LightLab INTERNATIONAL ALLENTOWN LLC

Radiant Flux Test Report

LLIA003081-003A-R01*

Catalog Number: MitoPRO 1500X (Mode 1)
Portable, formed white steel housing, 2 aluminum heatsinks
and four cooling fans behind LEDs.
300 dual chip Red "590nm, 630nm, 660nm" and NIR "810nm, 830nm, 850nm" LEDs, each with a clear conical plastic optic in front. 1 Mean Well LOP-200-48 power supply.



Performance Summary

Total Radiometric (350-1700nm)		
Total Radiant Flux	161.11	W
Radiant Efficiency	34.8	% (W_r/W_e)
Radiometric Range: 570-1100nm		
Radiant Flux (570-1100nm)	160.99	W
Red/Total Red Ratio*	93.4	%
Deep Red/Total Red Ratio*	6.6	%
NIR/Total NIR Ratio*	99.6	%
Deep NIR/Total NIR Ratio*	0.4	%

*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)	635, 663, 817, 836	nm
Luminous Flux	7234.0	Lumens
Luminous Efficacy	15.6	Lm/W

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

*This test report supersedes test report LLIA003081-003A

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

Signed: Michael L. Grather Digitally signed by Michael L. Grather Date: 2026.10.23 14:14:45 -04'00'

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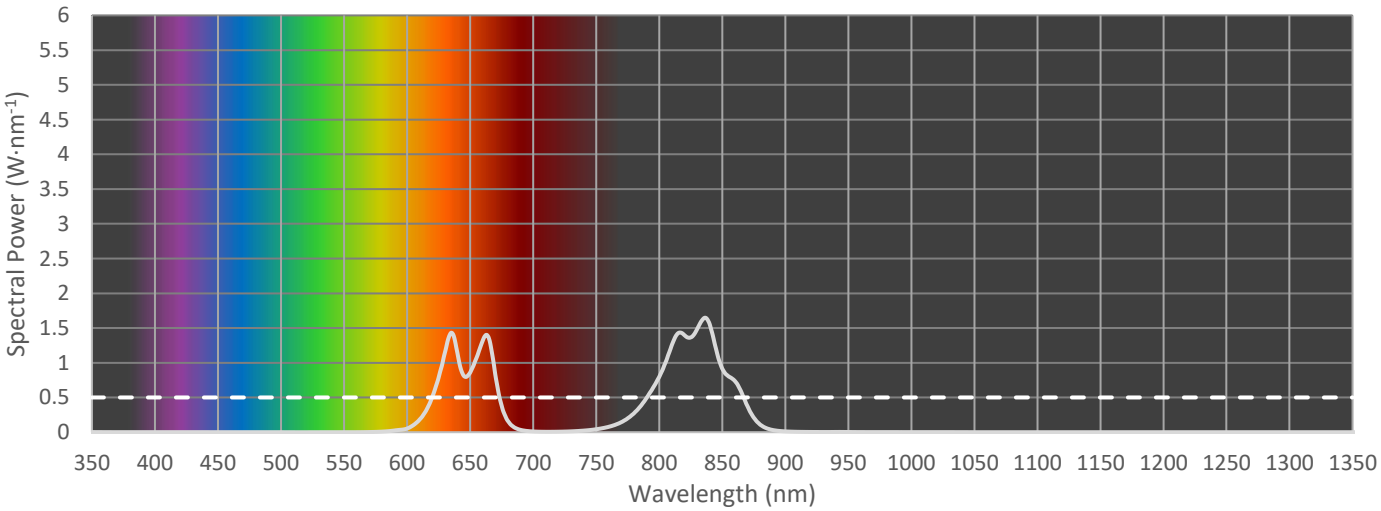
Radiant Flux Tabulation			
Waveband (nm)	Radiant Flux (W_r)	Percent of Total	Efficiency (W_r/W_e)
350-500	0.10	0.1%	0.000
500-570	0.02	0.0%	0.000
Amber 570-600	0.56	0.3%	0.001
Red 600-700	62.65	38.9%	0.135
Deep Red 700-780	4.40	2.7%	0.009
NIR 780-900	93.05	57.8%	0.201
Deep NIR 900-1100	0.35	0.2%	0.001
570-1100	160.99	99.9%	0.347
Total 350-1700	161.11	100.0%	0.348



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Test Report Number: LLIA003081-003A-R01*

Electrical Data

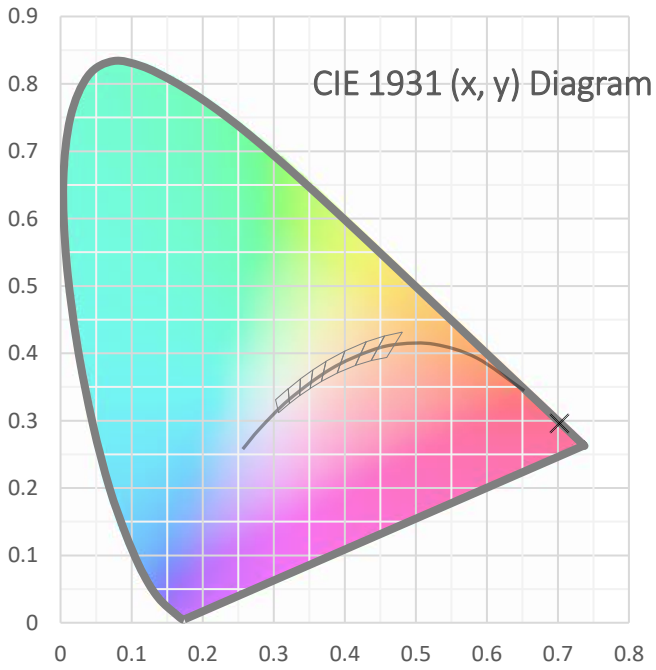
Voltage	120.0	Vac
Current	3.875	A
Power	463.3	W
Frequency	60.00	Hz
Power Factor	0.997	
Current THD	6.8	%

Spectral Power of Select Wavelengths

Wavelength (nm)	Spectral Power ($W \cdot nm^{-1}$)
590	0.0247
630	1.1441
660	1.3171
810	1.2533
830	1.4807
850	0.9158
1064	0.0000

Photometric (Human Vision) Data

Total Luminous Flux		7234.0	lm
Luminous Efficacy		15.6	lm/W
Chromaticity	(x,y)	(0.7023, 0.2962)	
	(u',v')	(0.5455, 0.5176)	
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: LLIA003081-003A-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:	25.1 °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

LLIA003081-003B-R01*

Catalog Number: MitoPRO 1500X (Mode 1)
Portable, formed white steel housing, 2 aluminum heatsinks
and four cooling fans behind LEDs.
300 dual chip Red "590nm, 630nm, 660nm" and NIR "810nm, 830nm, 850nm" LEDs, each with a clear conical plastic optic in front. 1 Mean Well LOP-200-48 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 LLIA003081-003B

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

LightLab INTERNATIONAL ALLENTOWN LLC

Test Report Number: LLIA003081-003B-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	63.4	26.2	36.5
1.5	62.4	25.7	36.2
2.5	61.8	25.3	36.0
3.5	61.4	25.1	35.9
4.5	61.0	24.9	35.7
5.5	60.7	24.7	35.6
6.5	60.5	24.6	35.5
7.5	60.4	24.5	35.5
8.5	60.3	24.4	35.5
9.5	60.2	24.4	35.4
10.5	60.1	24.3	35.4
11.5	60.0	24.3	35.4
12.5	59.9	24.2	35.4
13.5	59.9	24.2	35.4
14.5	59.9	24.2	35.3
15.5	59.8	24.1	35.3
16.5	59.8	24.1	35.3
17.5	59.8	24.1	35.3
18.5	59.8	24.1	35.3
19.5	59.7	24.1	35.3

15 Minute 570-1100nm Irradiance Retention
94.5%

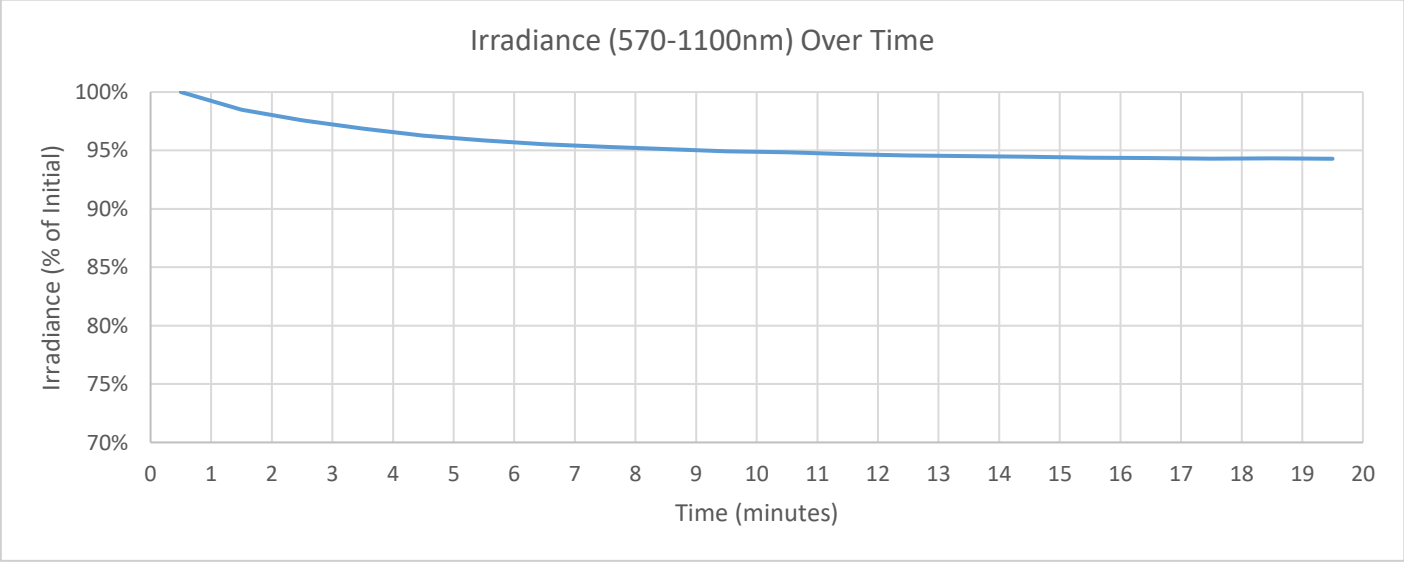
20 Minute 570-1100nm Irradiance Retention
94.3%

15 Minute 600-780nm Irradiance Retention
92.1%

20 Minute 600-780nm Irradiance Retention
91.8%

15 Minute 780-1100nm Irradiance Retention
96.8%

20 Minute 780-1100nm Irradiance Retention
96.7%

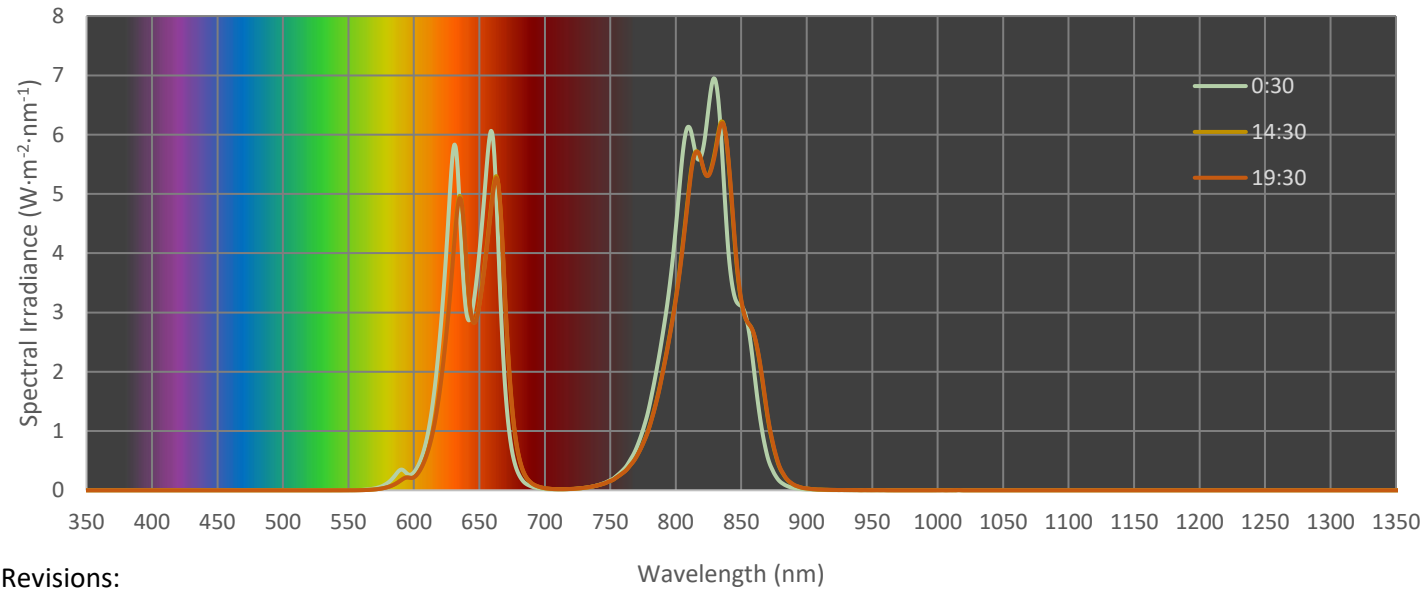


LightLab INTERNATIONAL ALLENTOWN LLC

Test Report Number: LLIA003081-003B-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	631	635	635
2	659	663	663
3	810	816	816
4	829	835	836



Revisions:

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

LightLab INTERNATIONAL ALLENTOWN LLC

Grid Application Distance Measurement Test Report

Test Report Number: LLIA003081-003C-R01*

Catalog Number: MitoPRO 1500X (Mode 1)
Portable, formed white steel housing, 2 aluminum heatsinks
and four cooling fans behind LEDs.
300 dual chip Red "590nm, 630nm, 660nm" and NIR "810nm, 830nm, 850nm" LEDs, each with a clear conical plastic optic in front. 1 Mean Well LOP-200-48 power supply.



Performance Summary

Electrical		
Voltage	120.0	Vac
Current	3.918	A
Power	468.6	W
Frequency	60.00	Hz
Power Factor	0.997	
Current THD	6.5	%
Ambient Temperature	24.7	°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 LLIA003081-003C

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

LightLab INTERNATIONAL ALLENTOWN LLC

Test Report Number: LLIA003081-003C-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	0.15	0.20	0.27	0.35	0.43	0.49	0.50	0.46	0.39	0.31	0.24	0.18	0.14
28	0.21	0.30	0.44	0.67	1.03	1.37	1.44	1.25	0.89	0.56	0.37	0.26	0.19
26	0.30	0.45	0.85	1.68	2.90	3.99	4.34	3.68	2.49	1.37	0.66	0.38	0.26
24	0.41	0.71	1.76	3.91	6.79	9.55	10.38	8.97	6.22	3.36	1.42	0.58	0.35
22	0.53	1.11	3.28	7.77	15.31	22.25	23.95	20.53	13.56	6.73	2.81	0.93	0.45
20	0.65	1.61	5.22	12.29	23.99	34.43	37.09	32.38	20.58	10.46	4.39	1.38	0.56
18	0.77	2.01	6.75	16.06	31.29	45.88	49.76	44.00	28.01	13.91	5.77	1.81	0.67
16	0.87	2.25	7.67	18.43	35.74	52.57	55.16	49.59	31.84	16.26	6.70	2.03	0.76
14	0.96	2.41	8.17	19.57	37.68	54.76	59.98	53.03	34.49	17.64	7.16	2.16	0.84
12	1.03	2.50	8.25	20.14	38.54	57.60	62.31	55.41	35.96	18.30	7.42	2.24	0.90
10	1.08	2.63	8.51	20.40	39.86	57.79	63.37	56.02	36.78	18.86	7.62	2.34	0.95
8	1.11	2.66	8.71	20.81	40.66	59.00	63.88	56.88	37.15	18.99	7.81	2.43	0.99
6	1.13	2.70	8.84	20.88	40.89	58.25	64.40	56.81	37.10	18.85	7.89	2.47	1.01
4	1.14	2.66	8.69	20.69	39.78	57.80	62.35	55.30	36.40	18.61	7.87	2.46	1.03
2	1.14	2.63	8.54	20.15	38.48	55.84	61.40	54.44	35.77	18.21	7.67	2.46	1.04
0	1.13	2.63	8.47	19.80	38.53	55.47	59.59	53.01	35.11	18.24	7.57	2.47	1.04
-2	1.13	2.69	8.34	19.52	37.68	54.76	60.05	53.00	35.04	18.02	7.49	2.42	1.02
-4	1.12	2.68	8.30	19.64	37.84	55.09	58.55	53.66	34.55	17.88	7.45	2.39	1.01
-6	1.10	2.56	8.37	19.65	37.75	55.99	60.38	53.04	35.73	18.31	7.46	2.36	1.00
-8	1.08	2.49	8.29	19.89	38.62	56.19	61.88	55.52	36.00	18.28	7.43	2.31	0.98
-10	1.05	2.39	8.17	19.85	38.94	57.37	62.35	55.55	36.20	18.41	7.32	2.19	0.95
-12	1.00	2.33	8.13	19.54	38.78	57.86	62.66	55.73	35.94	18.32	7.19	2.19	0.91
-14	0.93	2.18	7.89	19.12	37.81	56.48	61.88	54.99	35.23	17.69	7.10	2.16	0.85
-16	0.84	2.01	7.30	17.74	34.43	51.37	56.56	50.69	33.36	16.48	6.72	2.01	0.77
-18	0.73	1.78	5.99	15.00	28.62	44.28	48.07	42.99	28.87	14.29	6.02	1.79	0.70
-20	0.59	1.33	4.31	10.58	19.93	30.21	32.41	30.29	20.38	10.84	4.55	1.50	0.59
-22	0.47	0.86	2.60	6.32	12.20	18.36	20.76	18.51	12.58	6.74	2.86	0.99	0.49
-24	0.36	0.57	1.31	3.08	5.54	8.04	8.97	8.12	5.85	3.20	1.44	0.60	0.38
-26	0.27	0.38	0.64	1.27	2.25	3.29	3.77	3.37	2.39	1.34	0.67	0.41	0.29
-28	0.20	0.27	0.37	0.52	0.77	1.03	1.14	1.07	0.78	0.54	0.38	0.28	0.21
-30	0.14	0.18	0.24	0.30	0.37	0.42	0.45	0.43	0.38	0.31	0.25	0.20	0.15

Center Point Irradiance	59.59	mW/cm^2	
Maximum Irradiance	64.40	mW/cm^2	
Minimum Irradiance	0.14	mW/cm^2	
Standard Deviation	19.70	mW/cm^2	
Coefficient of Variation	123.6	%	
Target Area Radiant Power	165.1	W	
Average Irradiance	17.77	mW/cm^2	
Percent area over 20mW/cm^2	32.6	%	
Percent area over 30mW/cm^2	25.0	%	
Percent area over 40mW/cm^2	18.1	%	

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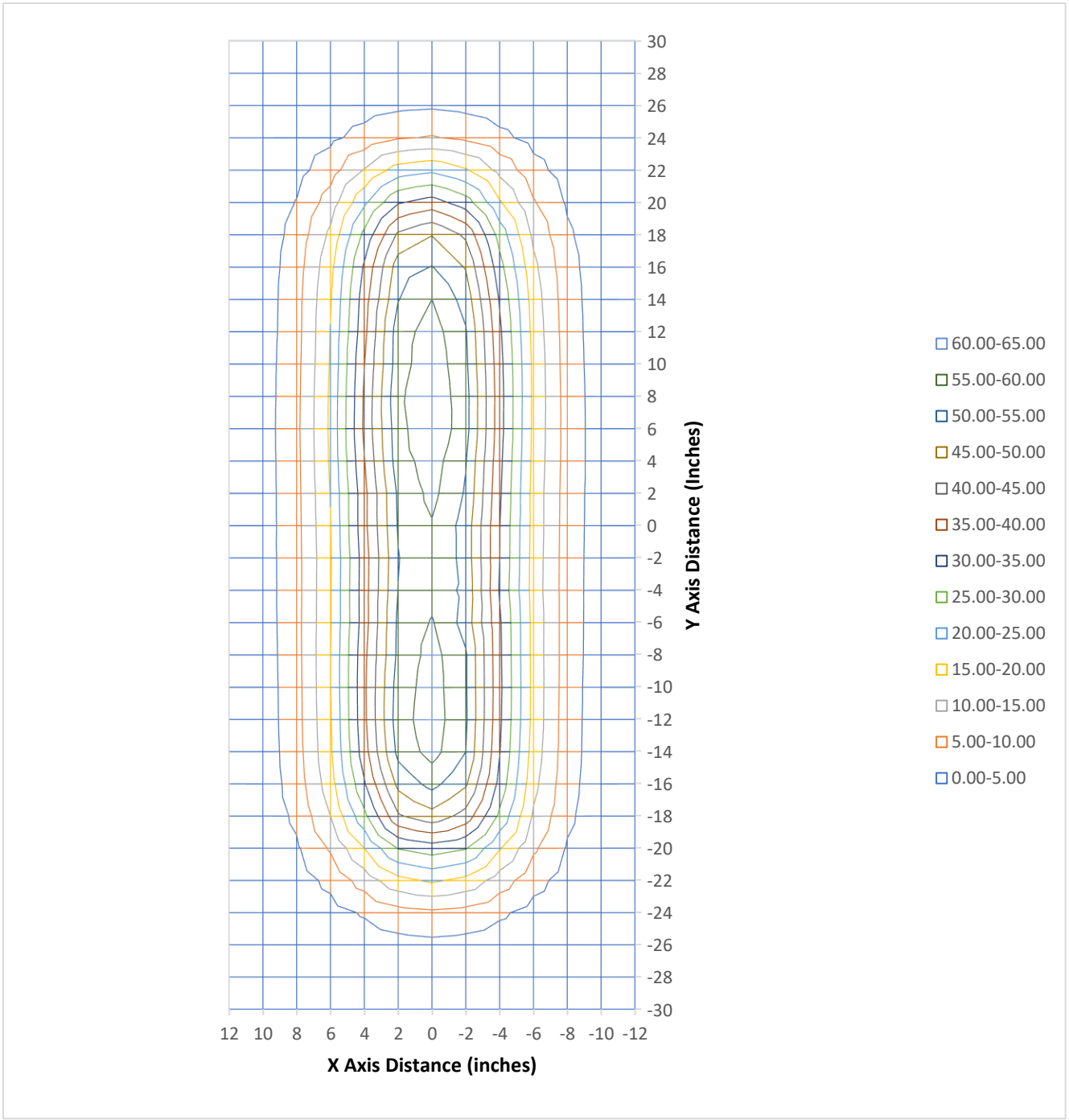
LightLab INTERNATIONAL ALLENTOWN LLC

Report of Test

Test Report Number: LLIA003081-003C-R01*

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



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Test Report Number: LLIA003081-003C-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	0.96	2.41	8.17	19.57	37.68	54.76	59.98	53.03	34.49	17.64	7.16	2.16	0.84
12	1.03	2.50	8.25	20.14	38.54	57.60	62.31	55.41	35.96	18.30	7.42	2.24	0.90
10	1.08	2.63	8.51	20.40	39.86	57.79	63.37	56.02	36.78	18.86	7.62	2.34	0.95
8	1.11	2.66	8.71	20.81	40.66	59.00	63.88	56.88	37.15	18.99	7.81	2.43	0.99
6	1.13	2.70	8.84	20.88	40.89	58.25	64.40	56.81	37.10	18.85	7.89	2.47	1.01
4	1.14	2.66	8.69	20.69	39.78	57.80	62.35	55.30	36.40	18.61	7.87	2.46	1.03
2	1.14	2.63	8.54	20.15	38.48	55.84	61.40	54.44	35.77	18.21	7.67	2.46	1.04
0	1.13	2.63	8.47	19.80	38.53	55.47	59.59	53.01	35.11	18.24	7.57	2.47	1.04
-2	1.13	2.69	8.34	19.52	37.68	54.76	60.05	53.00	35.04	18.02	7.49	2.42	1.02
-4	1.12	2.68	8.30	19.64	37.84	55.09	58.55	53.66	34.55	17.88	7.45	2.39	1.01
-6	1.10	2.56	8.37	19.65	37.75	55.99	60.38	53.04	35.73	18.31	7.46	2.36	1.00
-8	1.08	2.49	8.29	19.89	38.62	56.19	61.88	55.52	36.00	18.28	7.43	2.31	0.98
-10	1.05	2.39	8.17	19.85	38.94	57.37	62.35	55.55	36.20	18.41	7.32	2.19	0.95
-12	1.00	2.33	8.13	19.54	38.78	57.86	62.66	55.73	35.94	18.32	7.19	2.19	0.91
-14	0.93	2.18	7.89	19.12	37.81	56.48	61.88	54.99	35.23	17.69	7.10	2.16	0.85

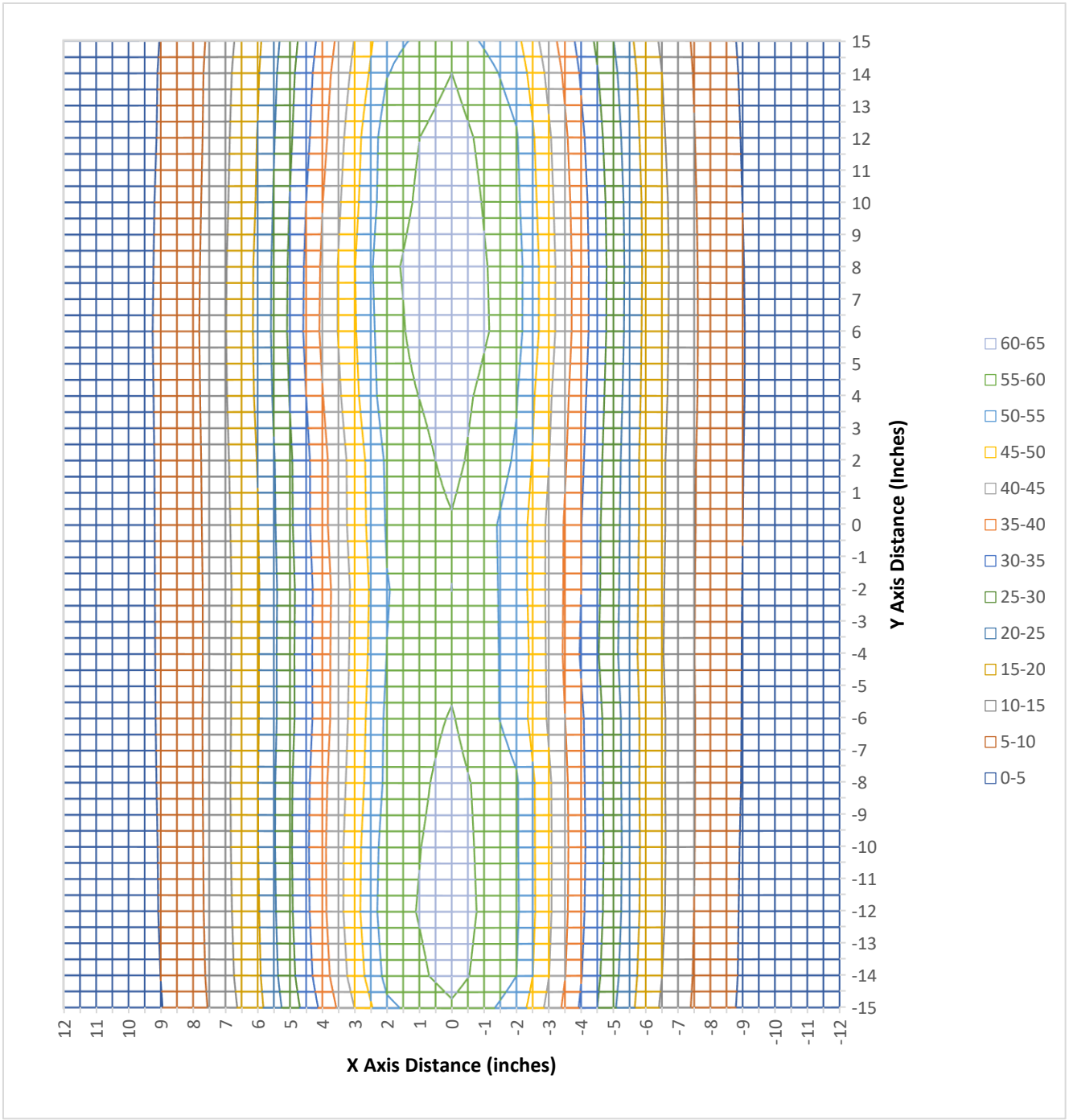
Center Point Irradiance	59.59	mW/cm^2	Target Area Radiant Power	119.0 W
Maximum Irradiance	64.40	mW/cm^2	Average Irradiance	25.62 mW/cm^2
Minimum Irradiance	0.84	mW/cm^2	Percent area over 20mW/cm^2	47.7 %
Standard Deviation	22.17	mW/cm^2	Percent area over 30mW/cm^2	39.1 %
Coefficient of Variation	93.3	%	Percent area over 40mW/cm^2	30.3 %

LightLab INTERNATIONAL ALLENTOWN LLC

Report of Test

Test Report Number: LLIA003081-003C-R01*

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



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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	57.80	62.35	55.30
2	55.84	61.40	54.44
0	55.47	59.59	53.01
-2	54.76	60.05	53.00
-4	55.09	58.55	53.66

Center Point Irradiance	59.59	mW/cm^2	Target Area Radiant Power	21.4	W
Maximum Irradiance	62.35	mW/cm^2	Average Irradiance	55.25	mW/cm^2
Minimum Irradiance	53.00	mW/cm^2	Percent area over $20mW/cm^2$	100.0	%
Standard Deviation	3.05	mW/cm^2	Percent area over $30mW/cm^2$	100.0	%
Coefficient of Variation	5.4	%	Percent area over $40mW/cm^2$	100.0	%

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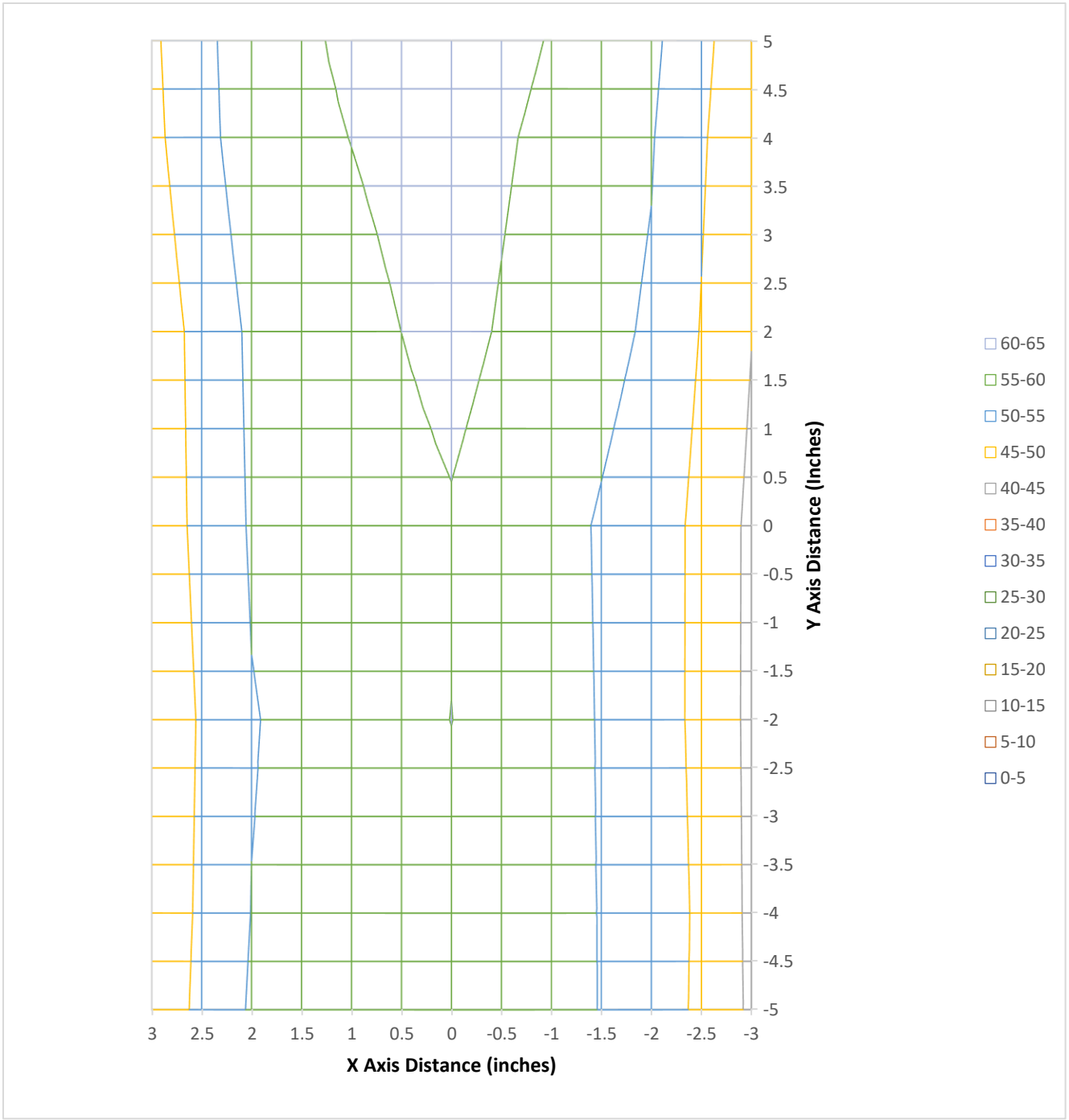
LightLab INTERNATIONAL ALLENTOWN LLC

Report of Test

Test Report Number: LLIA003081-003C-R01*

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



LightLab INTERNATIONAL ALLENTOWN LLC

Test Report Number: LLIA003081-003C-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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