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Report No: L071806201



**Report No:** L071806201

**Issue Date:** 8/7/2018

**Report Prepared For:** Atreum Lighting  
412 N Main St Suite 100, Buffalo, WY 82834

**Model Number:** M120

**Test:** Photosynthetically active radiation (PAR) & Electrical measurement

**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  
*ANSI C82.77:2002:* Harmonic Emission Limits-Related Quality Requirements for Lighting Equipment

**Description of Sample:** Client submitted the sample. Received in working and undamaged condition. No modifications were necessary.

**Testing Condition:** Fixture is tested with no special conditions.

**Sample Arrival Date:** 8/2/18

**Date of Tests:** 8/3/18 - 8/7/18

**Seasoning of Sample:** 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-S4	1/9/19
BK PRECISION	1747	PS-DC04	1/10/19
Fluke Digital Thermometer	52K/J	MT-TP05	1/10/19
LLI 2M Sphere	2MR97	CD-SN03-S2	--
LLI Spectroradiometer	SPR-3000	MT-SC01-S2	Before Use

\*All Results in accordance to IESNA LM-79-2008: Approved Method for the Electrical and Photometric Testing of Solid-State Lighting.

**Test Summary**

<b>Manufacturer:</b>	Atreum Lighting	
<b>Model Number:</b>	M120	
<b>Driver Model Number:</b>	MEAN WELL HLG-120H-54A	
<b>Total PPF (μmol/s)</b>	298.00	* Measured range: 400nm - 700nm
<b>Total Radiant Flux(W):</b>	63.44	* Measured range: 380nm - 780nm
<b>Total Lumens:</b>	21275.64	* Measured range: 380nm - 780nm
<b>Luminous Efficacy (lm/W):</b>	170.78	
<b>PPF Efficacy (μmol/Joule):</b>	2.39	
<b>Input Voltage (VAC/60Hz):</b>	120.00	
<b>Input Current (Amp):</b>	1.04	
<b>Input Power (W):</b>	124.58	
<b>Input Power Factor:</b>	0.99	
<b>Current ATHD @ 120V(%):</b>	8%	
<b>Current ATHD @ 277V(%):</b>	N/A	
<b>Thermocouple #1 (Fig 2) (°C):</b>	58.8	
<b>Ambient Temperature (°C):</b>	25.0	
<b>Stabilization Time (Hours):</b>	0:30	
<b>Total Operating Time (Hours):</b>	1:10	

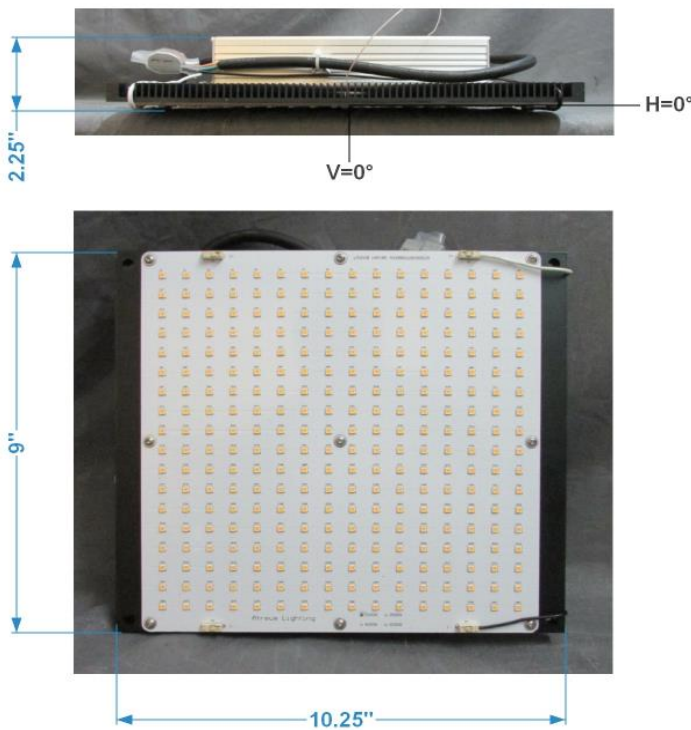
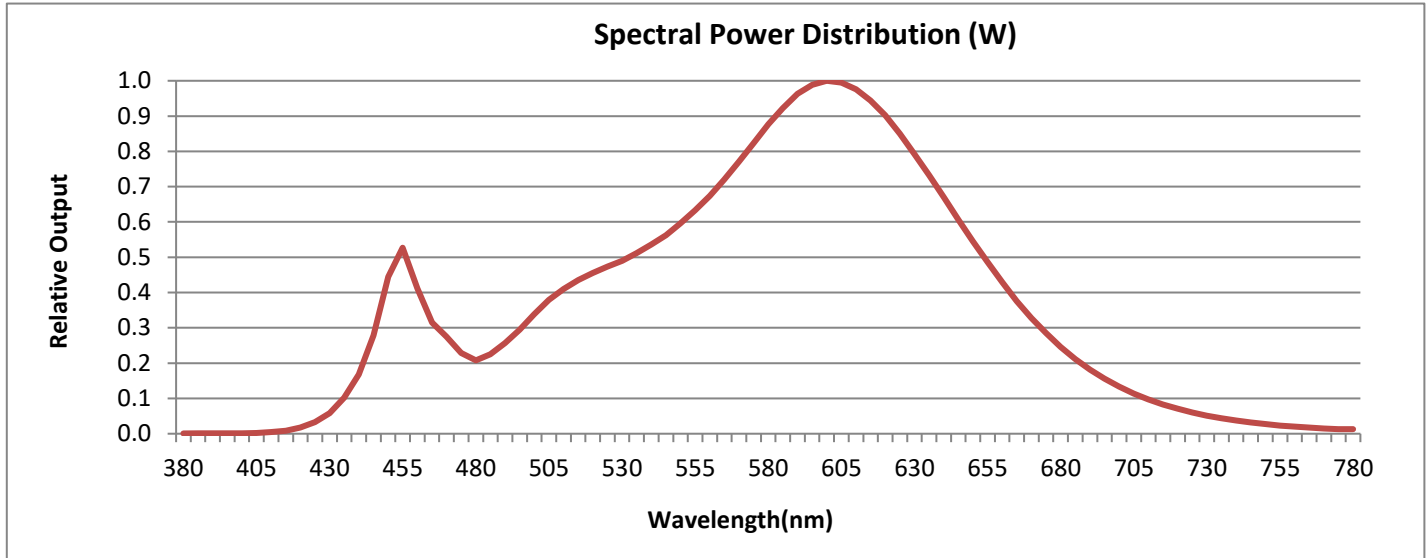


FIG. 1 LUMINAIRE



FIG. 2 THERMOCOUPLE #1

\*All Results in accordance to IESNA LM-79-2008: Approved Method for the Electrical and Photometric Testing of Solid-State Lighting.

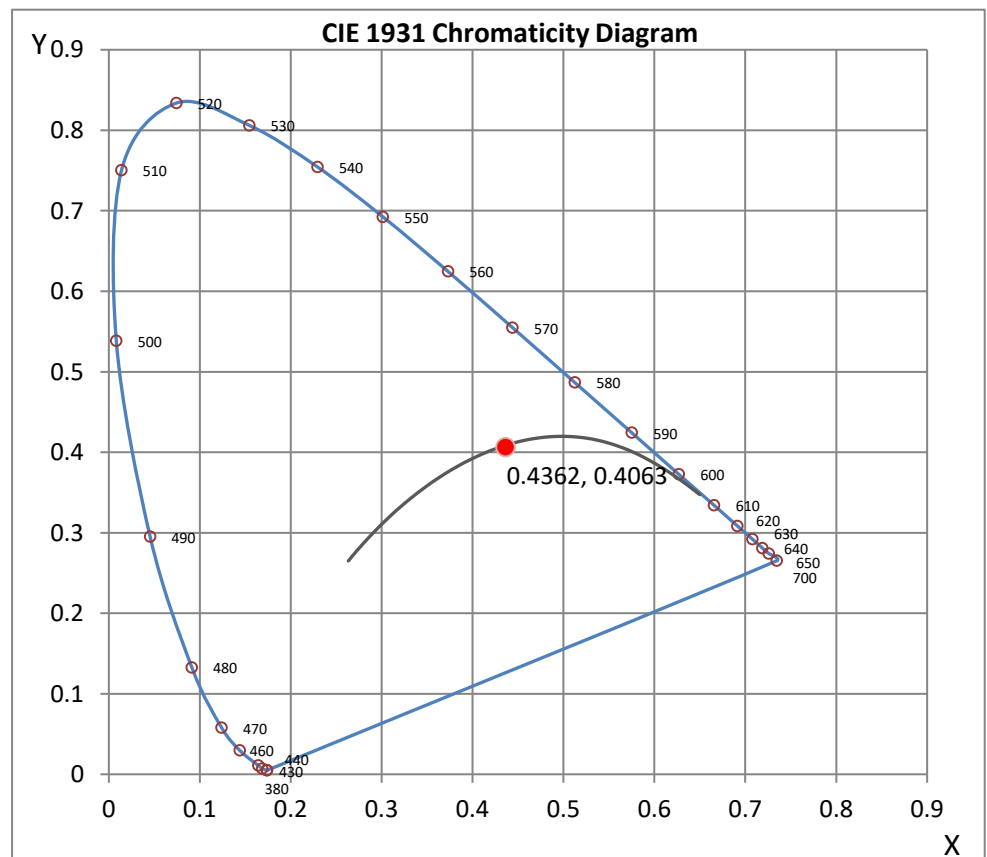


**CRI & CCT**

x	0.4362
y	0.4063
u'	0.2491
v'	0.5221
CRI	81.50
CCT	3030
Duv	0.00098

**R Values**

R1	79.96
R2	91.51
R3	94.63
R4	78.89
R5	80.37
R6	90.08
R7	81.11
R8	55.65
R9	0.38
R10	81.18
R11	78.43
R12	70.99
R13	82.84
R14	97.55



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## Test Methods

### Spectral Measurements - Integrating Sphere

A Sensing Spectroradiometer SPR-3000, in conjunction with Light Laboratory 2 meter integrating sphere was used to measure total photosynthetic photon flux (PPF), 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.

#### Disclaimers:

This report must not be used by the customer to claim product certification, approval or endorsement by NVLAP, NIST or any agency of Federal Government.


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