LIGHT LABORATORY INC.
8165 E Kaiser Blvd. Anaheim, CA 92808
www.lightlaboratory.com

NVLAP TESTING
NVLAP LAB CODE 200927-0

Report No: **L051802301** **Issue Date: 5/22/2018**

Report Prepared For: Horticulture Lighting Group
752 North State St, #208, Westerville, OH 43082

Model Number: **HLG 550 V2**

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: 5/17/18

Date of Tests: 5/21/18 - 5/22/18

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.

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Test Summary		
Manufacturer:	Horticulture Lighting Group	
Model Number:	HLG 550 V2	
Driver Model Number:	MEAN WELL HL-480H-C2100A	
Total PPF (µmol/s)	1178.05	* Measured range: 380nm - 780nm
Total Radiant Flux(W):	243.13	* Measured range: 380nm - 780nm
Total Lumens:	80833.17	* Measured range: 380nm - 780nm
Efficacy (lm/W):	170.93	
Input Voltage (VAC/60Hz):	220.00	
Input Current (Amp):	2.19	
Input Power (W):	472.90	
Input Power Factor:	0.98	
Current ATHD @ 220V(%):	6%	
Current ATHD @ 277V(%):	N/A	
Ambient Temperature (°C):	25.0	
Stabilization Time (Hours):	0:45	
Total Operating Time (Hours):	1:55	

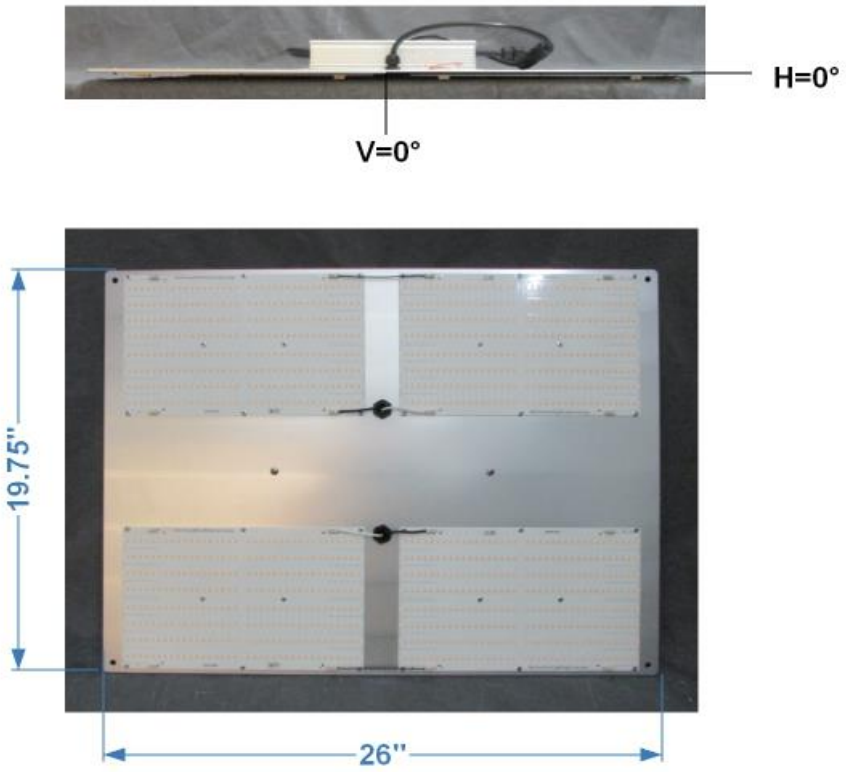

FIG. 1 LUMINAIRE

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

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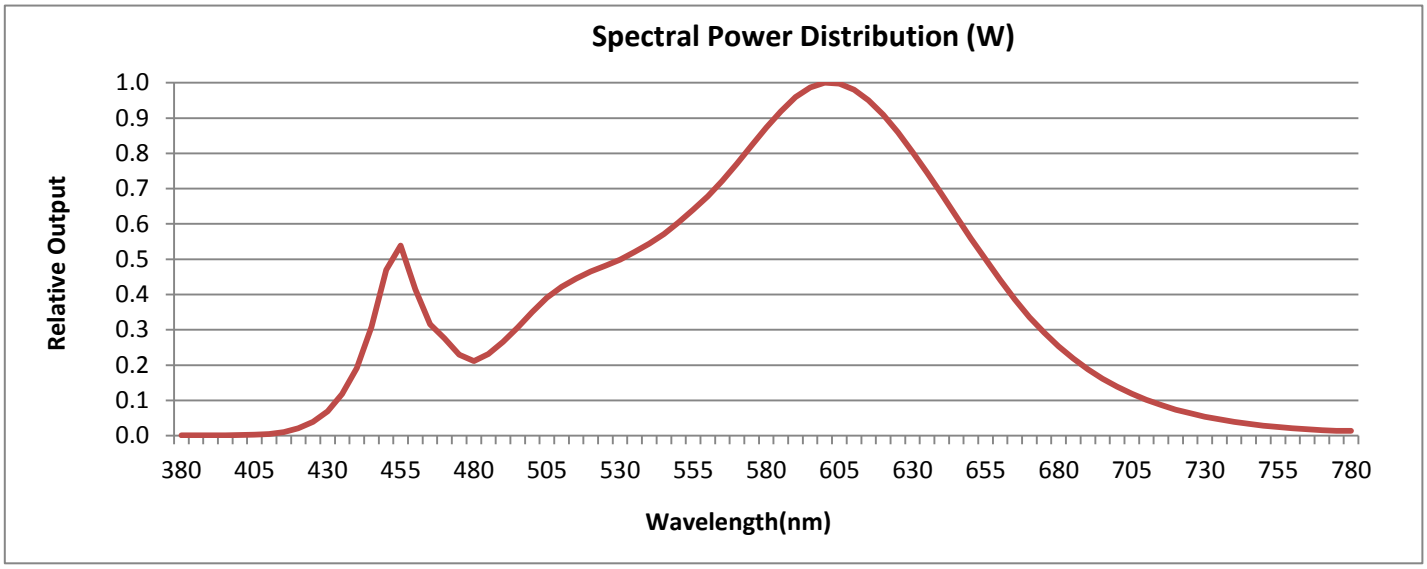
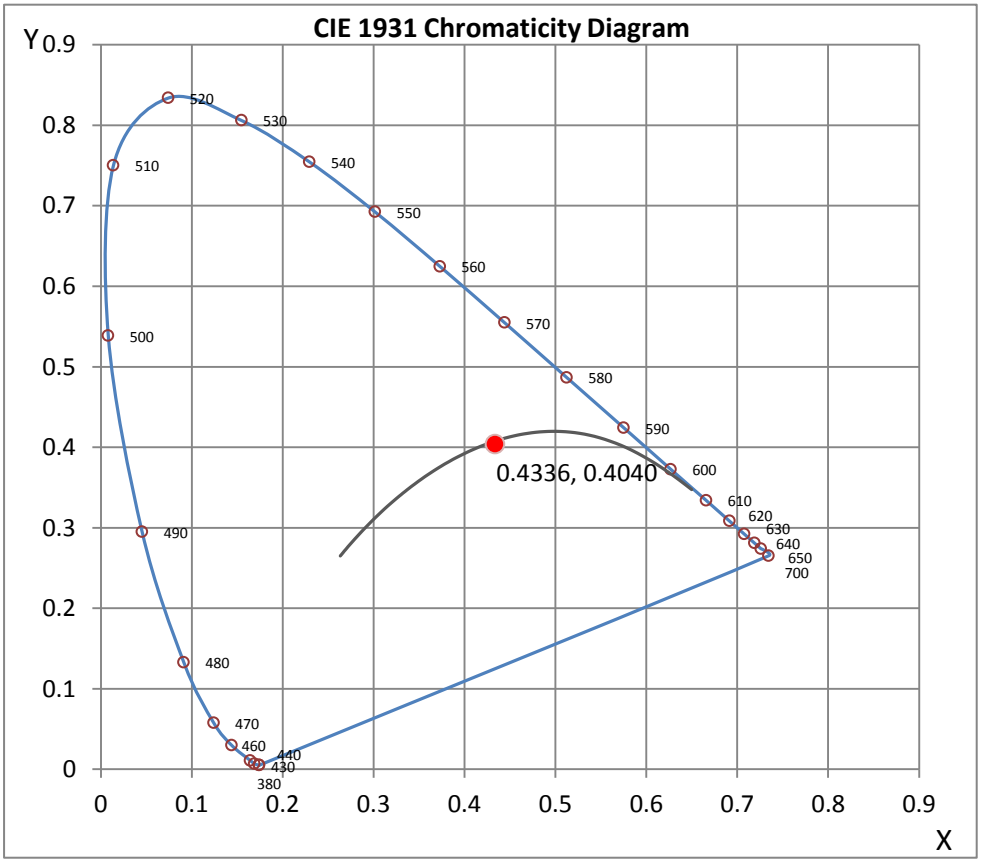


CRI & CCT

x	0.4336
y	0.4040
u'	0.2485
v'	0.5209
CRI	82.50
CCT	3056
Duv	0.00044

R Values

R1	81.12
R2	92.00
R3	94.98
R4	80.23
R5	81.58
R6	90.63
R7	81.84
R8	57.59
R9	4.65
R10	82.16
R11	80.02
R12	72.61
R13	83.86
R14	97.78



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Tempearture test

Per client's request, a thermocouple is place on the back of the LED board (FIG. 2). Thermocouple temperature is measured after the fixture is stabilized.

Thermocouple Temperature (°C): 58.1

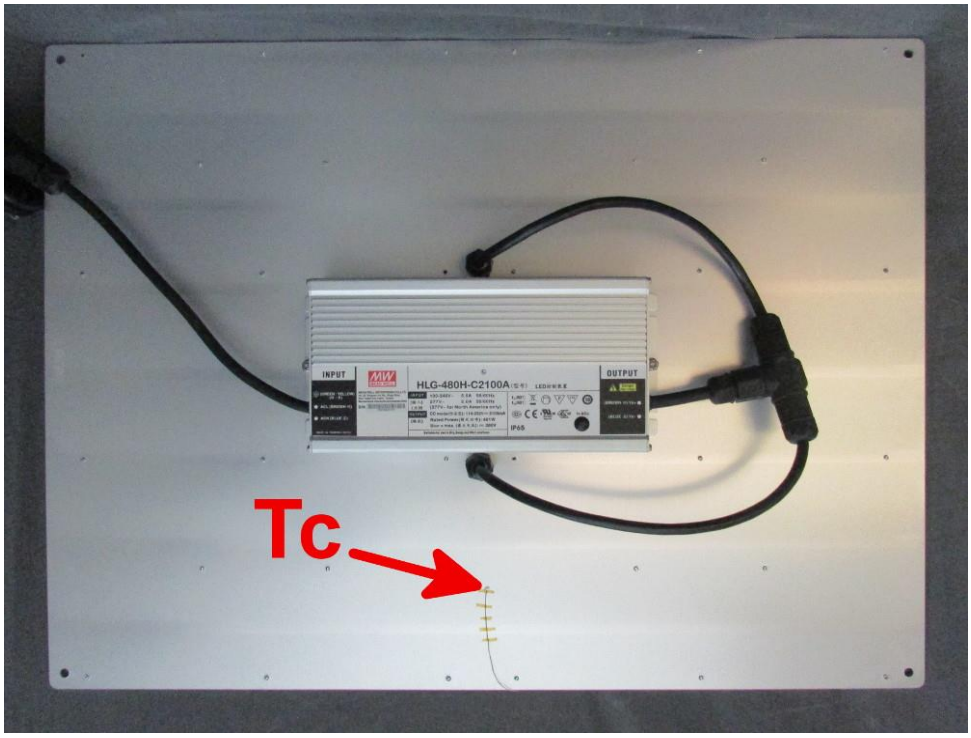

FIG. 2 Thermocouple location

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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^{o}C and is measured from the center of the fixture, within 1ft from the outside of the fixture. Temperature is maintained at 25^{o}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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Test Report Released by:

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Steve Kang
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