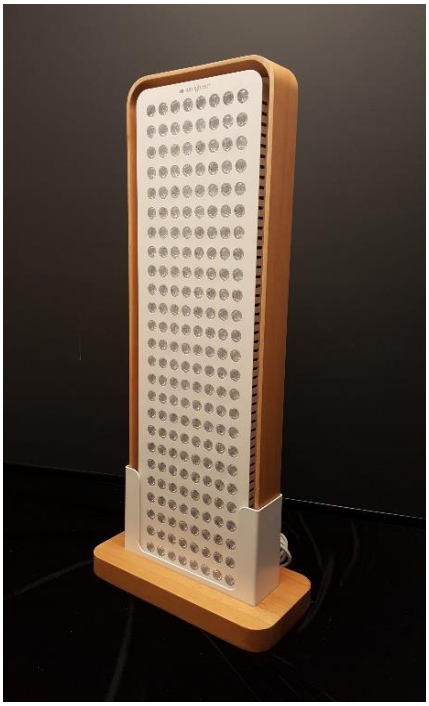
LightLab INTERNATIONAL ALLENTOWN LLC

Radiant Flux Test Report

LLIA003060-001A-R01*

Catalog Number: Red Light Therapy Panel
Portable, formed steel housing with decorative wooden trim,
aluminum back panel with 4 cooling fans behind LEDs
200 LEDs, 100 Red and 100 NIR LEDs each with clear plastic conical optic in front.
Two GLB-200-60 LED drivers and one ZF120A-1202000 fan power supply



Performance Summary

Total Radiometric (350-1700nm)		
Total Radiant Flux	145.97	W
Radiant Efficiency	44.1	% (W_r/W_e)
Radiometric Range: 570-1100nm		
Radiant Flux (570-1100nm)	145.99	W
Red/Total Red Ratio*	99.2	%
Deep Red/Total Red Ratio*	0.8	%
NIR/Total NIR Ratio*	99.4	%
Deep NIR/Total NIR Ratio*	0.6	%

*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)	663, 857	nm
Luminous Flux	4903.8	Lumens
Luminous Efficacy	14.8	Lm/W

Prepared For:
Sunlighten
10975 El Monte Street
Leawood, KS 66211, USA

*This test report supersedes test report LLIA003060-001A

Test date: 09/21/2026
Report date: 10/22/2026

Signed: Michael L. Grather Digitally signed by Michael L. Grather Date: 2026.10.23 12:53:44 -04'00'

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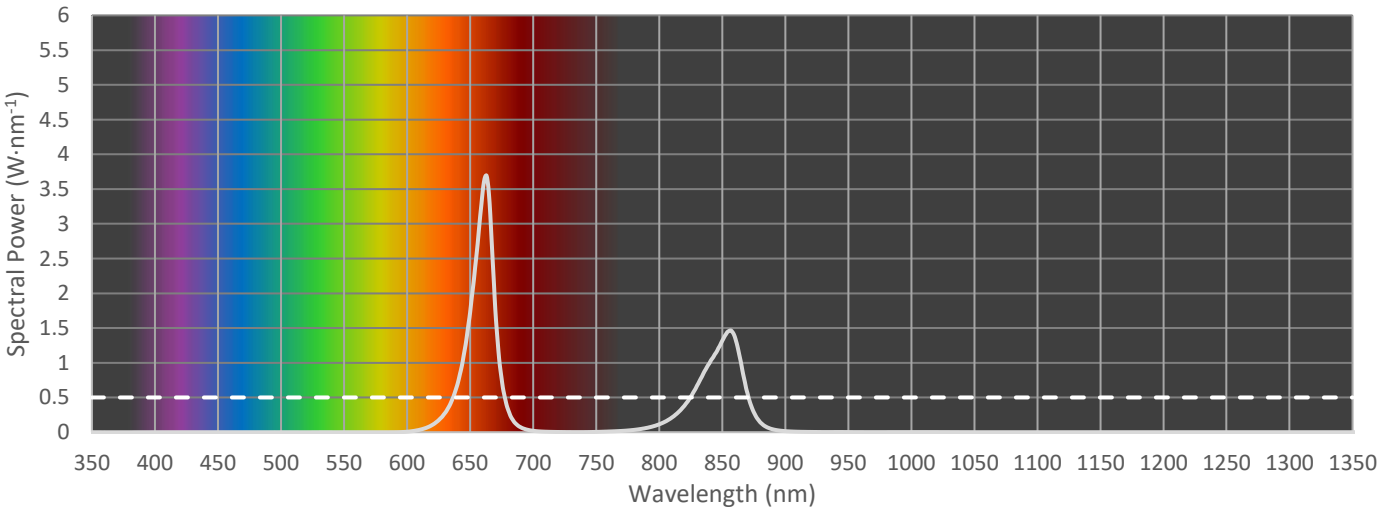
Test Report Number: LLIA003060-001A-R01*

Radiant Flux Tabulation			
Waveband (nm)	Radiant Flux (W_r)	Percent of Total	Efficiency (W_r/W_e)
350-500	0.00	0.0%	0.000
500-570	0.00	0.0%	0.000
Amber 570-600	0.03	0.0%	0.000
Red 600-700	85.97	58.9%	0.260
Deep Red 700-780	0.69	0.5%	0.002
NIR 780-900	58.95	40.4%	0.178
Deep NIR 900-1100	0.37	0.3%	0.001
570-1100	145.99	100.0%	0.441
Total 350-1700	145.97	100.0%	0.441



LightLab INTERNATIONAL ALLENTOWN LLC

Test Report Number: LLIA003060-001A-R01*

Electrical Data

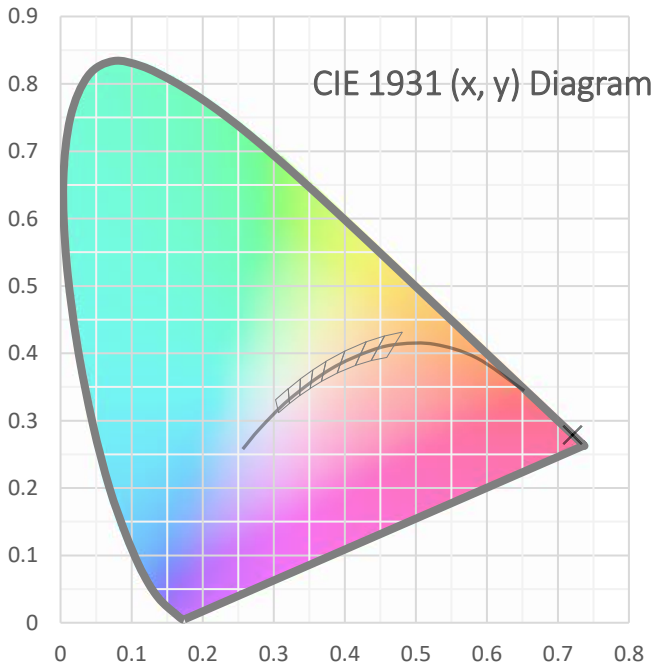
Voltage	120.0	Vac
Current	2.770	A
Power	331.1	W
Frequency	60.00	Hz
Power Factor	0.996	
Current THD	6.4	%

Spectral Power of Select Wavelengths

Wavelength (nm)	Spectral Power ($W \cdot nm^{-1}$)
590	0.0005
630	0.2741
660	3.4673
810	0.2106
830	0.6692
850	1.3150
1064	0.0000

Photometric (Human Vision) Data

Total Luminous Flux		4903.8	lm
Luminous Efficacy		14.8	lm/W
Chromaticity	(x,y)	(0.7210, 0.2787)	
	(u',v')	(0.5884, 0.5116)	
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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Test Report Number: LLIA003060-001A-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:	25.6 °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
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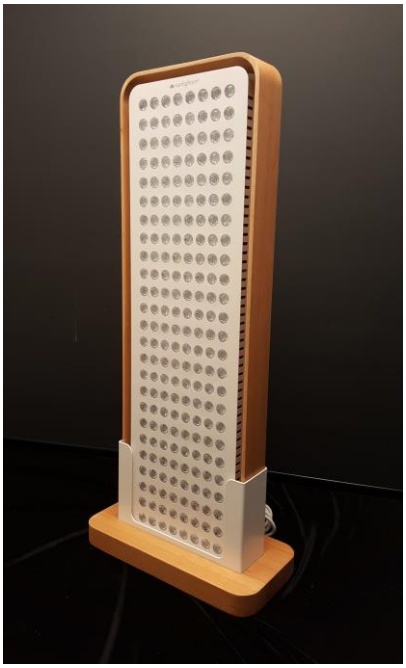
ALLENTOWN LLC

Radiant Flux Stabilization Report

LLIA003060-001B-R01*

Catalog Number: Red Light Therapy Panel
Portable, formed steel housing with decorative wooden trim,
aluminum back panel with 4 cooling fans behind LEDs
200 LEDs, 100 Red and 100 NIR LEDs each with clear plastic conical optic in front.
Two GLB-200-60 LED drivers and one ZF120A-1202000 fan power supply



Test Equipment:

Irradiance measurements were acquired with LightLab asset A108-Gigahertz-Optik BTS2048-VL-TEC Spectral Irradiance Meter 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:
Sunlighten
10975 El Monte Street
Leawood, KS 66211, USA

*This test report supersedes test report LLIA003060-001B

Test date: 09/30/2026
Report date: 10/22/2026

LightLab INTERNATIONAL ALLENTOWN LLC

Test Report Number: LLIA003060-001B-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	76.5	41.3	35.2
1.5	76.1	41.1	35.0
2.5	76.0	41.0	35.0
3.5	75.8	40.9	34.8
4.5	75.7	40.9	34.8
5.5	75.6	40.8	34.7
6.5	75.5	40.8	34.7
7.5	75.4	40.8	34.7
8.5	75.5	40.8	34.7
9.5	75.4	40.8	34.6
10.5	75.4	40.8	34.6
11.5	75.4	40.7	34.6
12.5	75.5	40.8	34.7
13.5	75.4	40.7	34.6
14.5	75.3	40.7	34.6
15.5	75.3	40.7	34.6
16.5	75.4	40.7	34.6
17.5	75.4	40.7	34.6
18.5	75.4	40.7	34.6
19.5	75.3	40.7	34.6

15 Minute 570-1100nm Irradiance Retention
98.5%

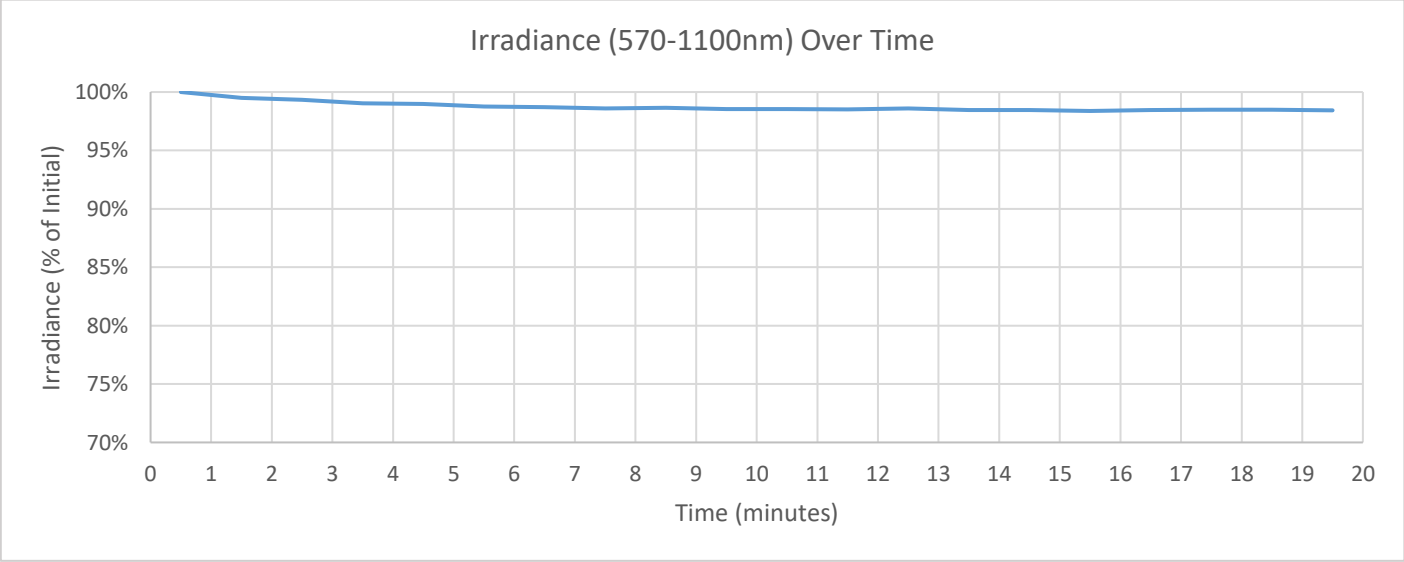
20 Minute 570-1100nm Irradiance Retention
98.4%

15 Minute 600-780nm Irradiance Retention
98.7%

20 Minute 600-780nm Irradiance Retention
98.7%

15 Minute 780-1100nm Irradiance Retention
98.2%

20 Minute 780-1100nm Irradiance Retention
98.2%

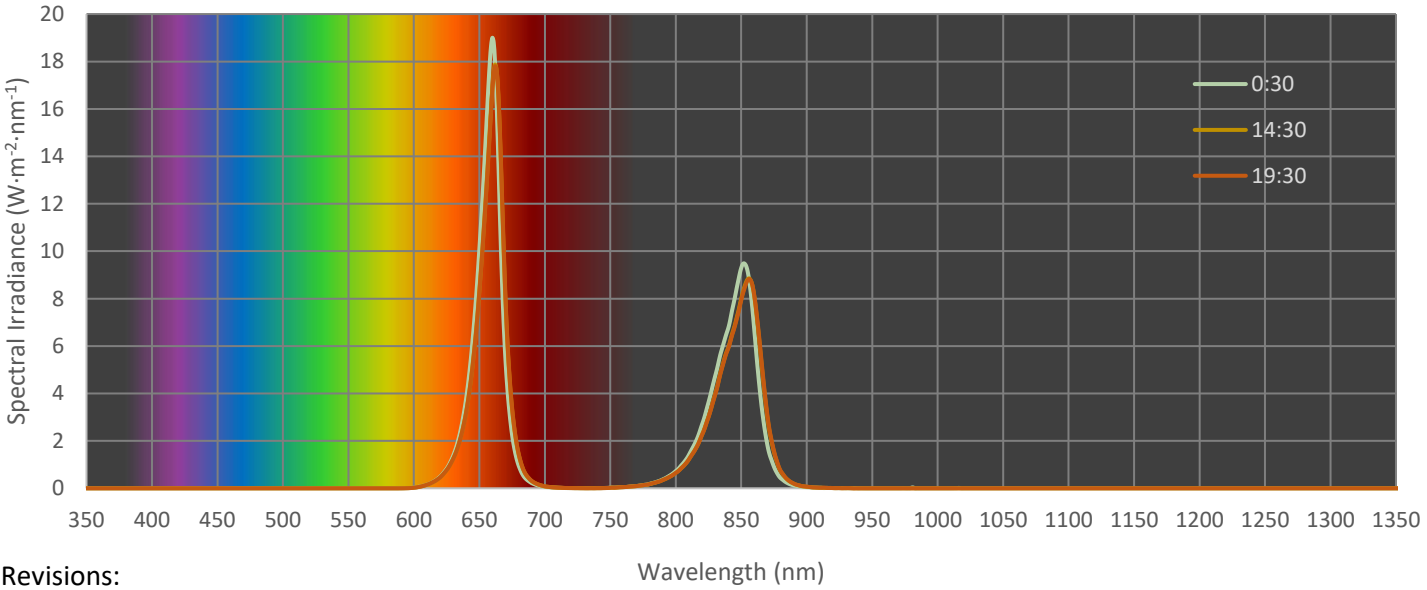


LightLab INTERNATIONAL ALLENTOWN LLC

Test Report Number: LLIA003060-001B-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	660	662	662
2	852	856	856



Revisions:

R01 - 10/22/2026 - Modified scale of Irrad retention plot.

LightLab
INTERNATIONAL
ALLENTOWN LLC

Grid Application Distance Measurement Test Report

Test Report Number: LLIA003060-001C-R01*

Catalog Number: Red Light Therapy Panel
Portable, formed steel housing with decorative wooden trim,
aluminum back panel with 4 cooling fans behind LEDs
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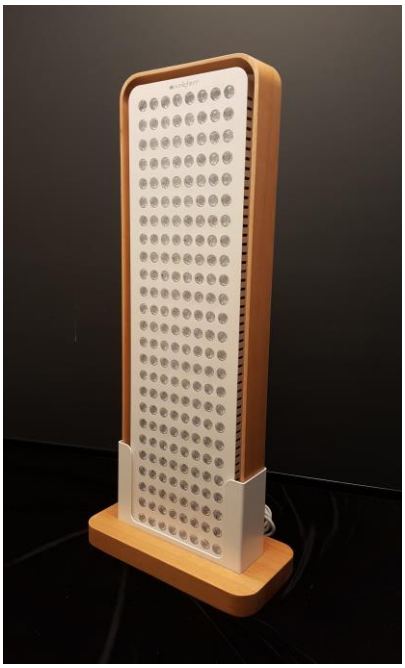

Performance Summary

Electrical		
Voltage	120.0	Vac
Current	2.791	A
Power	333.5	W
Frequency	60.00	Hz
Power Factor	0.996	
Current THD	6.3	%
Ambient Temperature	25.3	°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 Spectral Irradiance Meter 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:
Sunlighten
10975 El Monte Street
Leawood, KS 66211, USA

*This test report supersedes test report LLIA003060-001C

Test date: 09/30/2026
Report date: 10/22/2026

LightLab INTERNATIONAL ALLENTOWN LLC

Test Report Number: LLIA003060-001C-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	0.14	0.16	0.18	0.20	0.21	0.22	0.22	0.22	0.21	0.20	0.18	0.17	0.15
28	0.18	0.20	0.23	0.25	0.27	0.29	0.29	0.28	0.27	0.25	0.23	0.21	0.18
26	0.22	0.25	0.29	0.33	0.37	0.39	0.40	0.38	0.36	0.33	0.30	0.26	0.23
24	0.27	0.32	0.39	0.48	0.58	0.65	0.66	0.62	0.54	0.46	0.39	0.33	0.28
22	0.34	0.43	0.63	1.07	1.68	2.27	2.46	2.05	1.47	0.93	0.56	0.42	0.35
20	0.43	0.66	1.37	2.52	4.21	5.58	6.23	5.48	3.92	2.41	1.25	0.59	0.43
18	0.55	1.09	2.60	5.26	8.73	12.10	13.14	12.18	8.91	5.17	2.51	1.04	0.54
16	0.69	1.74	4.34	9.06	17.81	31.19	33.10	30.71	22.06	9.13	4.25	1.68	0.69
14	0.83	2.42	6.01	12.99	33.65	55.79	57.77	54.44	30.18	13.46	6.11	2.30	0.85
12	0.94	2.77	7.37	15.84	41.04	65.51	70.69	62.61	40.63	16.76	7.59	2.80	0.99
10	1.02	2.97	8.22	17.45	40.23	66.61	72.96	65.70	44.77	18.77	8.52	3.17	1.08
8	1.07	3.11	8.41	18.45	42.61	66.61	70.12	66.77	44.73	19.67	8.86	3.23	1.13
6	1.12	3.24	8.57	18.53	43.14	66.90	71.39	65.80	42.53	19.39	8.99	3.37	1.18
4	1.17	3.32	8.58	18.62	42.73	70.06	76.86	71.79	44.76	19.18	8.94	3.45	1.22
2	1.19	3.30	8.77	18.67	44.84	68.92	76.20	73.62	46.76	19.46	9.02	3.48	1.24
0	1.19	3.16	8.74	18.69	40.36	67.08	75.32	68.19	46.78	19.63	8.97	3.57	1.26
-2	1.18	3.13	8.67	18.72	43.48	67.39	73.07	68.76	43.83	19.42	8.84	3.42	1.26
-4	1.16	3.06	8.52	18.87	44.92	70.49	75.85	70.65	44.50	19.35	8.80	3.42	1.24
-6	1.14	3.08	8.39	18.70	46.09	72.24	79.10	70.81	42.85	19.04	8.57	3.32	1.21
-8	1.11	2.96	8.31	18.26	43.01	71.54	75.32	68.19	45.33	19.32	8.55	3.20	1.16
-10	1.05	2.82	8.16	17.64	39.02	64.04	69.25	65.45	45.68	18.72	8.51	3.14	1.08
-12	0.96	2.65	7.35	16.18	39.24	63.86	67.72	61.89	37.17	17.01	7.75	2.89	0.99
-14	0.84	2.24	6.10	13.26	35.45	59.98	65.21	59.41	33.41	14.12	6.31	2.38	0.87
-16	0.70	1.66	4.21	9.16	18.86	35.79	35.62	36.77	26.52	9.99	4.42	1.78	0.73
-18	0.55	1.06	2.50	5.14	8.93	12.97	14.62	13.67	9.99	5.71	2.78	1.12	0.60
-20	0.44	0.63	1.23	2.49	4.22	5.92	6.75	6.11	4.39	2.73	1.38	0.66	0.48
-22	0.35	0.44	0.62	1.02	1.54	2.12	2.44	2.19	1.61	1.02	0.63	0.47	0.39
-24	0.28	0.34	0.41	0.50	0.60	0.67	0.70	0.67	0.60	0.51	0.43	0.36	0.31
-26	0.23	0.27	0.31	0.36	0.40	0.43	0.44	0.43	0.40	0.37	0.33	0.29	0.25
-28	0.18	0.21	0.24	0.27	0.30	0.32	0.32	0.32	0.30	0.28	0.26	0.23	0.20
-30	0.15	0.17	0.19	0.21	0.23	0.24	0.25	0.24	0.23	0.22	0.20	0.18	0.16

Center Point Irradiance	75.32	mW/cm^2	
Maximum Irradiance	79.10	mW/cm^2	
Minimum Irradiance	0.14	mW/cm^2	
Standard Deviation	22.37	mW/cm^2	
Coefficient of Variation	153.7	%	
Target Area Radiant Power	150.7	W	
Average Irradiance	16.22	mW/cm^2	
Percent area over 20mW/cm^2	25.3	%	
Percent area over 30mW/cm^2	21.5	%	
Percent area over 40mW/cm^2	16.8	%	

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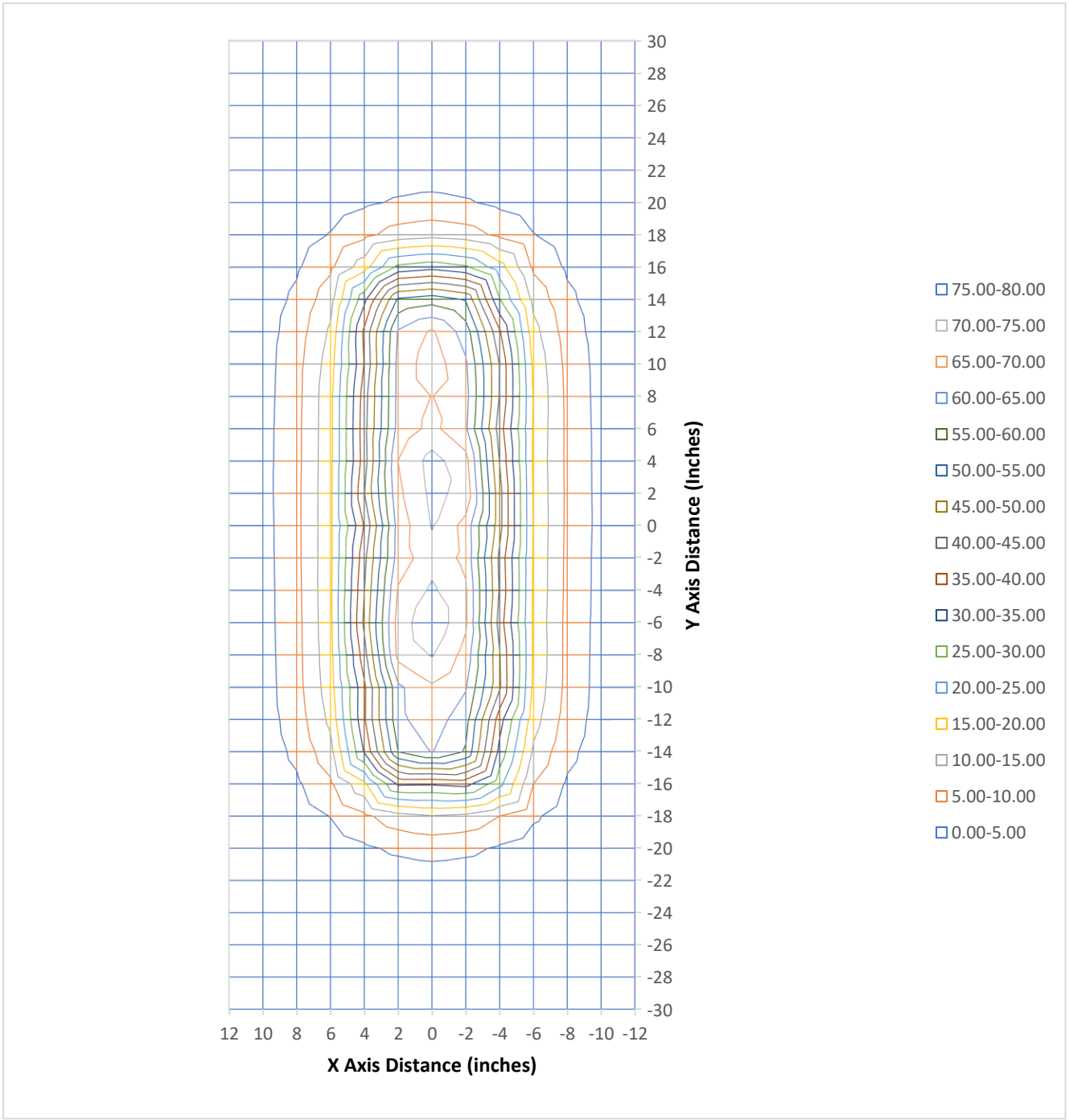
Report of Test

Test Report Number: LLIA003060-001C-R01*

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



LightLab INTERNATIONAL ALLENTOWN LLC

Test Report Number: LLIA003060-001C-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	0.83	2.42	6.01	12.99	33.65	55.79	57.77	54.44	30.18	13.46	6.11	2.30	0.85
12	0.94	2.77	7.37	15.84	41.04	65.51	70.69	62.61	40.63	16.76	7.59	2.80	0.99
10	1.02	2.97	8.22	17.45	40.23	66.61	72.96	65.70	44.77	18.77	8.52	3.17	1.08
8	1.07	3.11	8.41	18.45	42.61	66.61	70.12	66.77	44.73	19.67	8.86	3.23	1.13
6	1.12	3.24	8.57	18.53	43.14	66.90	71.39	65.80	42.53	19.39	8.99	3.37	1.18
4	1.17	3.32	8.58	18.62	42.73	70.06	76.86	71.79	44.76	19.18	8.94	3.45	1.22
2	1.19	3.30	8.77	18.67	44.84	68.92	76.20	73.62	46.76	19.46	9.02	3.48	1.24
0	1.19	3.16	8.74	18.69	40.36	67.08	75.32	68.19	46.78	19.63	8.97	3.57	1.26
-2	1.18	3.13	8.67	18.72	43.48	67.39	73.07	68.76	43.83	19.42	8.84	3.42	1.26
-4	1.16	3.06	8.52	18.87	44.92	70.49	75.85	70.65	44.50	19.35	8.80	3.42	1.24
-6	1.14	3.08	8.39	18.70	46.09	72.24	79.10	70.81	42.85	19.04	8.57	3.32	1.21
-8	1.11	2.96	8.31	18.26	43.01	71.54	75.32	68.19	45.33	19.32	8.55	3.20	1.16
-10	1.05	2.82	8.16	17.64	39.02	64.04	69.25	65.45	45.68	18.72	8.51	3.14	1.08
-12	0.96	2.65	7.35	16.18	39.24	63.86	67.72	61.89	37.17	17.01	7.75	2.89	0.99
-14	0.84	2.24	6.10	13.26	35.45	59.98	65.21	59.41	33.41	14.12	6.31	2.38	0.87

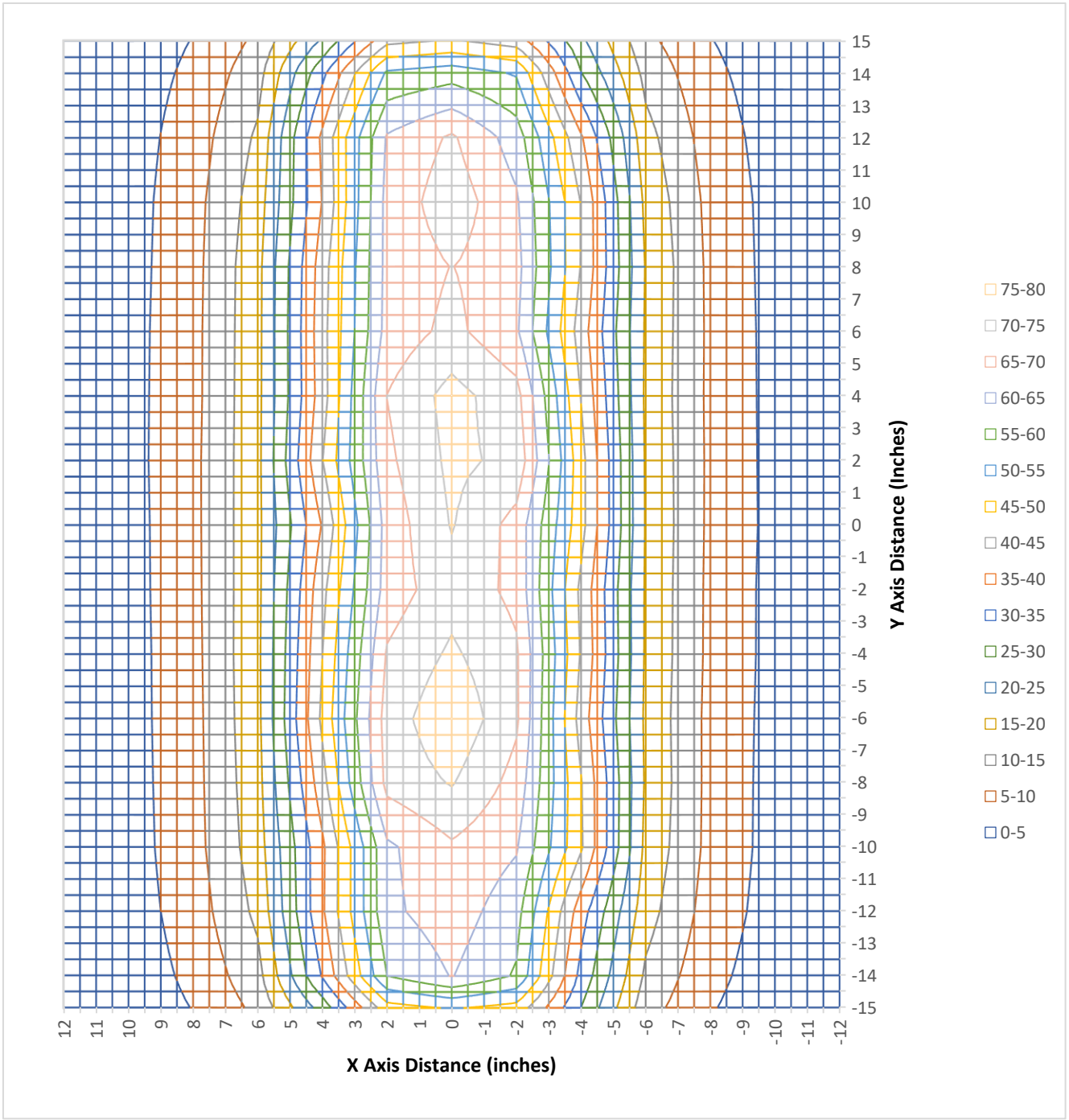
Center Point Irradiance	75.32	mW/cm^2	Target Area Radiant Power	133.7	W
Maximum Irradiance	79.10	mW/cm^2	Average Irradiance	28.78	mW/cm^2
Minimum Irradiance	0.83	mW/cm^2	Percent area over $20mW/cm^2$	46.3	%
Standard Deviation	26.42	mW/cm^2	Percent area over $30mW/cm^2$	40.7	%
Coefficient of Variation	98.6	%	Percent area over $40mW/cm^2$	33.0	%

LightLab INTERNATIONAL ALLENTOWN LLC

Report of Test

Test Report Number: LLIA003060-001C-R01*

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



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Test Report Number: LLIA003060-001C-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	70.06	76.86	71.79
2	68.92	76.20	73.62
0	67.08	75.32	68.19
-2	67.39	73.07	68.76
-4	70.49	75.85	70.65

Center Point Irradiance	75.32	mW/cm^2	Target Area Radiant Power	26.9	W
Maximum Irradiance	76.86	mW/cm^2	Average Irradiance	69.43	mW/cm^2
Minimum Irradiance	67.08	mW/cm^2	Percent area over 20mW/cm^2	100.0	%
Standard Deviation	3.34	mW/cm^2	Percent area over 30mW/cm^2	100.0	%
Coefficient of Variation	4.7	%	Percent area over 40mW/cm^2	100.0	%

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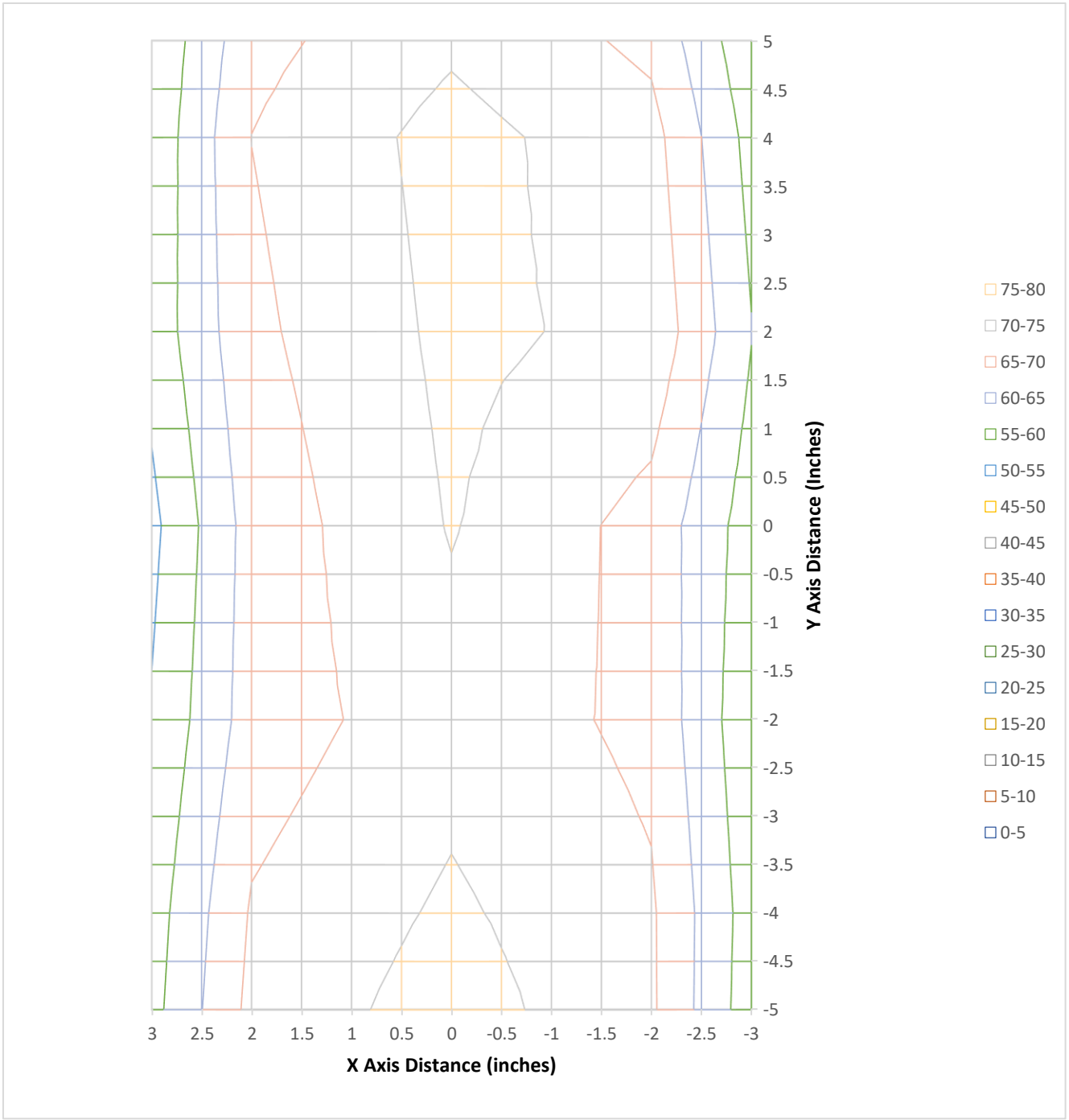
LightLab INTERNATIONAL ALLENTOWN LLC

Report of Test

Test Report Number: LLIA003060-001C-R01*

Total Irradiance (570-1100nm) in mW/cm^2

Test Distance = 12 inches



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LightLab INTERNATIONAL ALLENTOWN LLC

Test Report Number: LLIA003060-001C-R01*

Test Equipment Configuration:	LightLab International Allentown Application Distance Measurement Grid Measurements acquired using a spectral irradiance meter (350-1050nm) 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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