

Report No: L042110601P01 **Issue Date:** 4/9/2021

Report Prepared For: Al Gracian
Pittsburgh, PA

Manufacturer: Mars Hydro

Model Number: TS1000

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.

Special Test Condition: Fixture is tested with no special conditions.

Sample Arrival Date: 4/6/21

Date of Tests: 4/6/21 - 4/9/21

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 | 1/9/22 |
| BK PRECISION | 1747 | PS-DC04 | 1/10/22 |
| Fluke Digital Thermometer | 52K/J | MT-TP05 | 1/10/22 |
| 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 |

General Information

| | |
|-----------------------------|-----------------|
| Manufacturer: | Mars Hydro |
| Model Number: | TS1000 |
| Driver Model Number: | MOSO X6-150M041 |

Photometric, PPF & Electrical Test Results

| | | |
|-----------------------------------|----------|---------------------|
| Total PPF (μmol/s): | 329.46 | * 380 - 780nm range |
| Total PPF (μmol/s): | 315.40 | * 400 - 700nm range |
| Total Radiant Flux(W): | 68.72 | * 380 - 780nm range |
| Total Lumens (lm): | 21385.70 | * 380 - 780nm range |
| PPF Efficacy (μmol/Joule): | 2.27 | * 380 - 780nm range |
| PPF Efficacy (μmol/Joule): | 2.18 | * 400 - 700nm range |
| Luminous Efficacy (lm/W): | 147.60 | |
| Input Voltage (VAC/60Hz): | 120.03 | |
| Input Current (Amp): | 1.2082 | |
| Input Power (W): | 144.89 | |
| Input Power Factor: | 0.9991 | |
| Current ATHD (%): | N/A | |

Test Condition

| | |
|--------------------------------------|------|
| Ambient Temperature (°C): | 25.0 |
| Stabilization Time (Hours): | 0:35 |
| Total Operating Time (Hours): | 1:35 |

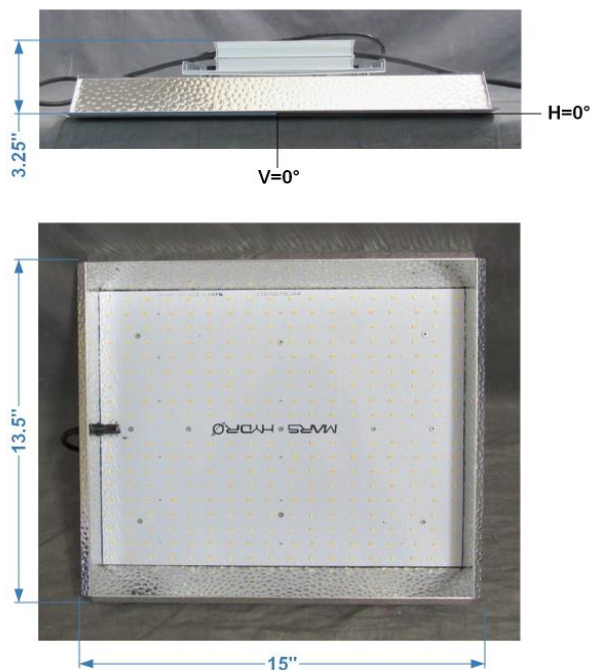
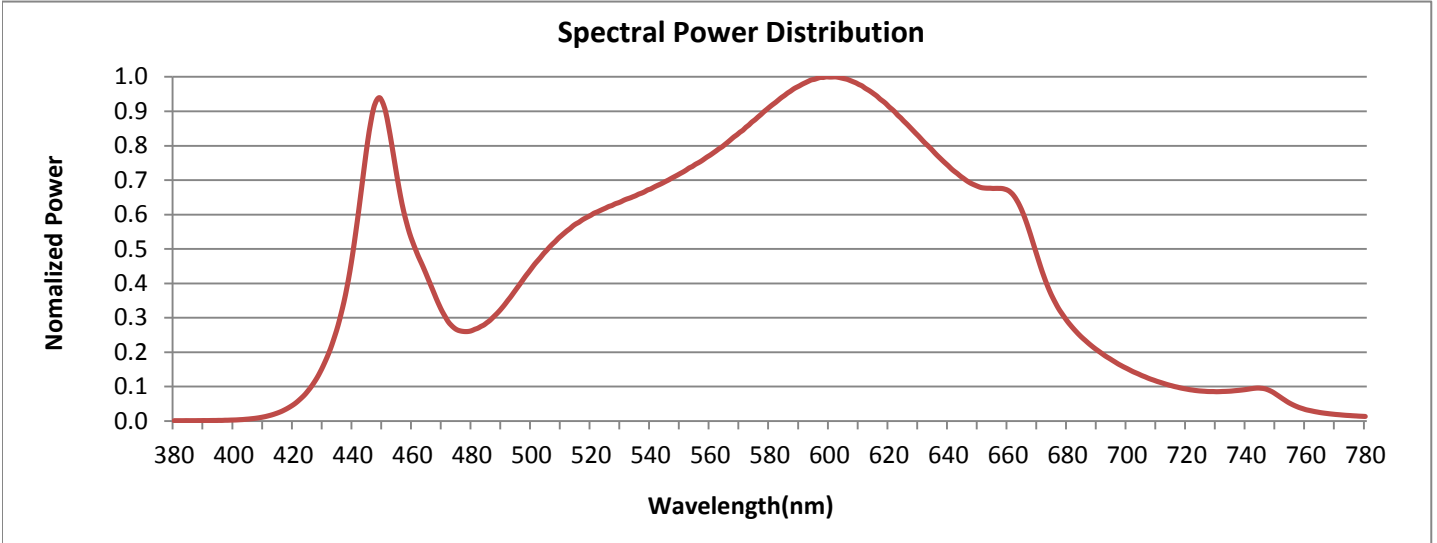


FIG. 1 LUMINAIRE

Colorimetry Test Results

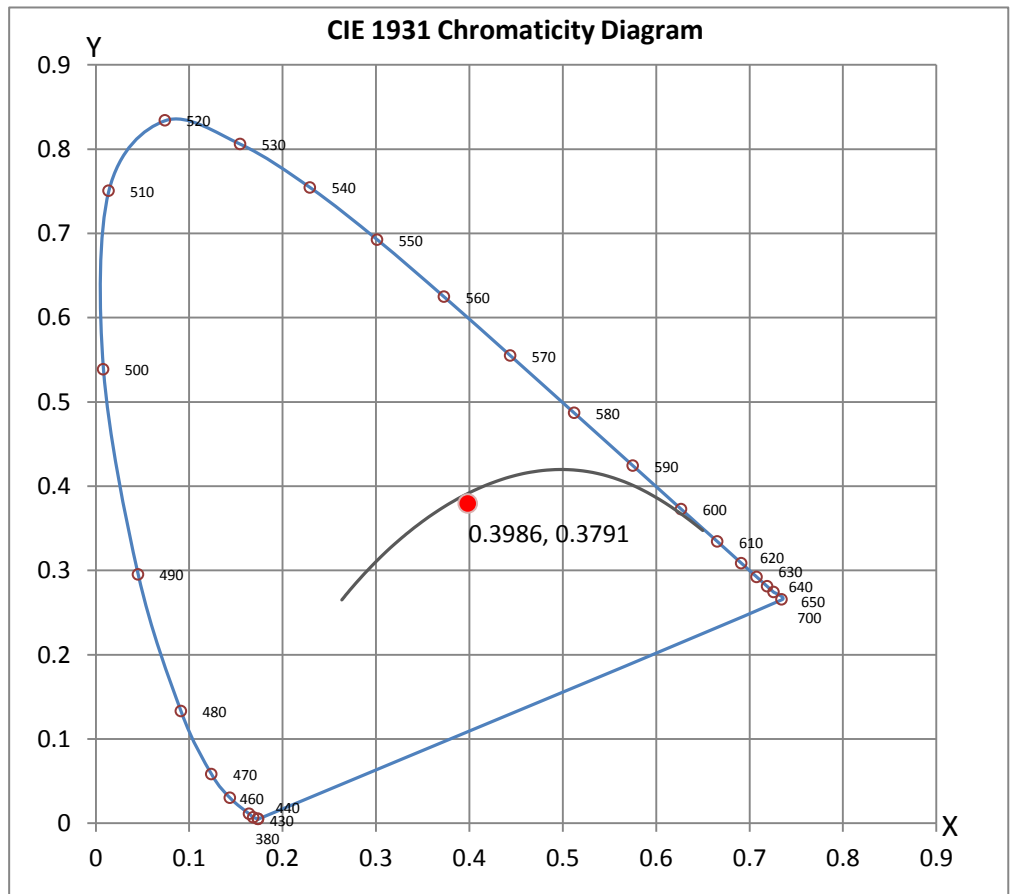


CRI & CCT

| | |
|-----|----------|
| x | 0.3986 |
| y | 0.3791 |
| u' | 0.2361 |
| v' | 0.5053 |
| CRI | 87.50 |
| CCT | 3555 |
| Duv | -0.00369 |

R Values

| | |
|-----|-------|
| R1 | 86.86 |
| R2 | 92.63 |
| R3 | 96.04 |
| R4 | 87.14 |
| R5 | 87.48 |
| R6 | 90.18 |
| R7 | 87.56 |
| R8 | 71.98 |
| R9 | 33.46 |
| R10 | 82.70 |
| R11 | 87.42 |
| R12 | 74.79 |
| R13 | 88.34 |
| R14 | 97.73 |
| R15 | 82.41 |



Test Methods

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.

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 Reviewed by:



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