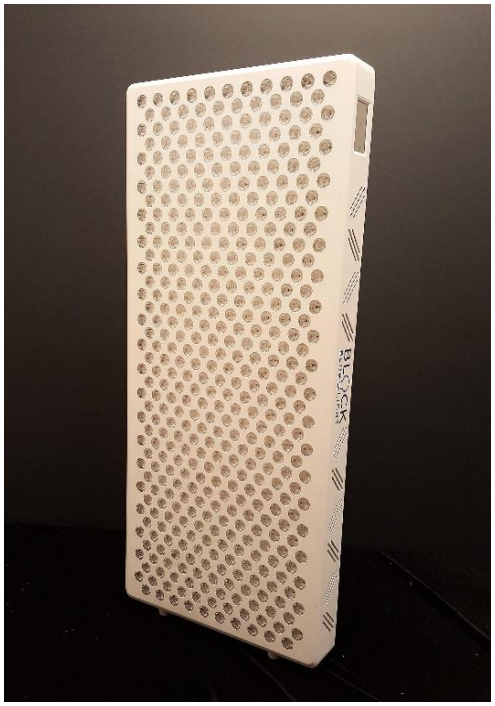
LightLab INTERNATIONAL ALLENTOWN LLC

Radiant Flux Test Report

LLIA003077-003A-R01*

Catalog Number: MEGA-PLUS
Portable, formed white steel housing, 2 aluminum heatsink panels and 16 cooling fans behind LEDs.
420 LEDs, 68 "590nm", 70 "630nm", 72 "660nm", 82 "810nm", 54 "830nm", 54 "850nm", 20 "1060nm" LEDs
2 unmarked LED circuit board drivers, and 2 unmarked fan power supplies.



Performance Summary

Total Radiometric (350-1700nm)		
Total Radiant Flux	259.87	W
Radiant Efficiency	32.8	% (W_r/W_e)
Radiometric Range: 570-1100nm		
Radiant Flux (570-1100nm)	259.16	W
Red/Total Red Ratio*	86.3	%
Deep Red/Total Red Ratio*	13.7	%
NIR/Total NIR Ratio*	93.5	%
Deep NIR/Total NIR Ratio*	6.5	%

*Note: In this report, Red spans the wavelength range 600-700nm, Deep Red spans 700-780nm, Total Red spans 600-780nm, NIR spans 780-900nm, Deep NIR spans 900-1100nm, and Total NIR spans 780-1100nm.

Peak Wavelength(s)	601, 634, 665, 811, 838, 1055	nm
Luminous Flux	11699.9	Lumens
Luminous Efficacy	14.8	Lm/W

Prepared For:
Blockbluelight Limited
851 Victoria Street
Hamilton, 3204, New Zealand

*This test report supersedes test report LLIA003077-003A

Test date: 09/16/2026
Report date: 10/23/2026

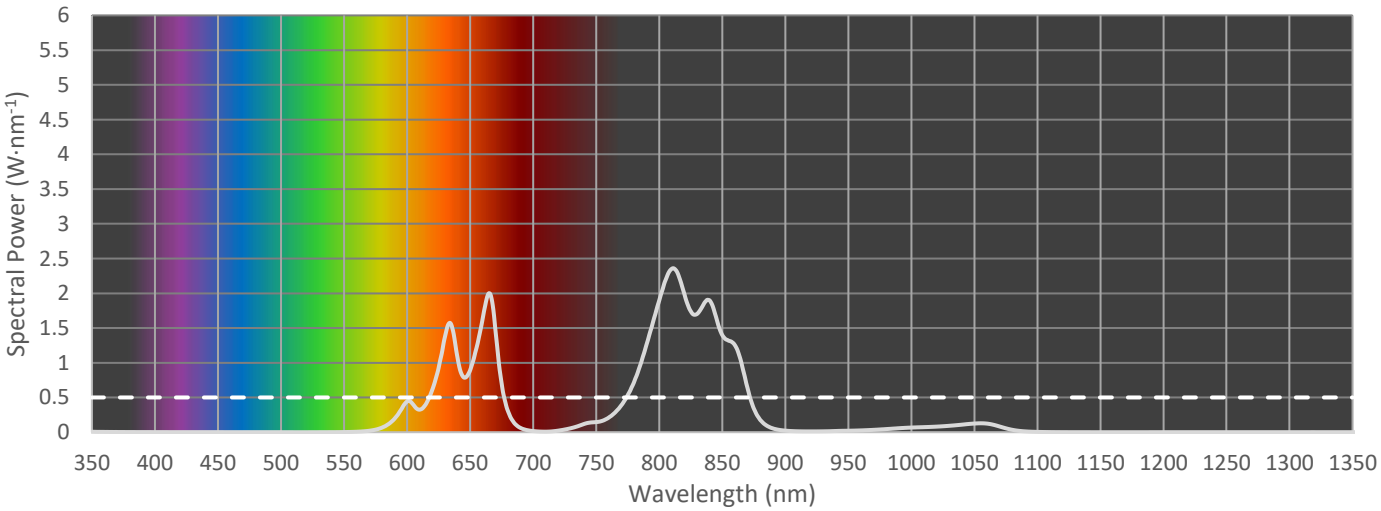
Signed: Michael L. Grather Digitally signed by Michael L. Grather Date: 2026.10.23 14:16:24 -04'00'

North America (issuing laboratory)
LightLab International Allentown, LLC
905 Harrison Street, Suite 135
Allentown, PA 18103 USA
Ph: +1 484-273-0705
Fx: +1 484-209-5779
www.lightlaballentown.com

Australasia & S.E. Asia
LightLab International
50 Redcliffe Gardens Drive
Clontarf - Queensland, 4019, Australia
Ph : +61 7 3283 7862
Fx : +61 7 3283 8751
www.lightlabint.com

Test Report Number: LLIA003077-003A-R01*

Radiant Flux Tabulation			
Waveband (nm)	Radiant Flux (W_r)	Percent of Total	Efficiency (W_r/W_e)
350-500	0.25	0.1%	0.000
500-570	0.20	0.1%	0.000
Amber 570-600	4.77	1.8%	0.006
Red 600-700	80.75	31.1%	0.102
Deep Red 700-780	12.80	4.9%	0.016
NIR 780-900	150.35	57.9%	0.190
Deep NIR 900-1100	10.49	4.0%	0.013
570-1100	259.16	99.7%	0.327
Total 350-1700	259.87	100.0%	0.328



LightLab INTERNATIONAL ALLENTOWN LLC

Test Report Number: LLIA003077-003A-R01*

Electrical Data

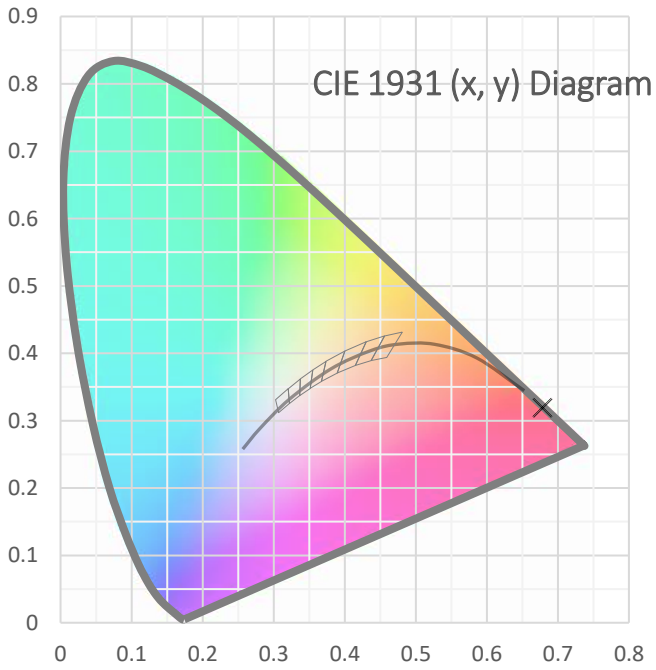
Voltage	230.0	Vac
Current	3.572	A
Power	792.0	W
Frequency	60.00	Hz
Power Factor	0.964	
Current THD	8.4	%

Spectral Power of Select Wavelengths

Wavelength (nm)	Spectral Power ($W \cdot nm^{-1}$)
590	0.1926
630	1.3687
660	1.6368
810	2.3524
830	1.7019
850	1.3993
1064	0.1117

Photometric (Human Vision) Data

Total Luminous Flux		11699.9	lm
Luminous Efficacy		14.8	lm/W
Chromaticity	(x,y)	(0.6787, 0.3191)	
	(u',v')	(0.4961, 0.5249)	
Duv		n/a	
CCT		n/a	K
CRI (Ra)		n/a	
R9		n/a	
TM-30: Rf		n/a	
TM-30: Rg		n/a	



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Ph: +1 484-273-0705
Fx: +1 484-209-5779
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LightLab INTERNATIONAL ALLENTOWN LLC

Test Report Number: LLIA003077-003A-R01*

Test Equipment Configuration:	Measurements acquired using the LightLab International Allentown, LLC Labsphere 2m Integrating Sphere system with spectroradiometer. Testing was performed using 4π geometry
Test Temperature:	25.5 °C
Test Procedure:	Tested in accordance with the applicable sections of: LM-79-24, LM-78-20, LM-58-20, ANSI_ANSLG C78.377-2017, TM-30-24
Significance:	The laboratory has not participated in the selection of samples to be tested. All testing is performed on the understanding that the significance of the report is limited to the extent that the test sample is representative of production units.
Notes:	The measurements and other derived quantities contained in this report are based on the absolute data as measured. Prorating the performance of the sample for the use of other component combinations (such as lamp / LED / Ballast / driver), or for use in different environmental conditions than that tested, may produce erroneous results. This report is free of erasures and corrections This report may contain data that are not covered by the NVLAP accreditation. Quantities marked with ǂ are not covered.

Revisions:

R01 - 10/22/2026 - Modified scale of SPD plot and added 0.5 W/nm line

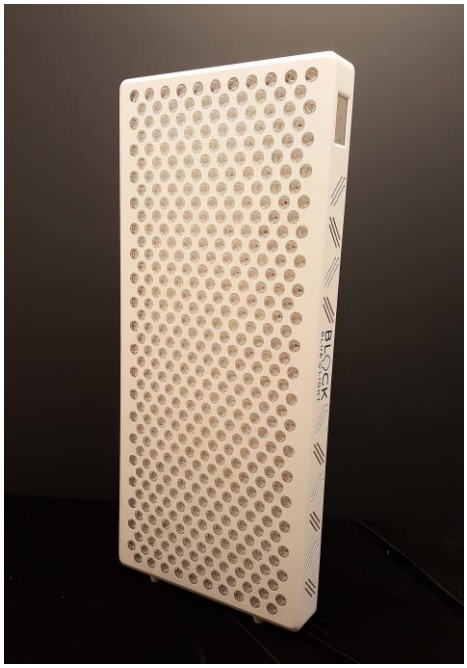
LightLab
INTERNATIONAL
ALLENTOWN LLC

Radiant Flux Stabilization Report

LLIA003077-003B-R01*

Catalog Number: MEGA-PLUS

Portable, formed white steel housing, 2 aluminum heatsink panels and 16 cooling fans behind LEDs.
420 LEDs, 68 "590nm", 70 "630nm", 72 "660nm", 82 "810nm", 54 "830nm", 54 "850nm", 20 "1060nm" LEDs
2 unmarked LED circuit board drivers, and 2 unmarked fan power supplies.



Test Equipment:

Irradiance measurements were acquired with LightLab asset A108-Gigahertz-Optik BTS2048-VL-TEC and A114-Gigahertz-Optik BTS2048-NIR Spectral Irradiance Meters using LightLab's Application Distance Measurement Grid in the LightLab goniometer room with stray light reduction. Spectral irradiance was recorded in one-minute intervals during stabilization.

Prepared For:
Blockbluelight Limited
851 Victoria Street
Hamilton, 3204, New Zealand

*This test report supersedes test report LLIA003077-003B

Test date: 09/17/2026
Report date: 10/23/2026

LightLab INTERNATIONAL ALLENTOWN LLC

Test Report Number: LLIA003077-003B-R01*

Spectral Irradiance measurements taken 12" above the center of the panel.

Time (minutes)	Irradiance (570-1100nm) (mW/cm2)	Irradiance (600-780nm) (mW/cm2)	Irradiance (780-1100nm) (mW/cm2)
0.5	89.9	33.2	53.4
1.5	88.9	32.8	53.2
2.5	88.0	32.4	52.9
3.5	87.4	32.2	52.8
4.5	86.9	32.0	52.7
5.5	86.5	31.8	52.6
6.5	86.1	31.7	52.5
7.5	85.9	31.6	52.4
8.5	85.7	31.5	52.4
9.5	85.6	31.4	52.4
10.5	85.4	31.3	52.3
11.5	85.2	31.3	52.3
12.5	85.1	31.2	52.3
13.5	85.0	31.2	52.2
14.5	85.1	31.2	52.3
15.5	84.9	31.1	52.2
16.5	84.9	31.1	52.3
17.5	85.0	31.1	52.3
18.5	85.0	31.1	52.3
19.5	84.9	31.1	52.3

15 Minute 570-1100nm Irradiance Retention
94.7%

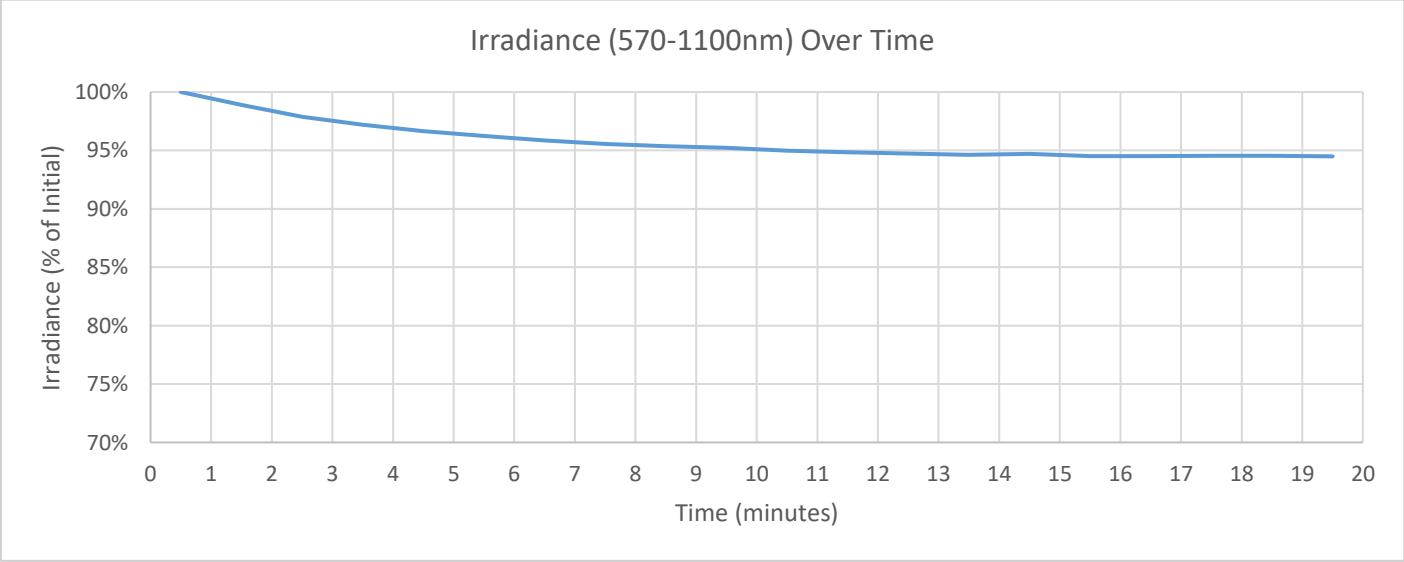
20 Minute 570-1100nm Irradiance Retention
94.5%

15 Minute 600-780nm Irradiance Retention
93.9%

20 Minute 600-780nm Irradiance Retention
93.6%

15 Minute 780-1100nm Irradiance Retention
98.1%

20 Minute 780-1100nm Irradiance Retention
98.1%

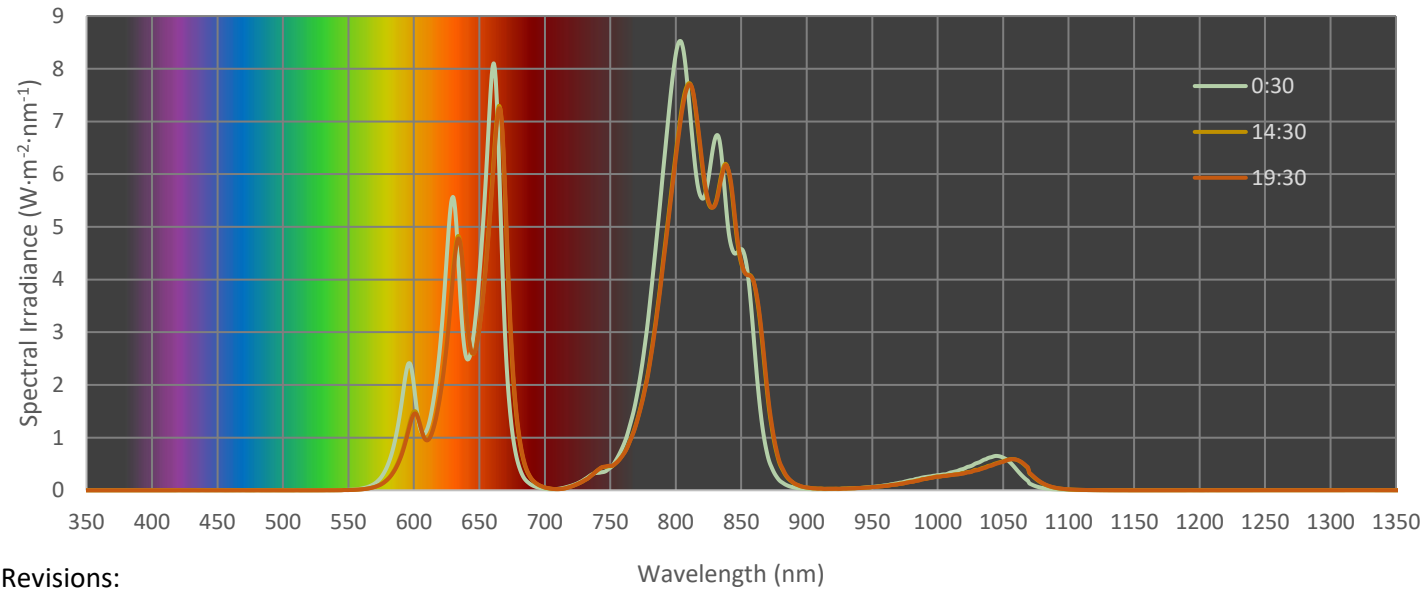


LightLab INTERNATIONAL ALLENTOWN LLC

Test Report Number: LLIA003077-003B-R01*

Spectral Irradiance measurements taken 12" above the center of the panel.

Local Peak Number	0.5 min peak wavelength (nm)	14.5 min peak wavelength (nm)	19.5 min peak wavelength (nm)
1	596	601	601
2	630	634	634
3	661	665	665
4	803	810	811
5	832	838	838
6	1045	1057	1057



Revisions:

R01 - 10/22/2026 - Modified scale of Irrad retention plot. Fixed typo on "full spectral range" irrad retention labels.

LightLab INTERNATIONAL ALLENTOWN LLC

Grid Application Distance Measurement Test Report

Test Report Number: LLIA003077-003C-R01*

Catalog Number: MEGA-PLUS

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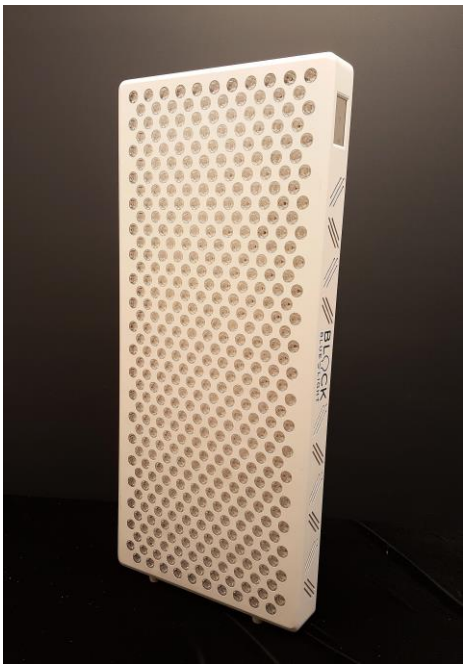
2 unmarked LED circuit board drivers, and 2 unmarked fan power supplies.



Performance Summary

Electrical		
Voltage	230.0	Vac
Current	3.582	A
Power	794.9	W
Frequency	60.00	Hz
Power Factor	0.965	
Current THD	8.2	%
Ambient Temperature	24.8	°C
Grid Dimensions		
Test Plane Distance	12	inches
X Axis minimum	-12	inches
X Axis maximum	12	inches
X Axis increments	2	inches
Y Axis minimum	-30	inches
Y Axis maximum	30	inches
Y Axis increments	2	inches
Number of measurement points	403	

Test Equipment:

Irradiance measurements were acquired with LightLab asset A108-Gigahertz-Optik BTS2048-VL-TEC and A114-Gigahertz-Optik BTS2048-NIR Spectral Irradiance Meters using LightLab's Application Distance Measurement Grid in the LightLab goniometer room with stray light reduction. The test subject was allowed to reach stabilization according to IES LM-79-24 criteria prior to measurements.

Prepared For:
Blockbluelight Limited
851 Victoria Street
Hamilton, 3204, New Zealand

*This test report supersedes test report LLIA003077-003C

Test date: 09/17/2026
Report date: 10/23/2026

LightLab INTERNATIONAL ALLENTOWN LLC

Test Report Number: LLIA003077-003C-R01*

Full Body Target Area
Total Irradiance (570-1100nm) in mW/cm^2
Test Distance = 12 inches

X Axis Distance (inches)

Y Axis Distance (inches)	-12	-10	-8	-6	-4	-2	0	2	4	6	8	10	12
30	0.26	0.29	0.32	0.34	0.36	0.36	0.37	0.36	0.35	0.33	0.30	0.27	0.25
28	0.33	0.37	0.41	0.45	0.48	0.49	0.49	0.48	0.46	0.43	0.39	0.35	0.31
26	0.41	0.48	0.55	0.62	0.67	0.69	0.69	0.68	0.64	0.58	0.52	0.45	0.39
24	0.53	0.66	0.85	1.05	1.20	1.22	1.22	1.17	1.10	0.95	0.77	0.61	0.49
22	0.74	1.14	2.25	3.37	4.03	4.42	4.64	4.39	3.81	2.94	1.90	1.03	0.67
20	1.19	2.95	6.51	10.68	14.93	15.66	15.75	15.01	12.94	9.78	5.58	2.60	1.04
18	2.10	6.17	13.69	23.03	28.75	33.10	34.57	31.93	27.48	21.15	12.29	5.34	1.78
16	3.05	9.44	20.77	36.03	47.94	56.08	60.83	54.02	46.19	34.25	19.54	8.32	2.69
14	3.51	11.67	27.06	44.87	60.36	70.40	76.14	71.87	60.11	45.01	25.54	11.22	3.31
12	3.49	12.35	29.13	49.55	65.69	81.77	85.98	80.43	67.25	52.12	29.44	12.40	3.56
10	3.56	12.62	28.24	51.80	66.42	81.10	84.31	82.13	69.87	52.74	30.68	12.95	3.69
8	3.56	12.76	28.41	51.17	67.26	82.38	86.94	82.84	69.58	53.34	30.89	13.84	3.83
6	3.71	12.33	29.33	51.02	68.81	82.75	87.46	82.46	69.77	54.10	31.13	14.00	4.25
4	4.02	12.44	29.33	50.20	67.79	80.61	83.58	80.73	68.15	50.58	30.47	13.41	4.48
2	4.05	12.92	30.30	50.17	67.24	79.29	82.05	78.11	66.98	50.94	29.27	13.08	4.34
0	3.95	12.94	29.52	50.89	67.94	80.37	83.40	79.84	69.43	50.67	29.73	12.82	4.11
-2	3.96	12.84	29.44	51.19	68.26	82.58	88.61	80.77	68.04	51.38	29.47	13.05	3.96
-4	3.70	12.63	29.65	50.93	69.96	82.59	89.66	83.72	70.96	52.81	29.67	13.00	3.80
-6	3.41	12.14	28.30	52.20	67.01	83.05	88.24	85.30	70.23	51.74	30.35	12.55	3.69
-8	3.34	12.04	27.91	50.81	67.85	81.08	86.13	82.49	70.70	53.56	31.32	13.73	3.70
-10	3.46	12.20	28.41	50.95	66.62	82.06	86.42	82.82	70.27	53.34	31.40	14.12	4.01
-12	3.36	12.03	28.04	49.20	67.72	81.33	86.37	80.77	67.54	53.15	31.32	14.37	4.21
-14	3.46	10.80	24.85	42.59	58.86	71.53	71.01	69.43	58.51	44.23	26.65	12.69	4.04
-16	2.97	8.59	18.96	32.88	44.09	54.24	55.46	53.37	46.23	34.61	20.27	10.23	3.41
-18	1.93	5.32	11.23	18.89	25.85	32.20	32.93	32.28	27.74	20.78	12.76	5.99	2.36
-20	1.05	2.33	5.16	9.10	11.94	14.02	14.78	14.98	13.47	10.23	6.09	3.04	1.37
-22	0.68	0.97	1.59	2.44	3.50	4.16	4.57	4.65	4.38	3.51	2.07	1.23	0.75
-24	0.52	0.63	0.77	0.96	1.12	1.22	1.25	1.23	1.14	1.01	0.83	0.68	0.55
-26	0.41	0.48	0.55	0.62	0.68	0.72	0.73	0.73	0.69	0.64	0.57	0.50	0.43
-28	0.33	0.38	0.42	0.47	0.50	0.52	0.52	0.52	0.50	0.47	0.43	0.39	0.34
-30	0.27	0.30	0.33	0.36	0.38	0.40	0.40	0.39	0.38	0.36	0.33	0.31	0.27

Center Point Irradiance	83.40	mW/cm^2	
Maximum Irradiance	89.66	mW/cm^2	
Minimum Irradiance	0.25	mW/cm^2	
Standard Deviation	28.91	mW/cm^2	
Coefficient of Variation	114.4	%	
Target Area Radiant Power	260.8	W	
Average Irradiance	28.07	mW/cm^2	
Percent area over 20mW/cm^2	45.1	%	
Percent area over 30mW/cm^2	36.7	%	
Percent area over 40mW/cm^2	31.3	%	

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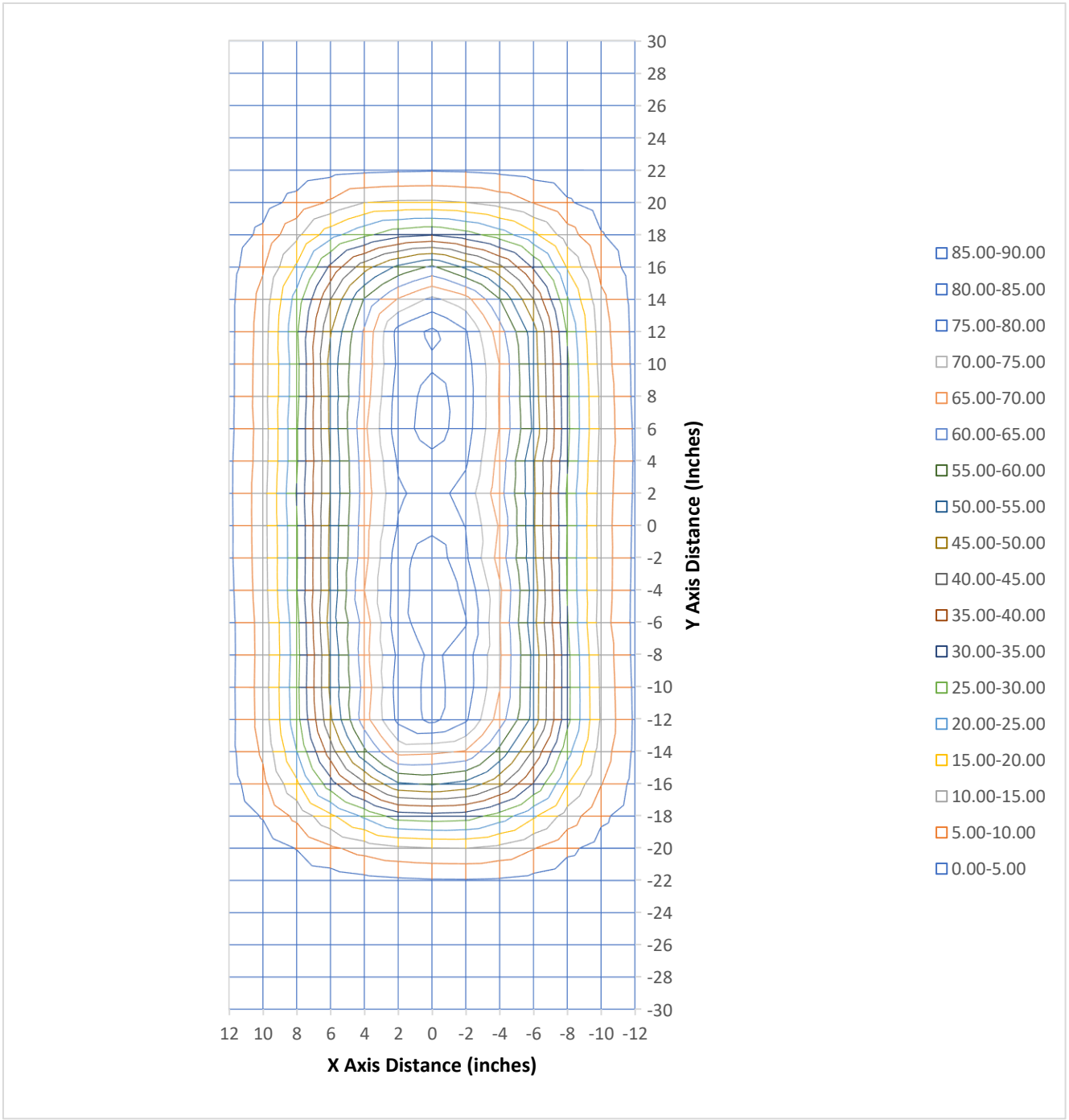
LightLab INTERNATIONAL ALLENTOWN LLC

Report of Test

Test Report Number: LLIA003077-003C-R01*

Total Irradiance (570-1100nm) in mW/cm^2
Test Distance = 12 inches



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Test Report Number: LLIA003077-003C-R01*

Half Body Target Area
Total Irradiance (570-1100nm) in mW/cm^2
Test Distance = 12 inches

X Axis Distance (inches)

Y Axis Distance (inches)	-12	-10	-8	-6	-4	-2	0	2	4	6	8	10	12
14	3.51	11.67	27.06	44.87	60.36	70.40	76.14	71.87	60.11	45.01	25.54	11.22	3.31
12	3.49	12.35	29.13	49.55	65.69	81.77	85.98	80.43	67.25	52.12	29.44	12.40	3.56
10	3.56	12.62	28.24	51.80	66.42	81.10	84.31	82.13	69.87	52.74	30.68	12.95	3.69
8	3.56	12.76	28.41	51.17	67.26	82.38	86.94	82.84	69.58	53.34	30.89	13.84	3.83
6	3.71	12.33	29.33	51.02	68.81	82.75	87.46	82.46	69.77	54.10	31.13	14.00	4.25
4	4.02	12.44	29.33	50.20	67.79	80.61	83.58	80.73	68.15	50.58	30.47	13.41	4.48
2	4.05	12.92	30.30	50.17	67.24	79.29	82.05	78.11	66.98	50.94	29.27	13.08	4.34
0	3.95	12.94	29.52	50.89	67.94	80.37	83.40	79.84	69.43	50.67	29.73	12.82	4.11
-2	3.96	12.84	29.44	51.19	68.26	82.58	88.61	80.77	68.04	51.38	29.47	13.05	3.96
-4	3.70	12.63	29.65	50.93	69.96	82.59	89.66	83.72	70.96	52.81	29.67	13.00	3.80
-6	3.41	12.14	28.30	52.20	67.01	83.05	88.24	85.30	70.23	51.74	30.35	12.55	3.69
-8	3.34	12.04	27.91	50.81	67.85	81.08	86.13	82.49	70.70	53.56	31.32	13.73	3.70
-10	3.46	12.20	28.41	50.95	66.62	82.06	86.42	82.82	70.27	53.34	31.40	14.12	4.01
-12	3.36	12.03	28.04	49.20	67.72	81.33	86.37	80.77	67.54	53.15	31.32	14.37	4.21
-14	3.46	10.80	24.85	42.59	58.86	71.53	71.01	69.43	58.51	44.23	26.65	12.69	4.04

Center Point Irradiance	83.40	mW/cm^2	Target Area Radiant Power	219.1	W
Maximum Irradiance	89.66	mW/cm^2	Average Irradiance	47.17	mW/cm^2
Minimum Irradiance	3.31	mW/cm^2	Percent area over 20mW/cm^2	74.8	%
Standard Deviation	29.36	mW/cm^2	Percent area over 30mW/cm^2	64.1	%
Coefficient of Variation	66.7	%	Percent area over 40mW/cm^2	57.1	%

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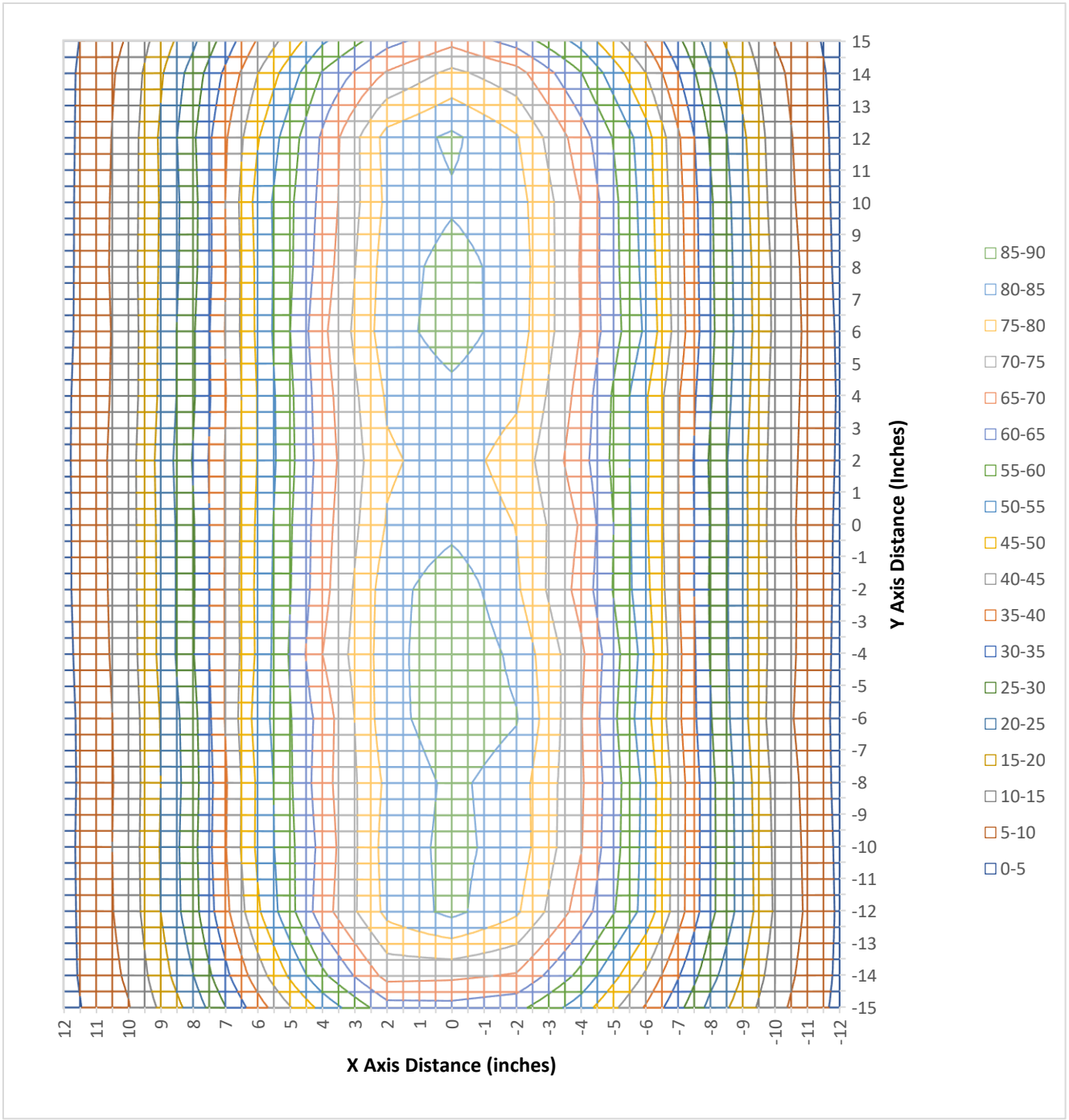
Report of Test

Test Report Number: LLIA003077-003C-R01*

Total Irradiance (570-1100nm) in mW/cm^2
Test Distance = 12 inches



LightLab INTERNATIONAL ALLENTOWN LLC

Test Report Number: LLIA003077-003C-R01*

Face Target Area
Total Irradiance (570-1100nm) in mW/cm^2
Test Distance = 12 inches

Y Axis Distance (inches) \ X Axis Distance (inches)	-2	0	2
4	80.61	83.58	80.73
2	79.29	82.05	78.11
0	80.37	83.40	79.84
-2	82.58	88.61	80.77
-4	82.59	89.66	83.72

Center Point Irradiance	83.40	mW/cm^2	Target Area Radiant Power	31.5	W
Maximum Irradiance	89.66	mW/cm^2	Average Irradiance	81.42	mW/cm^2
Minimum Irradiance	78.11	mW/cm^2	Percent area over $20mW/cm^2$	100.0	%
Standard Deviation	3.20	mW/cm^2	Percent area over $30mW/cm^2$	100.0	%
Coefficient of Variation	3.9	%	Percent area over $40mW/cm^2$	100.0	%

North America (issuing laboratory)
LightLab International Allentown, LLC
905 Harrison Street, Suite 135
Allentown, PA 18103 USA
Ph: +1 484-273-0705
Fx: +1 484-209-5779
www.lightlaballentown.com

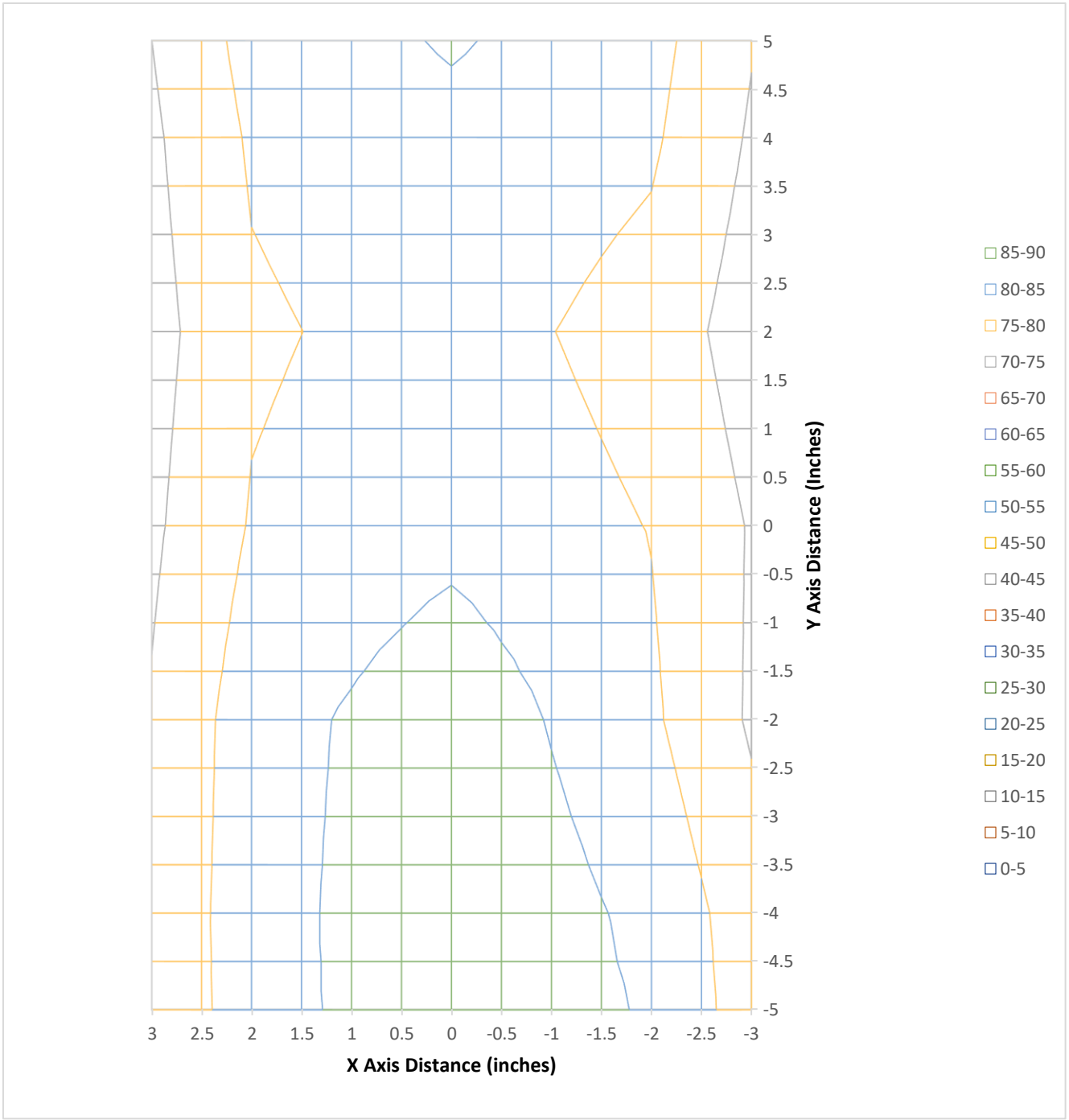
Australasia & S.E. Asia
LightLab International
50 Redcliffe Gardens Drive
Clontarf - Queensland, 4019, Australia
Ph : +61 7 3283 7862
Fx : +61 7 3283 8751
www.lightlabint.com

LightLab INTERNATIONAL ALLENTOWN LLC

Report of Test

Test Report Number: LLIA003077-003C-R01*

Total Irradiance (570-1100nm) in mW/cm^2
Test Distance = 12 inches



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Test Report Number: LLIA003077-003C-R01*

Test Equipment Configuration:	LightLab International Allentown Application Distance Measurement Grid Measurements acquired using spectral irradiance meters (350-1700nm) The rectangular scan method was employed using cartesian coordinates. No symmetry was applied to the results.
Test Procedure:	Tested in accordance with the applicable sections of: LM-91-22, LM-79-24, LM-58-20
Significance:	The laboratory has not participated in the selection of samples to be tested. All testing is performed on the understanding that the significance of the report is limited to the extent that the test sample is representative of production units.
Notes:	The measurements and other derived quantities contained in this report are based on the absolute data as measured. Prorating the performance of the sample for the use of other component combinations (such as lamp / LED / Ballast / driver), or for use in different environmental conditions than that tested, may produce erroneous results. This report is free of erasures and corrections This report may contain data that are not covered by the NVLAP accreditation. Quantities marked with ‡ are not covered. 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.

Revision History: R01 - 10/22/2026 - Corrected typo on front page Xmin and Xmax values.

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