LightLab INTERNATIONAL ALLENTOWN LLC

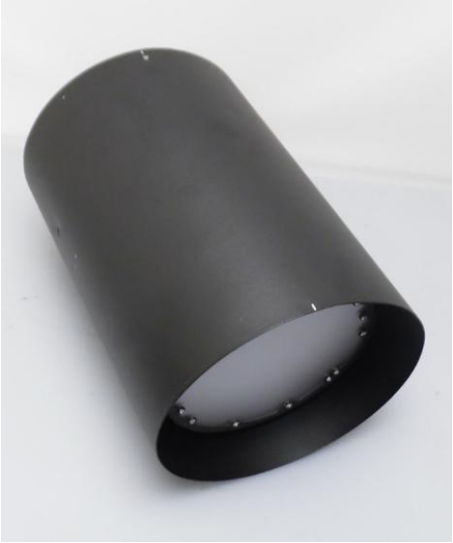
NVLAP TESTING Lab Code: 201079-0

Report of Test

LLIA003089-004

Indoor Distribution Photometry Test Report

Catalog Number: RH-140-60-D-B-M-4-515-R-H (White Setting)
Pendant/highbay mounted, spun black aluminum outer housing, extruded aluminum heatsink and formed aluminum frame, frosted plastic enclosure below LEDs.
19 RGBW LED clusters with clear prismatic plastic optics below each.
One MeanWell XLG-200-24-A LED driver



Prepared For:
Aquarii
6805 Newbrook Avenue
East Syracuse, NY 13057, USA

Performance Summary					
Input Voltage	120.0	Vac	Luminous Flux	1832.3	Lumens
Input Current	0.5483	A	Total Efficacy	28.5	Lm/W
Input Power	64.31	W	Downward Flux	1832.3	Lumens
Frequency	60.00	Hz	Downward Flux	100.0	% of Total
Power Factor	0.977				
Current THD	5.2	%			

This test report was issued by LightLab International Allentown, LLC without alterations or erasures.

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

Signed: Michael L. Grather Digitally signed by Michael L. Grather Date: 2026.09.22 16:29:22 -04'00'

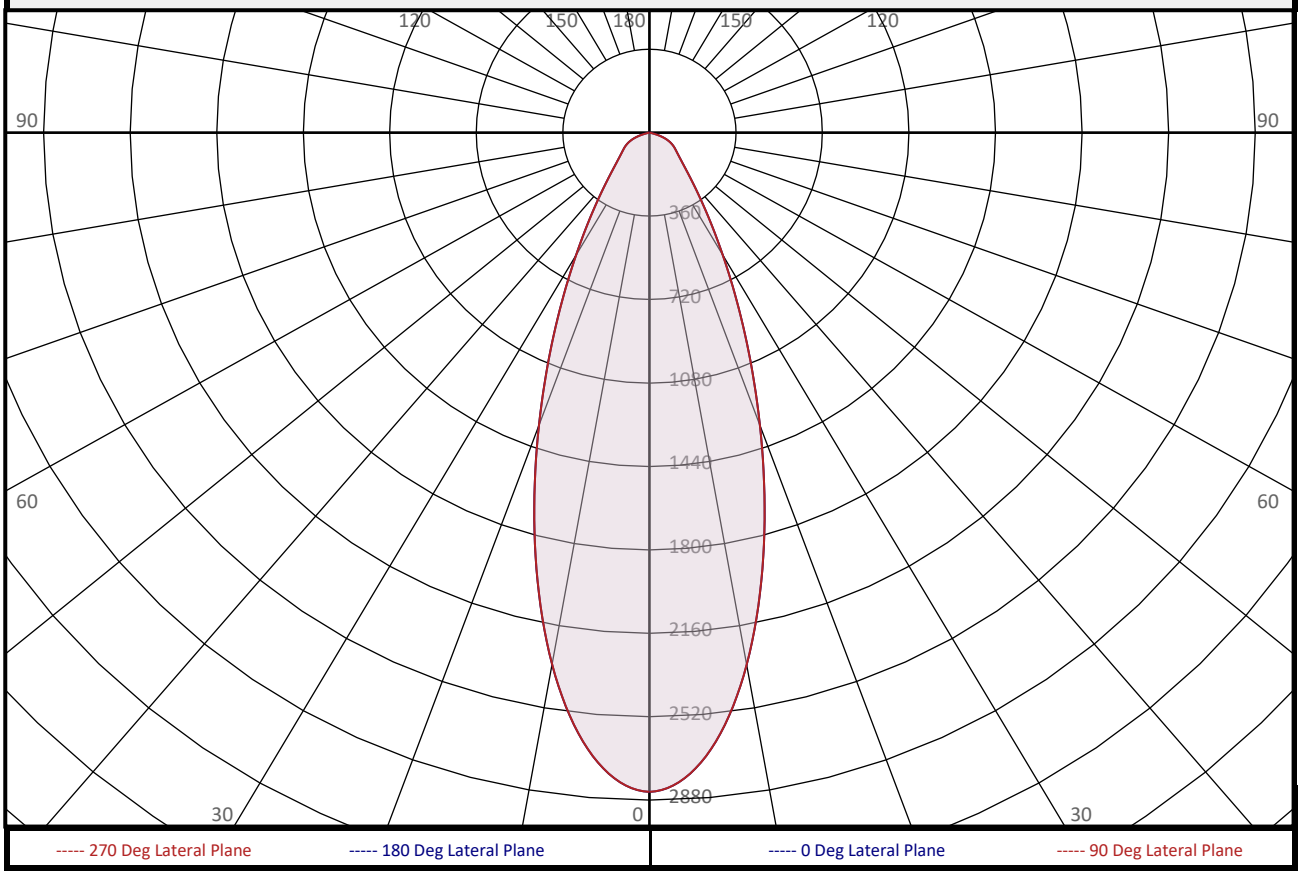
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Report of Test

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Polar Plot of Candela



Zonal Flux Summary

Zone (Deg Vert)	Flux (Lumens)	Percent of Total	Zone (Deg Vert)	Flux (Lumens)	Percent of Total	Zone (Deg Vert)	Flux (Lumens)	Percent of Total
0-10	245.9	13.4%	90-100	0.0	0.0%	0-20	751.4	41.0%
10-20	505.5	27.6%	100-110	0.0	0.0%	0-30	1176	64.2%
20-30	424.3	23.2%	110-120	0.0	0.0%	0-40	1433	78.2%
30-40	257.4	14.0%	120-130	0.0	0.0%	0-60	1715	93.6%
40-50	160.7	8.8%	130-140	0.0	0.0%	0-80	1831	100.0%
50-60	121.6	6.6%	140-150	0.0	0.0%	10-90	1586	86.6%
60-70	89.3	4.9%	150-160	0.0	0.0%	20-50	842.3	46.0%
70-80	26.9	1.5%	160-170	0.0	0.0%	40-90	399.3	21.8%
80-90	0.9	0.0%	170-180	0.0	0.0%	60-90	117.1	6.4%
0-90	1832	100.0%	90-180	0.0	0.0%	0-180	1832	100.0%

Report of Test

LLIA003089-004

Luminous Intensity (Candela) Table

Vertical (Gamma) Angles - Data was acquired in 0.5° increments, 2.5° increments shown.	Lateral (C-Plane) Angles									
	0	22.5	45	67.5	90	112.5	135	157.5	180
0	2844	2844	2844	2844	2844	2844	2844	2844	2844
2.5	2805	2805	2805	2805	2805	2805	2805	2805	2805
5	2700	2700	2700	2700	2700	2700	2700	2700	2700
7.5	2537	2537	2537	2537	2537	2537	2537	2537	2537
10	2329	2329	2329	2329	2329	2329	2329	2329	2329
12.5	2091	2091	2091	2091	2091	2091	2091	2091	2091
15	1839	1839	1839	1839	1839	1839	1839	1839	1839
17.5	1584	1584	1584	1584	1584	1584	1584	1584	1584
20	1342	1342	1342	1342	1342	1342	1342	1342	1342
22.5	1119	1119	1119	1119	1119	1119	1119	1119	1119
25	921	921	921	921	921	921	921	921	921
27.5	751	751	751	751	751	751	751	751	751
30	609	609	609	609	609	609	609	609	609
32.5	494	494	494	494	494	494	494	494	494
35	403	403	403	403	403	403	403	403	403
37.5	332	332	332	332	332	332	332	332	332
40	277	277	277	277	277	277	277	277	277
42.5	236	236	236	236	236	236	236	236	236
45	204	204	204	204	204	204	204	204	204
47.5	180	180	180	180	180	180	180	180	180
50	161	161	161	161	161	161	161	161	161
52.5	147	147	147	147	147	147	147	147	147
55	135	135	135	135	135	135	135	135	135
57.5	125	125	125	125	125	125	125	125	125
60	115	115	115	115	115	115	115	115	115
62.5	104	104	104	104	104	104	104	104	104
65	91	91	91	91	91	91	91	91	91
67.5	78	78	78	78	78	78	78	78	78
70	62	62	62	62	62	62	62	62	62
72.5	43	43	43	43	43	43	43	43	43
75	23	23	23	23	23	23	23	23	23
77.5	6	6	6	6	6	6	6	6	6
80	2	2	2	2	2	2	2	2	2
82.5	1	1	1	1	1	1	1	1	1
85	1	1	1	1	1	1	1	1	1
87.5	0	0	0	0	0	0	0	0	0
90	0	0	0	0	0	0	0	0	0

16 lateral half-planes of data were acquired, 22.5 degree increments shown.

Report of Test

LLIA003089-004

Luminous Intensity (Candela) Table

Vertical (Gamma) Angles - Data was acquired in 0.5° increments, 2.5° increments shown.	Lateral (C-Plane) Angles								
	0	22.5	45	67.5	90	112.5	135	157.5	180
90	0	0	0	0	0	0	0	0	0
92.5	0	0	0	0	0	0	0	0	0
95	0	0	0	0	0	0	0	0	0
97.5	0	0	0	0	0	0	0	0	0
100	0	0	0	0	0	0	0	0	0
102.5	0	0	0	0	0	0	0	0	0
105	0	0	0	0	0	0	0	0	0
107.5	0	0	0	0	0	0	0	0	0
110	0	0	0	0	0	0	0	0	0
112.5	0	0	0	0	0	0	0	0	0
115	0	0	0	0	0	0	0	0	0
117.5	0	0	0	0	0	0	0	0	0
120	0	0	0	0	0	0	0	0	0
122.5	0	0	0	0	0	0	0	0	0
125	0	0	0	0	0	0	0	0	0
127.5	0	0	0	0	0	0	0	0	0
130	0	0	0	0	0	0	0	0	0
132.5	0	0	0	0	0	0	0	0	0
135	0	0	0	0	0	0	0	0	0
137.5	0	0	0	0	0	0	0	0	0
140	0	0	0	0	0	0	0	0	0
142.5	0	0	0	0	0	0	0	0	0
145	0	0	0	0	0	0	0	0	0
147.5	0	0	0	0	0	0	0	0	0
150	0	0	0	0	0	0	0	0	0
152.5	0	0	0	0	0	0	0	0	0
155	0	0	0	0	0	0	0	0	0
157.5	0	0	0	0	0	0	0	0	0
160	0	0	0	0	0	0	0	0	0
162.5	0	0	0	0	0	0	0	0	0
165	0	0	0	0	0	0	0	0	0
167.5	0	0	0	0	0	0	0	0	0
170	0	0	0	0	0	0	0	0	0
172.5	0	0	0	0	0	0	0	0	0
175	0	0	0	0	0	0	0	0	0
177.5	0	0	0	0	0	0	0	0	0
180	0	0	0	0	0	0	0	0	0

16 lateral half-planes of data were acquired, 22.5 degree increments shown.

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Coefficients of Utilization/Room Utilization - Zonal Cavity Method

Effective Floor Cavity Reflectance 0.20

RC	80					70					50				30				10			0
RW	70	50	30	10		70	50	30	10		50	30	10		50	30	10		50	30	10	0
RCR																						
0	119	119	119	119		116	116	116	116		111	111	111		106	106	106		102	102	102	100
1	113	109	107	104		110	107	105	102		103	101	99		99	98	96		96	95	94	92
2	106	101	96	92		104	99	95	91		95	92	89		92	90	87		90	87	85	84
3	100	93	87	83		98	91	86	82		89	84	81		86	82	79		84	81	78	76
4	94	86	80	75		93	85	79	75		83	78	74		81	76	73		79	75	72	70
5	89	80	74	69		88	79	73	69		77	72	68		76	71	67		74	70	67	65
6	85	75	69	64		83	74	68	64		73	67	63		71	66	63		70	66	62	61
7	80	71	64	60		79	70	64	59		69	63	59		67	62	59		66	62	58	57
8	77	67	60	56		75	66	60	56		65	59	55		64	59	55		63	58	55	54
9	73	63	57	53		72	62	57	52		61	56	52		61	56	52		60	55	52	51
10	70	60	54	50		69	59	54	50		58	53	49		58	53	49		57	52	49	48

For absolute test reports, RUs are expressed as a percentage of total lumen output. For relative test reports, CUs are expressed as a percentage of total lamp output. Calculations were based on published IES procedures, and are based on the zonal cavity method. Basic assumptions: 1) Room surfaces are lambertian reflectors. 2) Incident flux on each surface is uniformly distributed. 3) The room is spectrally neutral. When luminaires are not evenly distributed throughout the room, or do not exhibit lateral symmetry, CU values may differ from actual performance.

Circle of Light Plot

Height(ft)	Illuminance at Nadir (fc)	Ground-level distance to half-of-nadir illuminance (ft) 0-180 deg	90-270 deg
6.0	79.0	3.69	3.69
8.0	44.4	4.91	4.91
10.0	28.4	6.14	6.14
12.0	19.8	7.37	7.37
14.0	14.5	8.60	8.60
16.0	11.1	9.83	9.83

Spacing Criterion

SC: 0.6

Average Luminance (cd/m^2)

	0 deg Plane	45 deg Plane	90 deg Plane
0	62192	62192	62192
45	6309	6309	6309
55	5144	5144	5144
65	4726	4726	4726
75	1979	1979	1979
85	193	193	193

Beam and Field Angle

0-180 Degree Plane

Beam Angle: 38.3°

Field Angle: 79.3°

90-270 Degree Plane

Beam Angle: 38.3°

Field Angle: 79.3°

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UGR Table - Corrected

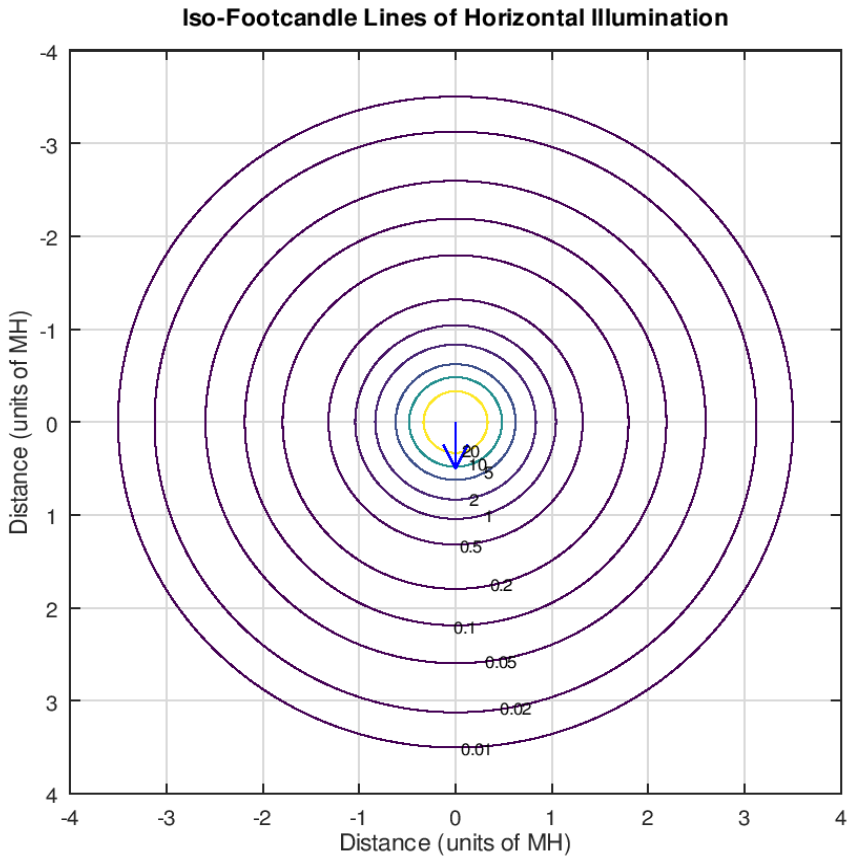
Reflectances											
Ceiling Cavity		70	70	50	50	30	70	70	50	50	30
Walls		50	30	50	30	30	50	30	50	30	30
Floor Cavity		20	20	20	20	20	20	20	20	20	20
Room Size		UGR Viewed Crosswise					UGR Viewed Endwise				
X=2H	Y=2H	14.4	15.6	14.8	15.9	16.2	14.4	15.6	14.8	15.9	16.2
	3H	16.0	17.0	16.4	17.4	17.7	16.0	17.0	16.4	17.4	17.7
	4H	16.2	17.1	16.6	17.5	17.9	16.2	17.1	16.6	17.5	17.9
	6H	16.1	17.0	16.5	17.3	17.7	16.1	17.0	16.5	17.3	17.7
	8H	16.0	16.9	16.5	17.3	17.7	16.0	16.9	16.5	17.3	17.7
	12H	16.0	16.8	16.4	17.2	17.6	16.0	16.8	16.4	17.2	17.6
4H	2H	15.0	16.0	15.4	16.3	16.7	15.0	16.0	15.4	16.3	16.7
	3H	16.6	17.4	17.0	17.8	18.2	16.6	17.4	17.0	17.8	18.2
	4H	16.8	17.5	17.2	17.9	18.4	16.8	17.5	17.2	17.9	18.4
	6H	16.7	17.3	17.2	17.8	18.2	16.7	17.3	17.2	17.8	18.2
	8H	16.6	17.2	17.1	17.7	18.1	16.6	17.2	17.1	17.7	18.1
	12H	16.6	17.1	17.1	17.6	18.1	16.6	17.1	17.1	17.6	18.1
8H	4H	16.8	17.3	17.2	17.8	18.3	16.8	17.3	17.2	17.8	18.3
	6H	16.7	17.1	17.2	17.6	18.1	16.7	17.1	17.2	17.6	18.1
	8H	16.6	17.0	17.1	17.5	18.0	16.6	17.0	17.1	17.5	18.0
	12H	16.6	16.9	17.1	17.4	18.0	16.6	16.9	17.1	17.4	18.0
12H	4H	16.7	17.2	17.2	17.7	18.2	16.7	17.2	17.2	17.7	18.2
	6H	16.6	17.0	17.1	17.5	18.0	16.6	17.0	17.1	17.5	18.0
	8H	16.6	16.9	17.1	17.4	18.0	16.6	16.9	17.1	17.4	18.0

Maximum UGR = 18.4

Report of Test

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Iso-Illuminance Plot

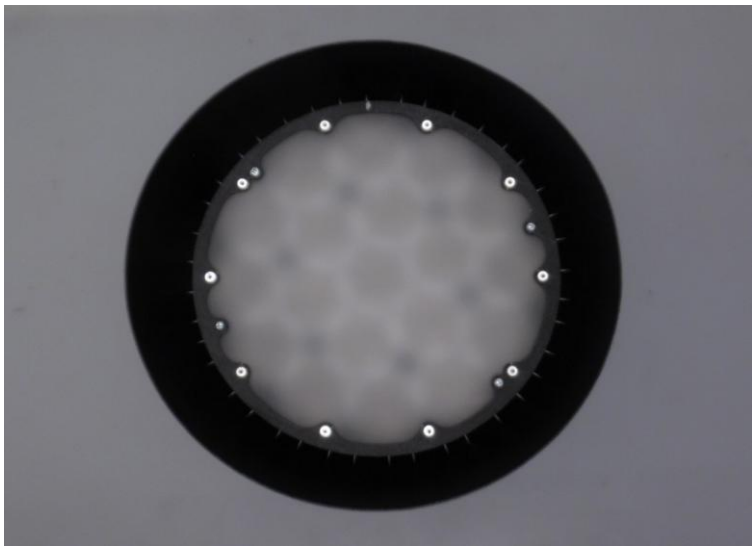


The isofootcandle values shown in the plot above are based on a mounting height of h = 8.0 feet. Grid values show multiples of mounting height. The isoilluminance contour lines are expressed in units of footcandles. The values expressed are based on the direct light from a single unit without the contribution of room reflections.

Report of Test

LLIA003089-004

Additional Pictures of Test Subject





Report of Test

LLIA003089-004

Test Distance	9.5 m
Ambient Temperature	25.5 °C

Notes

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.

Tested in accordance with the applicable sections of IES LM-79-24. Format of reports and angular increments based on IES LM-41-20 and LM-46-20.

The luminous intensity values, 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.

Photometric intensity values are reported using the CIE C-Gamma coordinate system as defined in CIE publication number 121.

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.