LightLab INTERNATIONAL ALLENTOWN LLC

Radiant Flux Test Report

LLIA003081-001A-R01*

Catalog Number: MitoADAPT MAX 4.0 Setting 1.0 (Red + NIR)
Portable, formed white steel housing, 6 aluminum
heatsinks with 5 cooling fans behind LEDs.
288 dual chip Red "590nm, 630nm, 660nm, 670nm" and NIR "810nm, 830nm, 850nm, 940nm" LEDs, each with a conical plastic optic in front. Four unmarked LED power supplies and 1 unmarked fan power supply.



Performance Summary

Total Radiometric (350-1700nm)		
Total Radiant Flux	143.12	W
Radiant Efficiency	31.2	% (W_r/W_e)
Radiometric Range: 570-1100nm		
Radiant Flux (570-1100nm)	142.96	W
Red/Total Red Ratio*	93.9	%
Deep Red/Total Red Ratio*	6.1	%
NIR/Total NIR Ratio*	77.8	%
Deep NIR/Total NIR Ratio*	22.2	%

*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)	599, 632, 662, 811, 831, 948	nm
Luminous Flux	7663.4	Lumens
Luminous Efficacy	16.7	Lm/W

Prepared For:
Mito Red Light
9319 N 94th Way #400
Scottsdale, AZ 85258, USA

*This test report supersedes test report LLIA003081-001A

Test date: 09/18/2026
Report date: 10/22/2026

Signed: Michael L. Grather Digitally signed by Michael L. Grather Date: 2026.10.23 14:11:47 -04'00'

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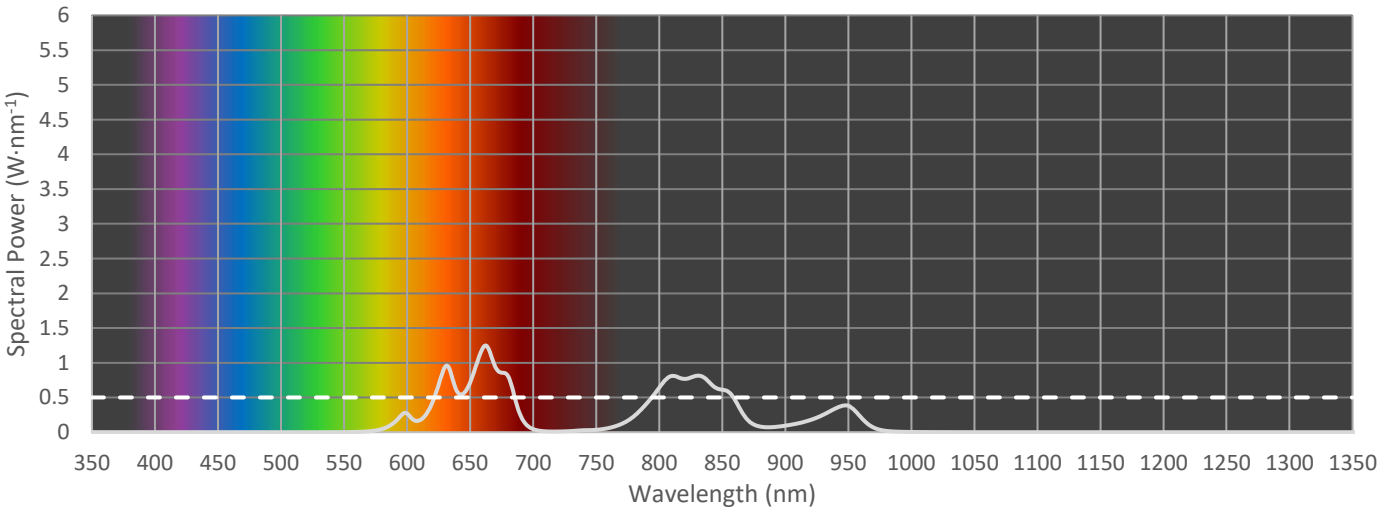
Radiant Flux Tabulation			
Waveband (nm)	Radiant Flux (W_r)	Percent of Total	Efficiency (W_r/W_e)
350-500	0.05	0.0%	0.000
500-570	0.12	0.1%	0.000
Amber 570-600	3.38	2.4%	0.007
Red 600-700	61.72	43.1%	0.135
Deep Red 700-780	3.99	2.8%	0.009
NIR 780-900	57.45	40.1%	0.125
Deep NIR 900-1100	16.42	11.5%	0.036
570-1100	142.96	99.9%	0.312
Total 350-1700	143.12	100.0%	0.312



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Test Report Number: LLIA003081-001A-R01*

Electrical Data

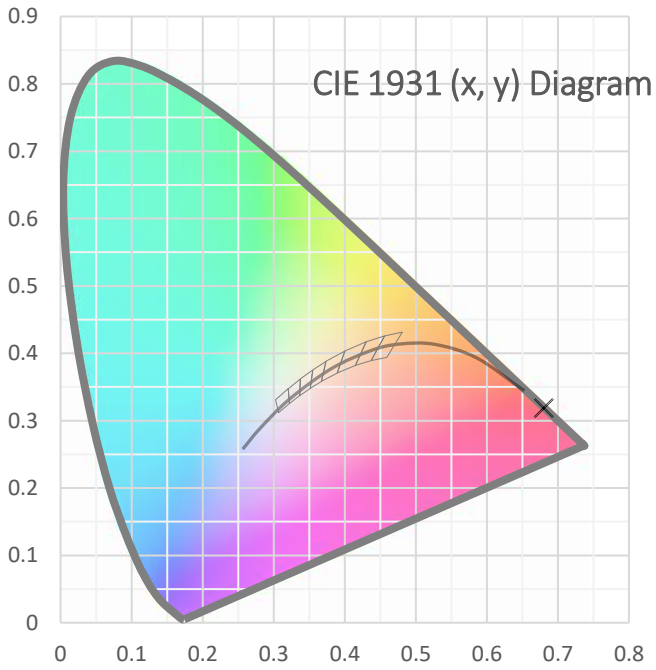
Voltage	120.0	Vac
Current	3.833	A
Power	458.5	W
Frequency	60.00	Hz
Power Factor	0.997	
Current THD	6.8	%

Spectral Power of Select Wavelengths

Wavelength (nm)	Spectral Power ($W \cdot nm^{-1}$)
590	0.1422
630	0.9351
660	1.2074
810	0.8091
830	0.8125
850	0.6117
1064	0.0000

Photometric (Human Vision) Data

Total Luminous Flux		7663.4	lm
Luminous Efficacy		16.7	lm/W
Chromaticity	(x,y)	(0.6802, 0.3187)	
	(u',v')	(0.4980, 0.5250)	
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: LLIA003081-001A-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:	25.1 °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:

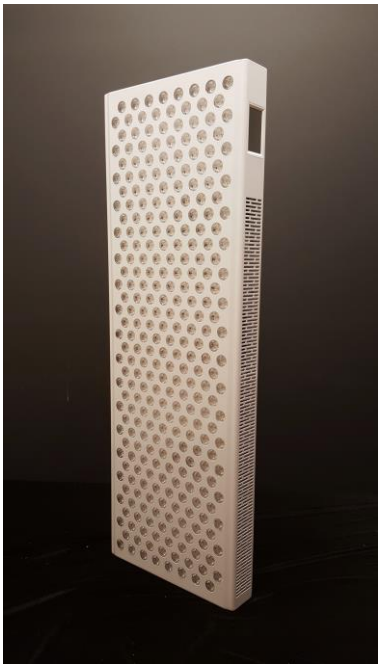
R01 - 10/22/2026 - Modified scale of SPD plot and added 0.5 W/nm line

LightLab
INTERNATIONAL
ALLENTOWN LLC

Radiant Flux Stabilization Report

LLIA003081-001B-R01*

Catalog Number: MitoADAPT MAX 4.0 Setting 1.0 (Red + NIR)
Portable, formed white steel housing, 6 aluminum
heatsinks with 5 cooling fans behind LEDs.
288 dual chip Red "590nm, 630nm, 660nm, 670nm" and NIR "810nm, 830nm, 850nm, 940nm" LEDs, each with a conical plastic optic in front. Four unmarked LED power supplies and 1 unmarked 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:
Mito Red Light
9319 N 94th Way #400
Scottsdale, AZ 85258, USA

*This test report supersedes test report LLIA003081-001B

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

LightLab INTERNATIONAL ALLENTOWN LLC

Test Report Number: LLIA003081-001B-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	55.7	25.4	28.7
1.5	55.6	25.5	28.6
2.5	55.6	25.6	28.5
3.5	55.5	25.7	28.5
4.5	55.4	25.7	28.4
5.5	55.3	25.7	28.4
6.5	55.3	25.7	28.4
7.5	55.3	25.7	28.4
8.5	55.2	25.7	28.4
9.5	55.2	25.7	28.3
10.5	55.2	25.7	28.3
11.5	55.3	25.8	28.4
12.5	55.3	25.8	28.4
13.5	55.3	25.8	28.4
14.5	55.2	25.8	28.3
15.5	55.2	25.8	28.3
16.5	55.2	25.7	28.4
17.5	55.2	25.8	28.3
18.5	55.3	25.8	28.3
19.5	55.3	25.8	28.3

15 Minute 570-1100nm Irradiance Retention
99.1%

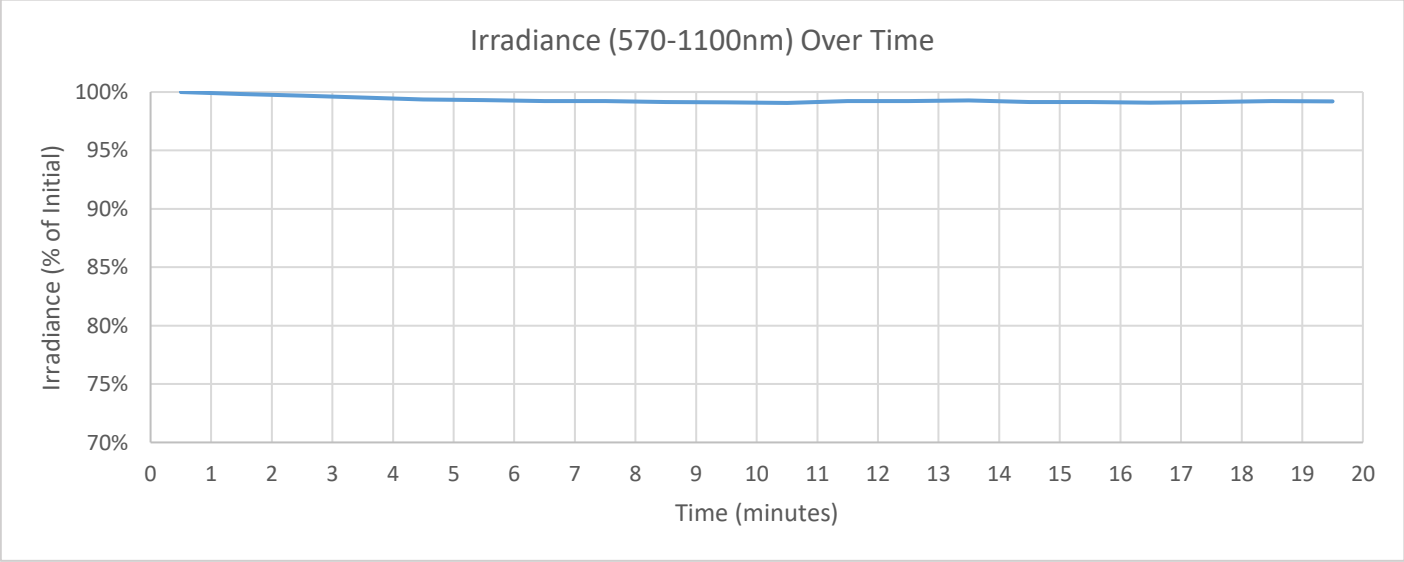
20 Minute 570-1100nm Irradiance Retention
99.2%

15 Minute 600-780nm Irradiance Retention
101.6%

20 Minute 600-780nm Irradiance Retention
101.8%

15 Minute 780-1100nm Irradiance Retention
98.6%

20 Minute 780-1100nm Irradiance Retention
98.6%

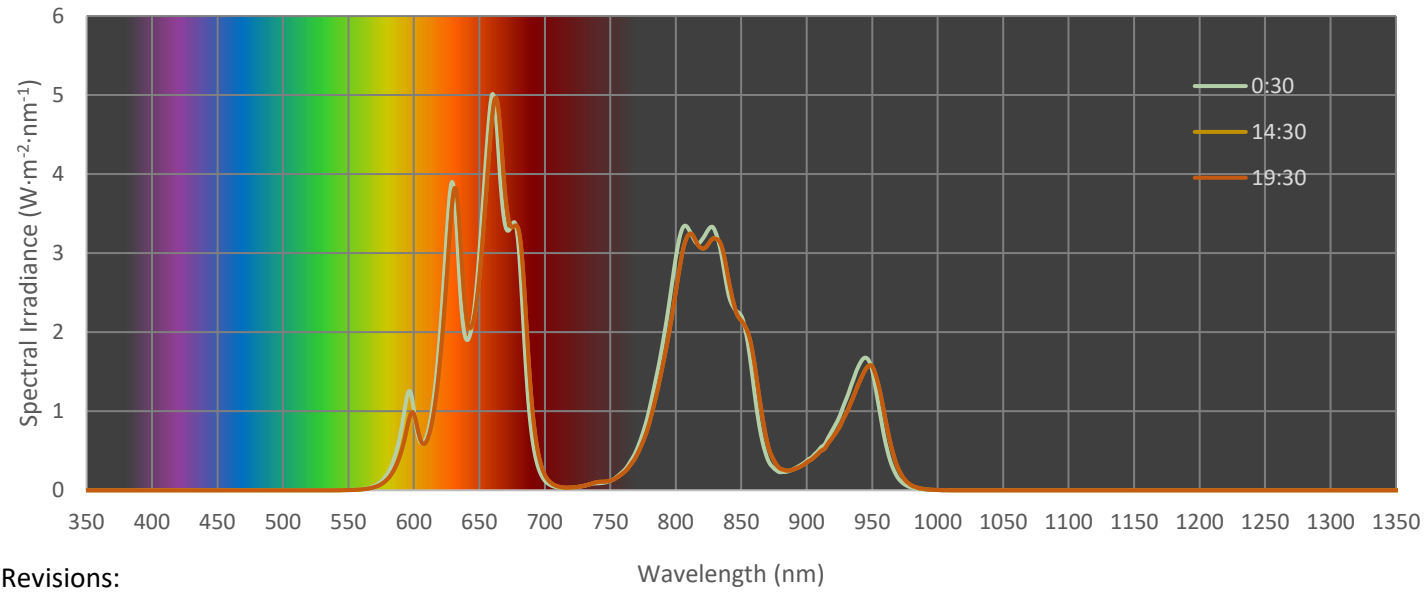


LightLab INTERNATIONAL ALLENTOWN LLC

Test Report Number: LLIA003081-001B-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	597	599	599
2	629	631	632
3	660	662	663
4	676	678	678
5	807	811	811
6	828	829	829
7	945	948	949



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: LLIA003081-001C-R01*

Catalog Number: MitoADAPT MAX 4.0 Setting 1.0 (Red + NIR)
Portable, formed white steel housing, 6 aluminum
heatsinks with 5 cooling fans behind LEDs.
288 dual chip Red "590nm, 630nm, 660nm, 670nm" and NIR "810nm, 830nm, 850nm, 940nm" LEDs, each with a conical plastic optic in front. Four unmarked LED power supplies and 1 unmarked fan power supply.



Performance Summary

Electrical		
Voltage	120.0	Vac
Current	3.864	A
Power	462.7	W
Frequency	60.00	Hz
Power Factor	0.997	
Current THD	6.7	%
Ambient Temperature	25.2	°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:
Mito Red Light
9319 N 94th Way #400
Scottsdale, AZ 85258, USA

*This test report supersedes test report LLIA003081-001C

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

LightLab INTERNATIONAL ALLENTOWN LLC

Test Report Number: LLIA003081-001C-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	0.25	0.27	0.30	0.32	0.34	0.35	0.35	0.35	0.33	0.30	0.28	0.25	0.22
28	0.32	0.35	0.40	0.44	0.47	0.49	0.50	0.48	0.46	0.41	0.37	0.33	0.29
26	0.40	0.46	0.53	0.60	0.66	0.70	0.71	0.69	0.64	0.57	0.51	0.43	0.36
24	0.50	0.59	0.72	0.86	0.98	1.06	1.09	1.04	0.95	0.81	0.68	0.56	0.46
22	0.62	0.79	1.04	1.33	1.80	2.28	2.40	2.41	2.01	1.35	0.96	0.74	0.58
20	0.78	1.08	1.56	2.22	4.81	7.19	7.36	6.77	6.11	2.84	1.41	1.00	0.73
18	0.99	1.71	2.99	5.54	14.01	19.09	18.99	18.43	15.90	6.53	2.50	1.42	0.93
16	1.20	2.50	4.81	12.26	29.40	37.52	37.93	35.73	29.75	13.57	5.05	2.34	1.11
14	1.44	3.29	7.35	17.12	37.40	49.10	48.81	48.36	38.73	16.48	5.67	2.76	1.26
12	1.60	3.71	7.66	18.18	40.67	54.57	56.61	56.36	41.83	16.79	5.81	2.80	1.40
10	1.73	3.82	8.40	19.41	40.25	53.53	59.07	56.60	43.63	17.44	6.57	3.28	1.52
8	1.82	3.85	8.02	18.35	41.57	56.11	56.49	56.38	42.36	17.86	6.49	2.86	1.59
6	1.90	4.23	8.69	19.25	40.49	53.91	58.32	55.17	43.02	18.01	7.19	3.41	1.68
4	1.95	4.01	8.28	18.31	40.83	55.08	57.97	56.22	41.82	18.10	7.02	3.36	1.74
2	2.02	4.14	8.57	19.91	41.77	54.84	55.97	54.13	41.28	16.90	6.65	3.30	1.77
0	2.08	4.26	8.78	19.68	41.21	55.58	55.37	55.14	41.34	18.20	6.75	3.31	1.77
-2	2.08	4.61	9.89	21.45	42.24	50.83	52.90	53.03	39.91	17.03	6.65	3.30	1.77
-4	2.19	4.63	9.25	20.61	43.29	56.50	56.79	56.64	41.38	17.52	6.91	3.44	1.74
-6	2.08	4.51	9.47	20.68	43.37	55.41	56.43	56.56	41.88	15.87	6.73	3.29	1.69
-8	2.02	4.44	9.29	20.54	44.00	57.99	56.43	56.72	42.30	17.16	6.67	3.10	1.64
-10	1.96	4.52	9.24	20.63	42.15	55.27	55.36	56.66	39.98	15.27	6.17	2.92	1.57
-12	1.83	4.43	9.10	20.99	43.22	53.99	56.16	56.66	41.08	16.02	5.99	2.64	1.44
-14	1.64	3.97	8.47	19.69	39.47	49.47	53.55	52.71	37.18	13.70	4.87	2.44	1.32
-16	1.59	3.86	7.91	16.98	31.19	41.15	42.81	43.60	32.20	12.84	4.97	2.18	1.17
-18	1.20	2.62	5.23	10.55	17.80	23.36	25.74	25.95	18.45	6.27	3.50	1.78	1.02
-20	0.93	1.56	2.07	4.28	7.78	8.89	9.98	12.03	7.79	2.71	1.76	1.19	0.84
-22	0.72	0.94	1.27	1.91	3.17	3.49	3.48	4.15	2.96	1.57	1.18	0.91	0.68
-24	0.56	0.70	0.88	1.06	1.29	1.39	1.40	1.34	1.22	1.01	0.84	0.67	0.55
-26	0.45	0.53	0.62	0.71	0.79	0.84	0.86	0.84	0.77	0.69	0.60	0.52	0.44
-28	0.35	0.40	0.46	0.52	0.56	0.59	0.59	0.58	0.55	0.50	0.45	0.40	0.35
-30	0.28	0.31	0.34	0.37	0.40	0.42	0.42	0.41	0.39	0.36	0.34	0.30	0.27

Center Point Irradiance	55.37	mW/cm^2	
Maximum Irradiance	59.07	mW/cm^2	
Minimum Irradiance	0.22	mW/cm^2	
Standard Deviation	18.84	mW/cm^2	
Coefficient of Variation	136.4	%	
Target Area Radiant Power	142.6	W	
Average Irradiance	15.35	mW/cm^2	
Percent area over 20mW/cm^2	27.7	%	
Percent area over 30mW/cm^2	22.1	%	
Percent area over 40mW/cm^2	17.4	%	

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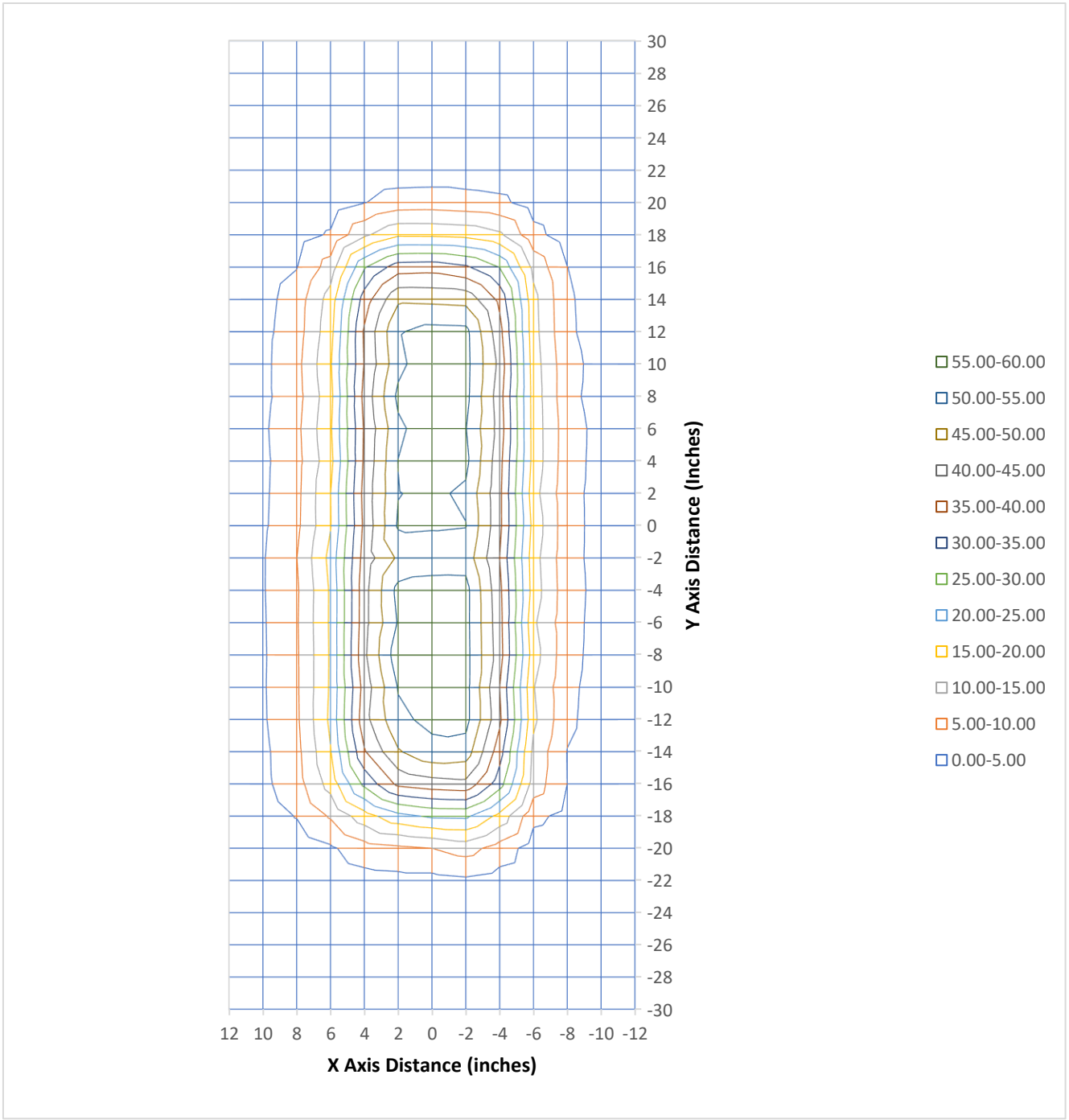
Report of Test

Test Report Number: LLIA003081-001C-R01*

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



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Test Report Number: LLIA003081-001C-R01*

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

Y Axis Distance (inches) \ X Axis Distance (inches)	-12	-10	-8	-6	-4	-2	0	2	4	6	8	10	12
14	1.44	3.29	7.35	17.12	37.40	49.10	48.81	48.36	38.73	16.48	5.67	2.76	1.26
12	1.60	3.71	7.66	18.18	40.67	54.57	56.61	56.36	41.83	16.79	5.81	2.80	1.40
10	1.73	3.82	8.40	19.41	40.25	53.53	59.07	56.60	43.63	17.44	6.57	3.28	1.52
8	1.82	3.85	8.02	18.35	41.57	56.11	56.49	56.38	42.36	17.86	6.49	2.86	1.59
6	1.90	4.23	8.69	19.25	40.49	53.91	58.32	55.17	43.02	18.01	7.19	3.41	1.68
4	1.95	4.01	8.28	18.31	40.83	55.08	57.97	56.22	41.82	18.10	7.02	3.36	1.74
2	2.02	4.14	8.57	19.91	41.77	54.84	55.97	54.13	41.28	16.90	6.65	3.30	1.77
0	2.08	4.26	8.78	19.68	41.21	55.58	55.37	55.14	41.34	18.20	6.75	3.31	1.77
-2	2.08	4.61	9.89	21.45	42.24	50.83	52.90	53.03	39.91	17.03	6.65	3.30	1.77
-4	2.19	4.63	9.25	20.61	43.29	56.50	56.79	56.64	41.38	17.52	6.91	3.44	1.74
-6	2.08	4.51	9.47	20.68	43.37	55.41	56.43	56.56	41.88	15.87	6.73	3.29	1.69
-8	2.02	4.44	9.29	20.54	44.00	57.99	56.43	56.72	42.30	17.16	6.67	3.10	1.64
-10	1.96	4.52	9.24	20.63	42.15	55.27	55.36	56.66	39.98	15.27	6.17	2.92	1.57
-12	1.83	4.43	9.10	20.99	43.22	53.99	56.16	56.66	41.08	16.02	5.99	2.64	1.44
-14	1.64	3.97	8.47	19.69	39.47	49.47	53.55	52.71	37.18	13.70	4.87	2.44	1.32

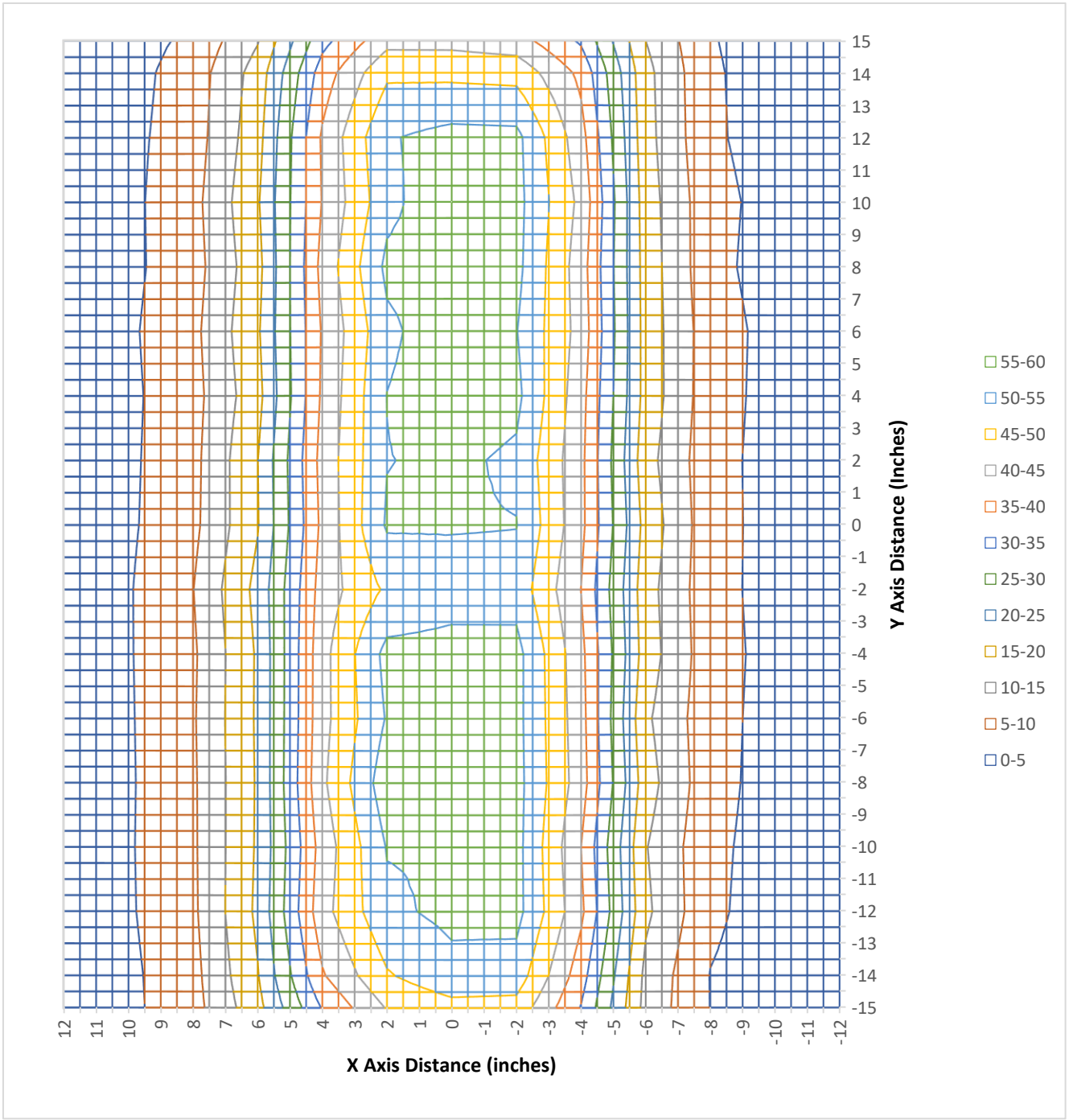
Center Point Irradiance	55.37	mW/cm^2	Target Area Radiant Power	119.0	W
Maximum Irradiance	59.07	mW/cm^2	Average Irradiance	25.61	mW/cm^2
Minimum Irradiance	1.26	mW/cm^2	Percent area over $20mW/cm^2$	47.7	%
Standard Deviation	21.45	mW/cm^2	Percent area over $30mW/cm^2$	40.2	%
Coefficient of Variation	89.9	%	Percent area over $40mW/cm^2$	33.7	%

LightLab INTERNATIONAL ALLENTOWN LLC

Report of Test

Test Report Number: LLIA003081-001C-R01*

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



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Test Report Number: LLIA003081-001C-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	55.08	57.97	56.22
2	54.84	55.97	54.13
0	55.58	55.37	55.14
-2	50.83	52.90	53.03
-4	56.50	56.79	56.64

Center Point Irradiance	55.37	mW/cm^2	Target Area Radiant Power	20.9	W
Maximum Irradiance	57.97	mW/cm^2	Average Irradiance	54.00	mW/cm^2
Minimum Irradiance	50.83	mW/cm^2	Percent area over 20mW/cm^2	100.0	%
Standard Deviation	1.81	mW/cm^2	Percent area over 30mW/cm^2	100.0	%
Coefficient of Variation	3.3	%	Percent area over 40mW/cm^2	100.0	%

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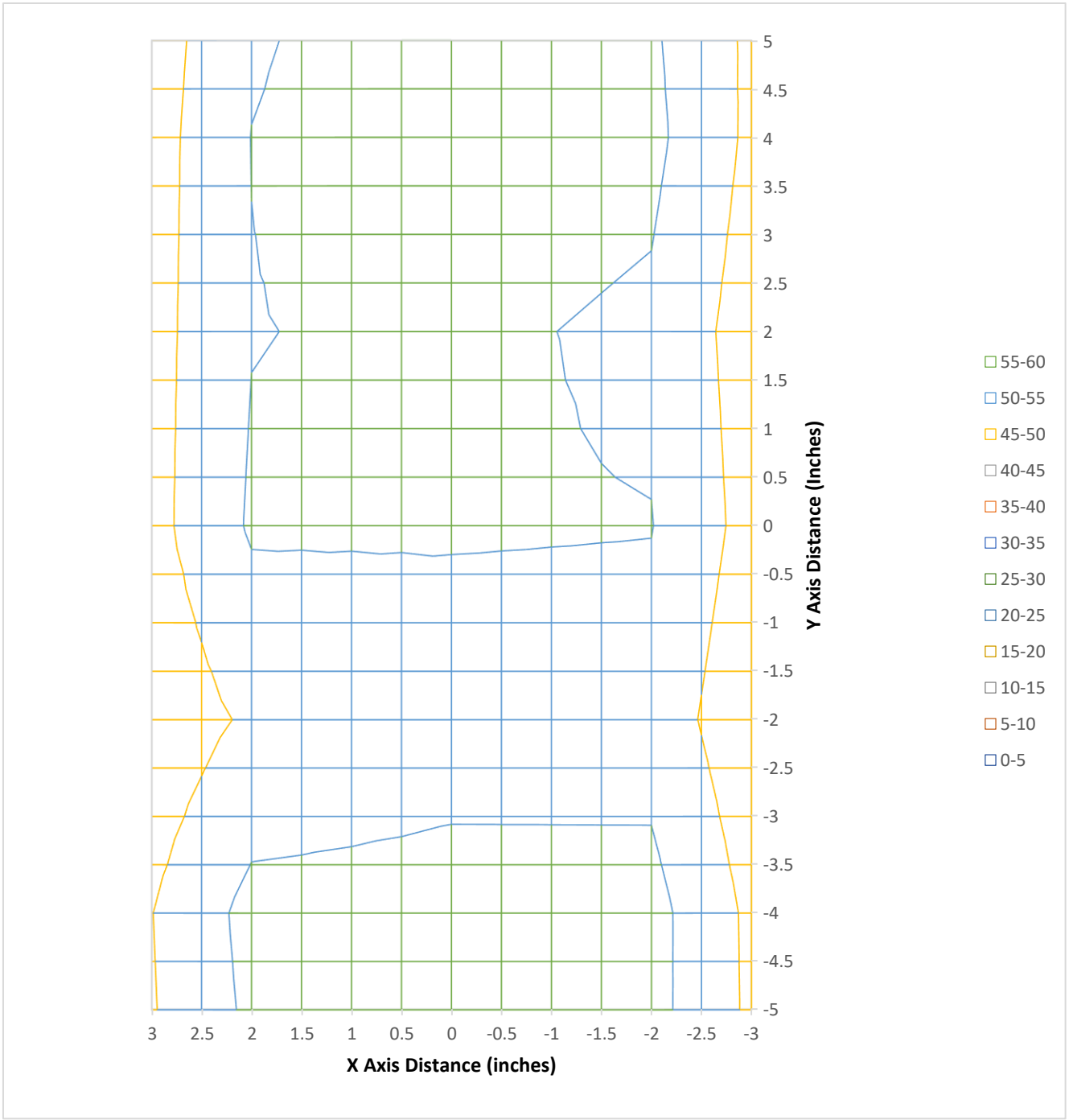
LightLab INTERNATIONAL ALLENTOWN LLC

Report of Test

Test Report Number: LLIA003081-001C-R01*

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



North America (issuing laboratory)
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Test Report Number: LLIA003081-001C-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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