25	205	342	353	262	316
30	283	506	379	372	244
35	283	420	250	361	366
40	352	312	409	378	518
45	316	384	303	324	412
50	330	241	379	237	363
55	155	249	280	196	271
60	76	171	115	100	235
65	34	137	150	101	57
70	48	17	80	67	129
75	40	77	40	79	18
80	0	34	48	54	54
85	6	0	30	35	14
90	0	0	0	0	0



## RESULTS OF TEST (cont'd)

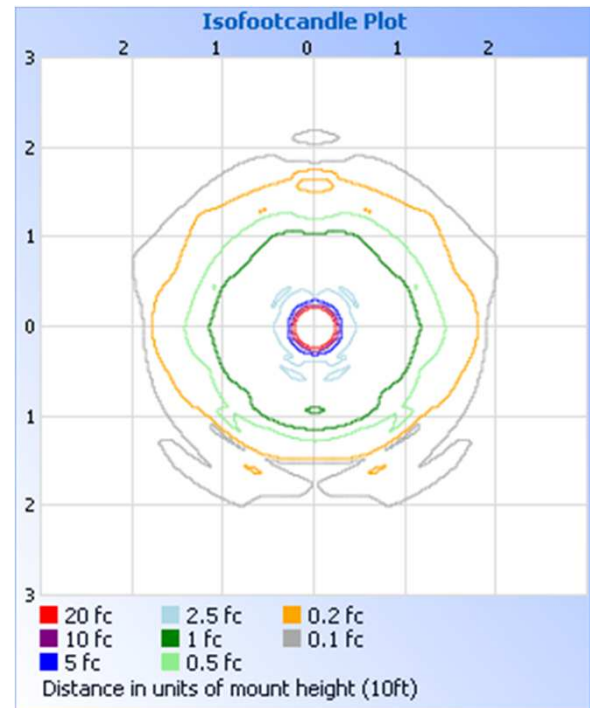
### Illumination Plots

Mounting Height: 10 ft.

Illuminance - Cone of Light



Isoillumination Plot



Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens	% Luminaire
0-30	4928	84.9
0-40	5155	88.8
0-60	5609	96.6
60-90	198.5	3.4
0-90	5807	100.0
90-180	0.0	0.0
0-180	5807	100.0

Zonal Lumens and Percentages at 25°C

Zone	Lumens	% Luminaire
0-10	4343	74.8
10-20	431.6	7.4
20-30	152.8	2.6
30-40	227.9	3.9
40-50	276.3	4.8
50-60	177.1	3.0
60-70	91.9	1.6
70-80	68.3	1.2
80-90	38.3	0.7

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