



8165 E Kaiser Blvd. Anaheim, CA 92808  
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Report No: L102011001



**Report No:** L102011001

**Issue Date:** 10/27/2020

**Report Prepared For:** WHELEN AEROSPACE TECHNOLOGIES  
210 AIRPORT DRIVE EAST SEBASTIAN, FL 32958

**Model Number:** LSM-SCD-042-1

**Test:** Photometric/Electrical Test

**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:** 10 candela values at 5 mins interval, center measurement.

**Sample Arrival Date:** 10/21/20

**Date of Tests:** 10/22/20 - 10/27/20

**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	1/9/21
BK PRECISION	1747	PS-DC04	1/10/21
Fluke Digital Thermometer	52K/J	MT-TP05	1/10/21
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:** WHELEN AEROSPACE TECHNOLOGIES  
**Model Number:** LSM-SCD-042-1  
**Driver Model Number:** N/A

**Electricals and Test Results**

	Input Voltage (VDC)	Input Current (A)	Input Power (W)
Initial Electrical Measurements	28.00	1.052	29.45
Final Electrical Measurements (After 45 Mins)	28.01	0.801	22.44

Time(mins)	0	5	10	15	20	25	30	35	40	45
Candela	109642	101595	95559	90362	88854	87177	86339	85668	85501	85165

**Test Condition**

**Ambient Temperature (°C):** 25.0  
**Total Operating Time (Hours):** 0:45



FIG. 1 LUMINAIRE

## Test Methods

### Photometric Measurements - Goniophotometer

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.

Report Prepared by : Keyur Patel

Test Report Reviewed by:



Steve Kang  
Quality Assurance



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Report No: L062111801C



**Report No:** L062111801C **Issue Date:** 7/9/2021

**Report Prepared For:** Whelen Aerospace Technologies  
 210 Airport Drive East Sebastian, FL 32958

**Manufacturer:** WHELEN AEROSPACE TECHNOLOGIES

**Model Number:** 01-0772102-10

**Test:** Photometric/Colorimetric/Electrical Test

**Standards Used:** Appropriate part or all test guidelines were used for test performed:  
*IESNA LM79: 2019* Approved Methods for Electrical and Photometric Measurements of Solid-State Lighting Products  
*ANSI NEMA ANSLG C78.377: 2017* Specification of the Chromaticity of Solid State Lighting Products  
*ANSI C82.77-10:2014:* 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:** 10 candela values at 5 mins interval, center measurement.

**Sample Arrival Date:** 6/29/21

**Date of Tests:** 7/1/21 - 7/8/21

**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	4/7/23
HP Power Supply	6032A	PS-DC05-S2	--
Fluke Digital Thermometer	52K/J	MT-TP05	3/17/23
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:** Whelen Aerospace Technologies  
**Model Number:** 01-0772102-10  
**Driver Model Number:** N/A

**Electricals and Test Results**

	Input Voltage (VDC)	Input Current (A)	Input Power (W)
Initial Electrical Measurements	28.00	1.882	52.69
Final Electrical Measurements (After 45 Mins)	28.00	0.843	23.60

Time(mins)	0	5	10	15	20	25	30	35	40	45
Candela	136273	108817	85715	77846	75503	74331	73159	73661	73326	72824

**Test Condition**

**Ambient Temperature (°C):** 25.0  
**Total Operating Time (Hours):** 0:45



FIG. 1 LUMINAIRE

## Test Methods

### Photometric Measurements - Goniophotometer

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:

The results related only to the samples as received and tested. This report must not be used by the customer to claim product certification, approval or endorsement by NVLAP, NIST or any agency of the Federal Government.

Report Prepared by :           Kunjan Modi          

Test Report Reviewed by:



Steve Kang  
Quality Assurance



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Report No: L062111804C



**Report No:** L062111804C **Issue Date:** 7/9/2021

**Report Prepared For:** Whelen Aerospace Technologies  
 210 Airport Drive East Sebastian, FL 32958

**Manufacturer:** AeroLeds

**Model Number:** 01-1030-L-A

**Test:** Photometric/Colorimetric/Electrical Test

**Standards Used:** Appropriate part or all test guidelines were used for test performed:  
*IESNA LM79: 2019* Approved Methods for Electrical and Photometric Measurements of Solid-State Lighting Products  
*ANSI NEMA ANSLG C78.377: 2017* Specification of the Chromaticity of Solid State Lighting Products  
*ANSI C82.77-10:2014:* 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:** 10 candela values at 5 mins interval, center measurement.

**Sample Arrival Date:** 6/29/21

**Date of Tests:** 7/1/21 - 7/8/21

**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	4/7/23
HP Power Supply	6032A	PS-DC05-S2	--
Fluke Digital Thermometer	52K/J	MT-TP05	3/17/23
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:** AeroLeds  
**Model Number:** 01-1030-L-A  
**Driver Model Number:** N/A

**Electricals and Test Results**

	Input Voltage (VDC)	Input Current (A)	Input Power (W)
Initial Electrical Measurements	28.00	1.384	38.75
Final Electrical Measurements (After 45 Mins)	28.02	0.729	20.44

Time(mins)	0	5	10	15	20	25	30	35	40	45
Candela	60856	50127	41744	39565	38894	38727	38391	38224	38391	38224

**Test Condition**

**Ambient Temperature (°C):** 25.0  
**Total Operating Time (Hours):** Please Check Total Operating Time again

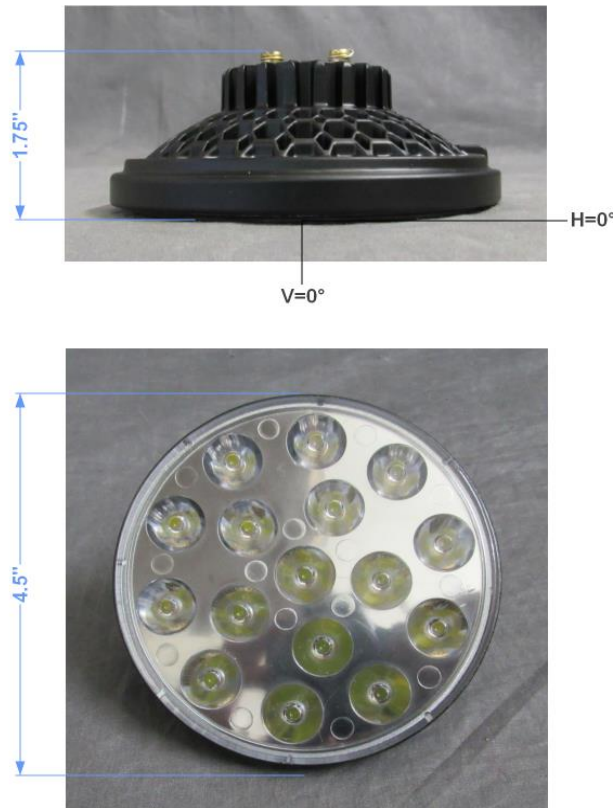


FIG. 1 LUMINAIRE



## Test Methods

### Photometric Measurements - Goniophotometer

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:

The results related only to the samples as received and tested. This report must not be used by the customer to claim product certification, approval or endorsement by NVLAP, NIST or any agency of the Federal Government.

Report Prepared by :                     Kunjan Modi                    

Test Report Reviewed by:



Steve Kang  
Quality Assurance



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Report No: L062111806C



**Report No:** L062111806C **Issue Date:** 7/9/2021

**Report Prepared For:** Whelen Aerospace Technologies  
 210 Airport Drive East Sebastian, FL 32958

**Manufacturer:** AeroLeds

**Model Number:** 01-1030-4596

**Test:** Photometric/Colorimetric/Electrical Test

**Standards Used:** Appropriate part or all test guidelines were used for test performed:  
*IESNA LM79: 2019* Approved Methods for Electrical and Photometric Measurements of Solid-State Lighting Products  
*ANSI NEMA ANSLG C78.377: 2017* Specification of the Chromaticity of Solid State Lighting Products  
*ANSI C82.77-10:2014:* 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:** 10 candela values at 5 mins interval, center measurement.

**Sample Arrival Date:** 6/29/21

**Date of Tests:** 7/1/21 - 7/8/21

**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	4/7/23
HP Power Supply	6032A	PS-DC05-S2	--
Fluke Digital Thermometer	52K/J	MT-TP05	3/17/23
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:** AeroLeds  
**Model Number:** 01-1030-4596  
**Driver Model Number:** N/A

**Electricals and Test Results**

	Input Voltage (VDC)	Input Current (A)	Input Power (W)
Initial Electrical Measurements	28.03	3.317	92.97
Final Electrical Measurements (After 45 Mins)	28.00	1.250	34.80

Time(mins)	0	5	10	15	20	25	30	35	40	45
Candela	144177	70077	57168	53480	54150	52139	53144	51971	52642	52306

**Test Condition**

**Ambient Temperature (°C):** 25.0  
**Total Operating Time (Hours):** 0:45



FIG. 1 LUMINAIRE

## Test Methods

### Photometric Measurements - Goniophotometer

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:

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Report Prepared by :           Kunjan Modi          

Test Report Reviewed by:



Steve Kang  
Quality Assurance



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Report No: L062111809C



**Report No:** L062111809C **Issue Date:** 7/9/2021

**Report Prepared For:** Whelen Aerospace Technologies  
 210 Airport Drive East Sebastian, FL 32958

**Manufacturer:** Aveo Engineering

**Model Number:** H30MWSSOH-00A-Full High

**Test:** Photometric/Colorimetric/Electrical Test

**Standards Used:** Appropriate part or all test guidelines were used for test performed:  
*IESNA LM79: 2019* Approved Methods for Electrical and Photometric Measurements of Solid-State Lighting Products  
*ANSI NEMA ANSLG C78.377: 2017* Specification of the Chromaticity of Solid State Lighting Products  
*ANSI C82.77-10:2014:* 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:** 10 candela values at 5 mins interval, center measurement.

**Sample Arrival Date:** 6/29/21

**Date of Tests:** 7/1/21 - 7/8/21

**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	4/7/23
HP Power Supply	6032A	PS-DC05-S2	--
Fluke Digital Thermometer	52K/J	MT-TP05	3/17/23
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:** Aveo Engineering  
**Model Number:** H30MWSSOH-00A-Full High  
**Driver Model Number:** N/A

**Electricals and Test Results**

	Input Voltage (VDC)	Input Current (A)	Input Power (W)
Initial Electrical Measurements	28.00	2.122	59.40
Final Electrical Measurements (After 45 Mins)	28.00	1.400	39.41

Time(mins)	0	5	10	15	20	25	30	35	40	45
Candela	41409	34368	31518	29841	29003	28333	27997	27662	27662	27494

**Test Condition**

**Ambient Temperature (°C):** 25.0  
**Total Operating Time (Hours):** 0:45

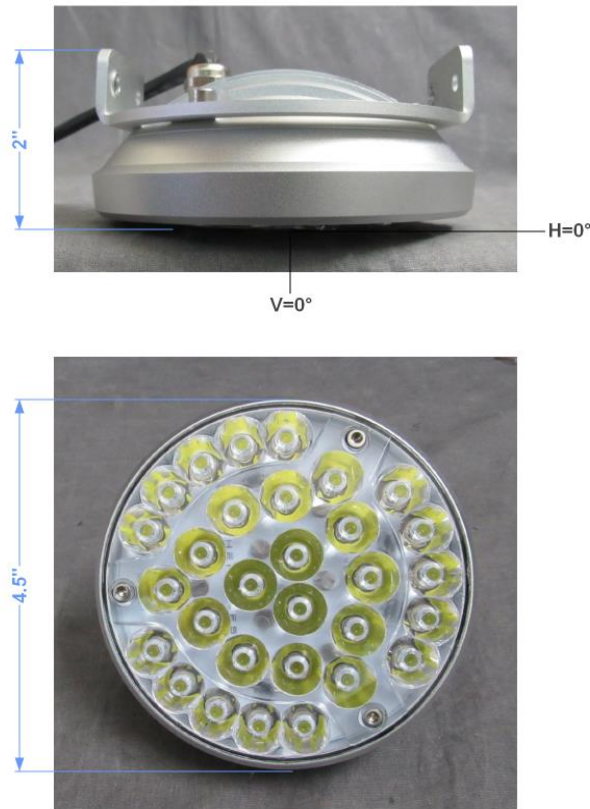


FIG. 1 LUMINAIRE

## Test Methods

### Photometric Measurements - Goniophotometer

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:

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Report Prepared by :                     Kunjan Modi                    

Test Report Reviewed by:



Steve Kang  
Quality Assurance



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

Report No: L062111810C



**Report No:** L062111810C **Issue Date:** 7/9/2021

**Report Prepared For:** Whelen Aerospace Technologies  
 210 Airport Drive East Sebastian, FL 32958

**Manufacturer:** Aero-Lites

**Model Number:** PAR36L204

**Test:** Photometric/Colorimetric/Electrical Test

**Standards Used:** Appropriate part or all test guidelines were used for test performed:  
*IESNA LM79: 2019* Approved Methods for Electrical and Photometric Measurements of Solid-State Lighting Products  
*ANSI NEMA ANSLG C78.377: 2017* Specification of the Chromaticity of Solid State Lighting Products  
*ANSI C82.77-10:2014:* 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:** 10 candela values at 5 mins interval, center measurement.

**Sample Arrival Date:** 6/29/21

**Date of Tests:** 7/1/21 - 7/8/21

**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	4/7/23
HP Power Supply	6032A	PS-DC05-S2	--
Fluke Digital Thermometer	52K/J	MT-TP05	3/17/23
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:** Aero-Lites  
**Model Number:** PAR36L204  
**Driver Model Number:** N/A

**Electricals and Test Results**

	Input Voltage (VDC)	Input Current (A)	Input Power (W)
Initial Electrical Measurements	28.02	1.252	35.08
Final Electrical Measurements (After 45 Mins)	28.00	0.876	24.53

Time(mins)	0	5	10	15	20	25	30	35	40	45
Candela	38727	35206	32524	31015	29674	29003	28668	28500	28333	28333

**Test Condition**

**Ambient Temperature (°C):** 25.0  
**Total Operating Time (Hours):** 0:45

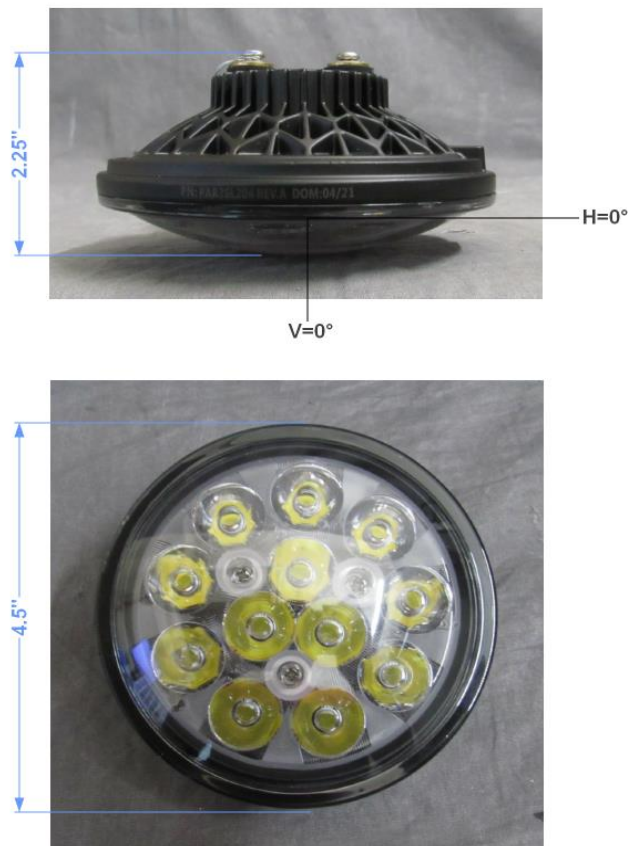


FIG. 1 LUMINAIRE

## Test Methods

### Photometric Measurements - Goniophotometer

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:

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Report Prepared by :                     Kunjan Modi                    

Test Report Reviewed by:



Steve Kang  
Quality Assurance