



8165 E Kaiser Blvd. Anaheim, CA 92808  
p. 714.282.2270  
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Test #: L08124209

Date: 9/11/2012



NVLAP LAB CODE 200927-0

**Test Report:** L08124209

**Model Number:** Elar Quad Strip

**Report Prepared For:** ELATION LIGHTING  
6122 S. EASTERN AVE. COMMERCE, CA 90040 USA

**Test:** Electrical and Photometric tests as required by the IESNA test standards.

**Standards Used:** Appropriate part or all test guidelines were used for test performed:  
*IESNA LM79: 2008* Approved Methods for Electrical and Photometric Measurements of Solid-State Lighting Products  
*ANSI NEMA ANSLG C78.377: 2008* Specification of the Chromaticity of Solid State Lighting Products

**Description of Sample:** Client submitted the sample. Fixture catalog number is Elar Quad Strip. Tested with WHITE on. Received in working and undamaged condition. No modifications were necessary.

**Sample Arrival Date:** 8/17/12

**Date of Tests:** 8/29/12 - 9/11/12

**Seasoning of Sample SSL:** No seasoning was performed in accordance with IESNA LM-79.

#### Equipment List

Equipment Used	Model No	Stock No	Calibration Due Date
Chroma Programmable AC Source	61604	PS-AC02	--
Yokogawa Digital Power Meter	WT210	MT-EL06-S1	01/04/13
Xitron Power Analysis System	2503AH	MT-EL01	01/09/13
Fluke Digital Thermometer	52k/J	MT-TP02-GC	01/04/13
LLI Type C Goniophotometer System	RMG-C-MKII	CD-LL04-GC	--
LLI 2M Sphere	2MR97	CD-SN03-S2	--
LLI Spectroradiometer	SPR-3000	MT-SC01-S2	Before Use

### LM-79 Test Summary

<b>Manufacturer:</b>	ELATION LIGHTING
<b>Model Number:</b>	Elar Quad Strip
<b>Total Lumens:</b>	812.32
<b>Input Voltage (VAC):</b>	120.00
<b>Input Current (Amp):</b>	0.34
<b>Input Power (W):</b>	38.51
<b>Input Power Factor:</b>	0.94
<b>Total Harmonic Distortion @ 120V(%)</b> :	N/A
<b>Total Harmonic Distortion @ 277V(%)</b> :	N/A
<b>Efficacy:</b>	21.09
<b>Color Rendering Index (CRI):</b>	82.66
<b>Correlated Color Temperature (CCT):</b>	3973
<b>Chromaticity Coordinate x:</b>	0.3788
<b>Chromaticity Coordinate y:</b>	0.3674
<b>Ambient Temperature (°F):</b>	77
<b>Stabilization Time (Hours):</b>	0:40
<b>Total Operating Time (Hours):</b>	1:20

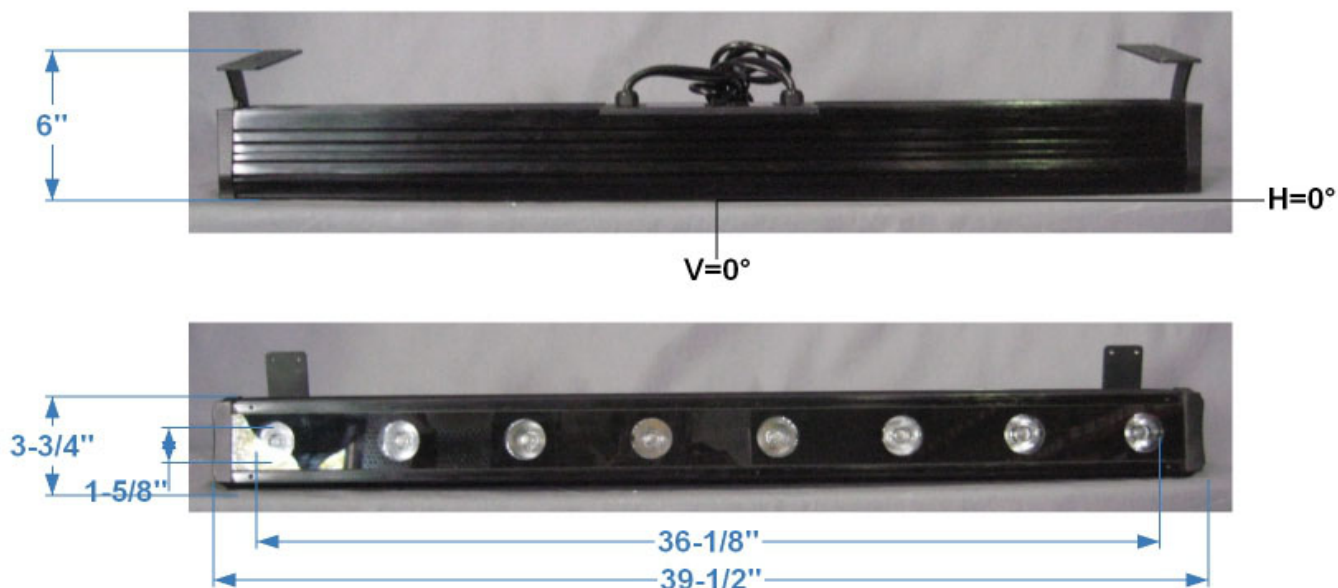
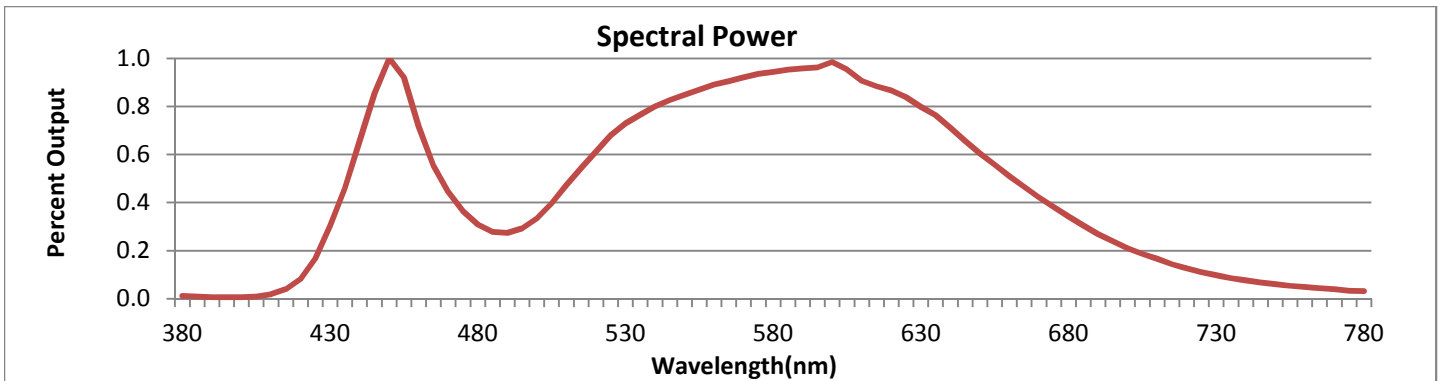


FIG. 1 LUMINAIRE



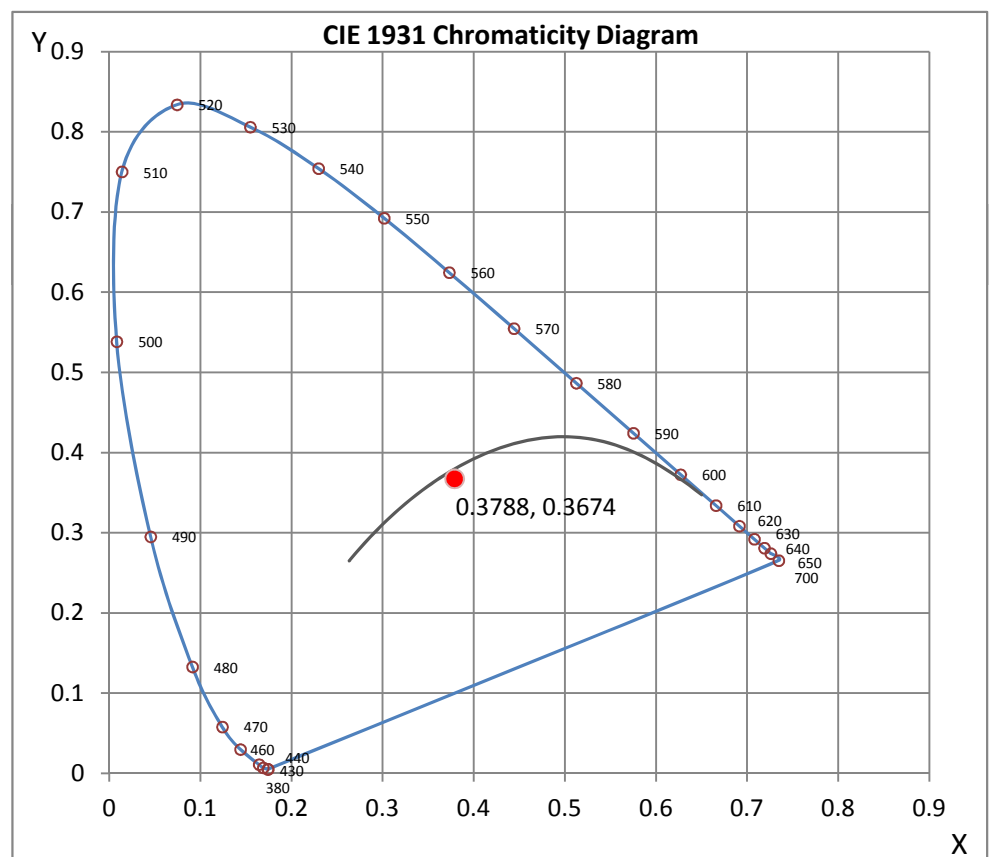
Wavelength	W/m <sup>2</sup> nm	440	1.3883	510	1.0034	580	2.0010	650	1.2808	720	0.2682
380	0.0236	450	2.1188	520	1.2984	590	2.0310	660	1.0801	730	0.2067
390	0.0120	460	1.5183	530	1.5459	600	2.0883	670	0.8932	740	0.1624
400	0.0121	470	0.9419	540	1.6960	610	1.9207	680	0.7234	750	0.1285
410	0.0390	480	0.6549	550	1.7976	620	1.8384	690	0.5693	760	0.1044
420	0.1750	490	0.5800	560	1.8868	630	1.6918	700	0.4445	770	0.0846
430	0.6414	500	0.7063	570	1.9515	640	1.5054	710	0.3508	780	0.0671

#### CRI & CCT

x	0.3788
y	0.3674
u'	0.2278
v'	0.4972
CRI	82.66
CCT	3973
Duv	-0.00396

#### R Values

R1	82.24
R2	87.70
R3	89.19
R4	81.48
R5	81.05
R6	80.86
R7	87.56
R8	71.24
R9	25.03
R10	67.94
R11	77.58
R12	59.71
R13	83.27
R14	93.37





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## Test Methods

### Photometric Measurements - Goniophotometer

A Custom Light Laboratory Type C Rotating Mirror Goniophotometer was used to measure candelas(intensity) at each angle of distribution as defined by IESNA for the appropriate fixture type.

Ambient temperature is set to 25°C and is measured from the center of the fixture, within 1ft from the outside of the fixture. Temperature is maintained at 25°C throughout the testing process and the sample is stabilized for at least 30mins and longer as necessary for the sample to achieve stabilization.

Electrical measurements are measured using the listed equipment.

### Spectral Measurements - Integrating Sphere

A Sensing Spectroradiometer SPR-3000, in conjunction with Light Laboratory 2 meter integrating sphere was used to measure chromaticity coordinates, correlated color temperature(CCT) and the color rendering index(CRI) for each sample.

Ambient temperature is set to 25°C and is measured from the center of the fixture, within 1ft from the outside of the fixture. Temperature is maintained at 25°C throughout the testing process and the sample is stabilized for at least 30mins and longer as necessary for the sample to achieve stabilization.

Electrical measurements are measured using the listed equipment.

Test Report Released by:

Joseph Shin  
Engineering Manager

Test Report Reviewed by:

Steve Kang  
Quality Assurance

*\*Attached are photometric data reports. Total number of pages: 8*



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## Photometric Test Report

### IES FLOOD REPORT

PHOTOMETRIC FILENAME : L08124209.IES

### DESCRIPTIVE INFORMATION (From Photometric File)

IESNA:LM-63-2002  
[TEST] L08124209  
[TESTLAB] LIGHT LABORATORY, INC.  
[ISSUEDATE] 9/11/2012  
[MANUFAC] ELATION LIGHTING  
[LUMCAT] Elar Quad STRIP  
[LUMINAIRE] 39-1/2"L. X 3-3/4"W. X 6"H. ELAR QUAD STRIP LUMINAIRE  
[MORE] EIGHT 10W CREE QUAD RGBW LED WITH 11° BEAM ANGLE OPTICS  
[MORE] TESTED WITH ONLY WHITE ON.  
[BALLASTCAT] N/A  
[BALLAST] 100-240VAC 50/60Hz  
[LAMPPOSITION] 0,0  
[LAMPCAT] 10W QUAD RGBW LED  
[OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND  
[MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.  
[INPUT] 120VAC, 38.51W  
[TEST PROCEDURE] IESNA:LM-79-08

Note: Candela values converted from Type-C to Type-B

### CHARACTERISTICS

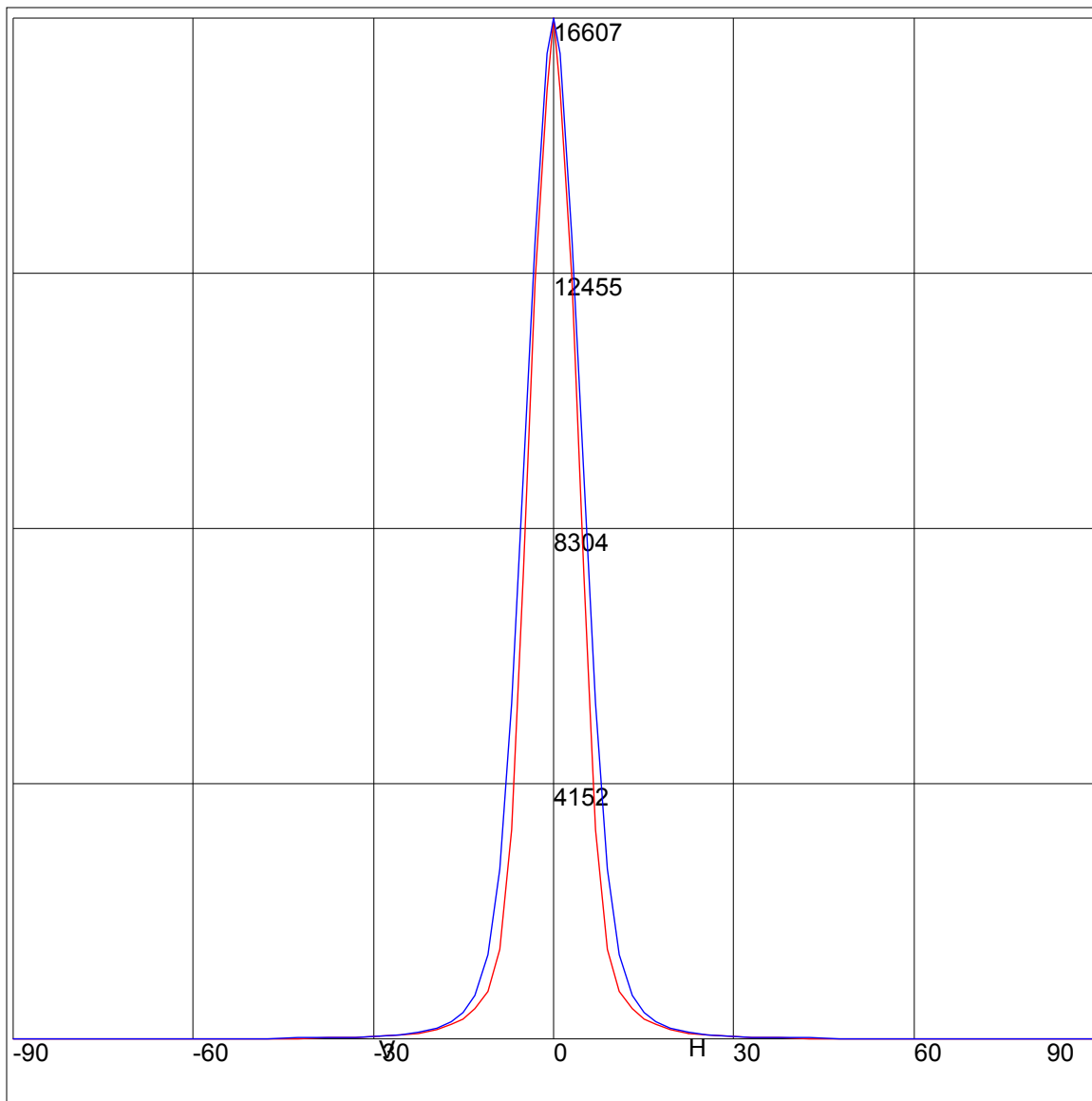
NEMA Type	1 H x 2 V
Maximum Candela	16607
Maximum Candela Angle	0H 0V
Horizontal Beam Angle (50%)	9.4
Vertical Beam Angle (50%)	10.9
Horizontal Field Angle (10%)	17.6
Vertical Field Angle (10%)	21.2
Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Beam Lumens	293
Beam Efficiency	N.A.
Field Lumens	565
Field Efficiency	N.A.
Spill Lumens	247
Luminaire Lumens	812
Total Efficiency	N.A.
Total Luminaire Watts	38.51
Ballast Factor	1.00

**IES FLOOD REPORT**  
**PHOTOMETRIC FILENAME : L08124209.IES**

**AXIAL CANDELA**

DEG.	HOR.	DEG.	VERT.
90	0	90	0
85	9	85	9
75	9	75	10
65	11	65	12
55	13	55	14
47.5	16	47.5	17
42.5	19	42.5	21
37.5	26	37.5	28
33	34	33	37
29	47	29	51
25.5	68	25.5	75
22.5	99	22.5	113
19.5	156	19.5	181
17	235	17	287
15	333	15	431
13	493	13	722
11	778	11	1370
9	1456	9	2769
7	3412	7	5457
5	7579	5	9175
3	12346	3	13013
1	15420	1	16030
0	16607	0	16607
-1	15420	-1	16030
-3	12346	-3	13013
-5	7579	-5	9175
-7	3412	-7	5457
-9	1456	-9	2769
-11	778	-11	1370
-13	493	-13	722
-15	333	-15	431
-17	235	-17	287
-19.5	156	-19.5	181
-22.5	99	-22.5	113
-25.5	68	-25.5	75
-29	47	-29	51
-33	34	-33	37
-37.5	26	-37.5	28
-42.5	19	-42.5	21
-47.5	16	-47.5	17
-55	13	-55	14
-65	11	-65	12
-75	9	-75	10
-85	9	-85	9
-90	0	-90	0

AXIAL CANDELA DISPLAY

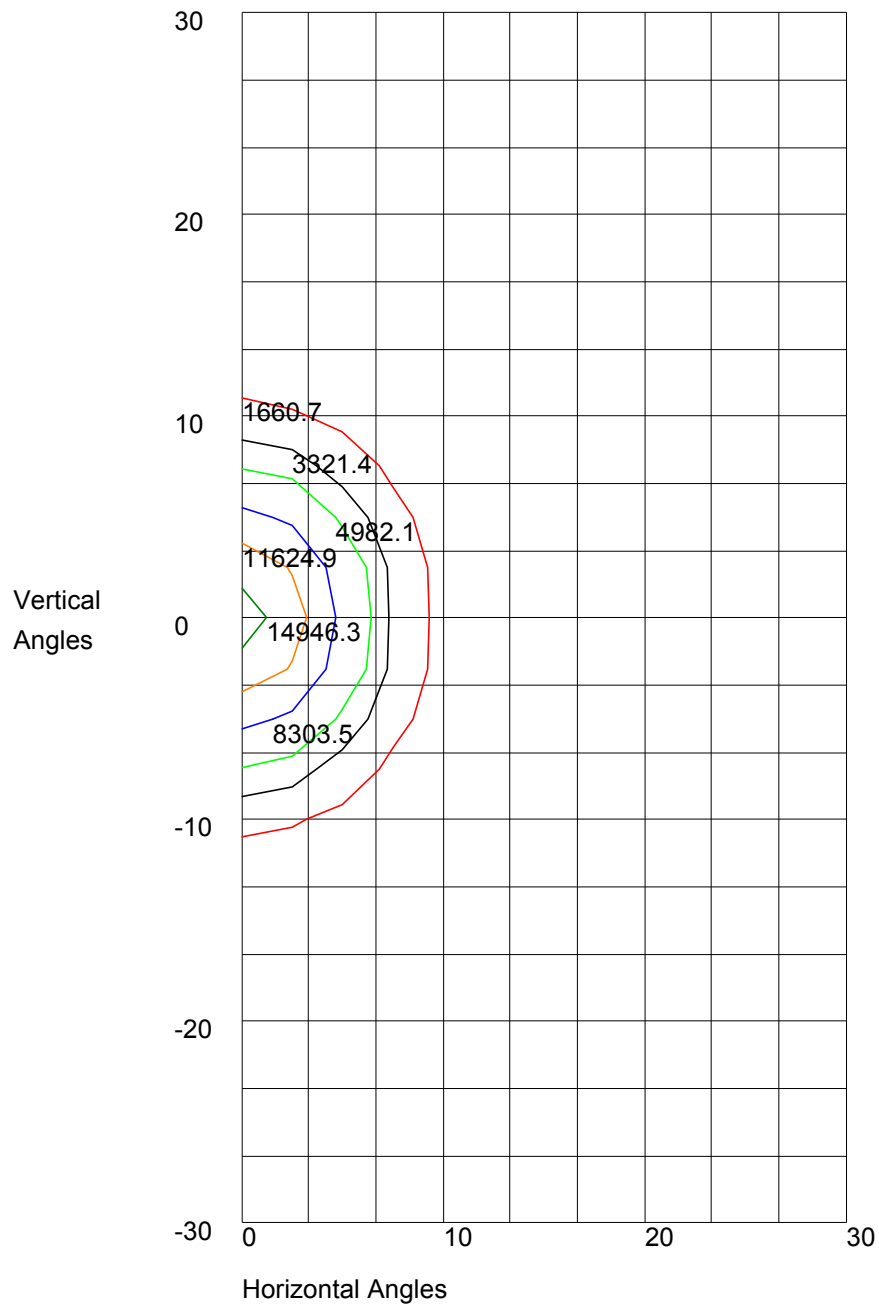


Maximum Candela = 16607 Located At Horizontal Angle = 0, Vertical Angle = 0

H - Horizontal Axial Candela

V - Vertical Axial Candela

ISOCANDELA CURVES



Maximum Candela = 16607 Located At Horizontal Angle = 0, Vertical Angle = 0  
50% Maximum Candela = 8303.5  
10% Maximum Candela = 1660.7