

Indoor Distribution Test Report

Spectrum Lighting Inc.

994 Jefferson Street
Fall River, MA 02721
+1.508.678.2303

Spectrum Lighting Photometric Lab

Luminaire

ALDDH16LEDLX 140L 35K xx AL16 MWI TF3 xx
16" Diam. Alum Reflector MW Interior with TF3 Lens

Test Number

SP-01504_3

Test Date

The results contained in this report pertain only to this IES file.

Summary of Results

Power

Input Watts	107 W
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Lumen Output

Output Lumens	10087
Efficacy	94.27 lm/W

Luminous Dimensions

0° - 180° Size	-1.33
90° - 270° Size	-1.33
Height	0

Spacing Criterion

Two luminaires, plane 0°	1.05
Two luminaires, plane 90°	1.06
Four luminaires	1.03

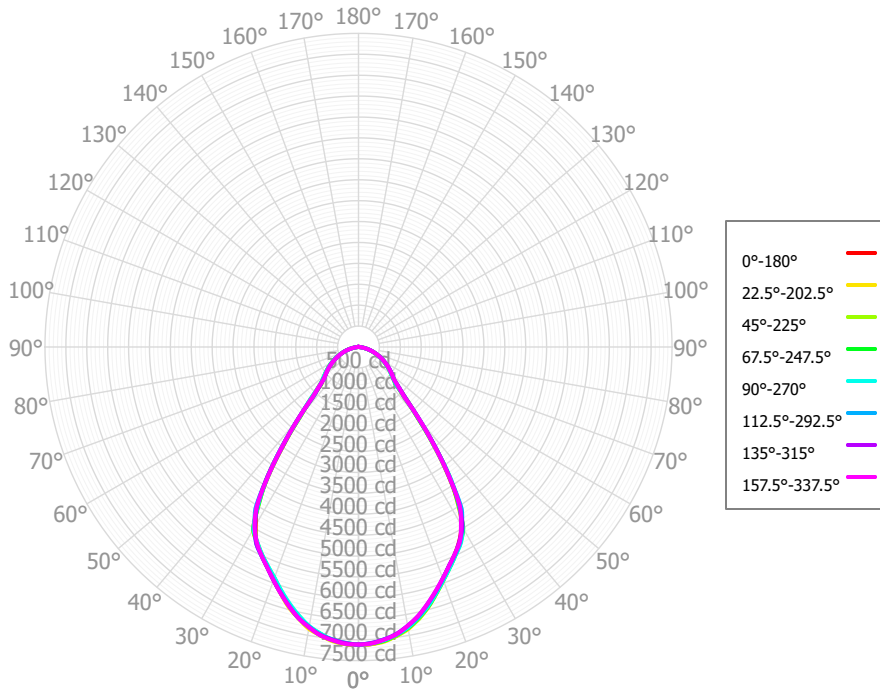
Full Beam Angle

0° - 180°	71°
90° - 270°	72°

IES File Header Contents

Keyword	Value
TEST	SP-01504_3
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TEST DATE	2/27/2023
ISSUEDATE	03/01/2023
LUMCAT	ALDDH16LEDLX 140L 35K xx AL16 MWI TF3 xx
LUMINAIRE	16" Diam. Alum Reflector MW Interior with TF3 Lens
LAMP	N/A
LAMPCAT	N/A
OTHER	Total Luminaire Watts is approximate
OTHER	This report is created by Spectrum Lighting
_CRI	80+
_CCTMULT	40K x 1.00, 30K x 0.978, 27K x 0.949
_LAMPMULT	130L x .890

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	674.45	6.69%	90.00° - 100.00°	3.71	0.04%
10.00° - 20.00°	1795.25	17.80%	100.00° - 110.00°	3.45	0.03%
20.00° - 30.00°	2516.22	24.94%	100.00° - 120.00°	6.57	0.07%
30.00° - 40.00°	2291.68	22.72%	120.00° - 130.00°	2.47	0.02%
40.00° - 50.00°	1095.40	10.86%	130.00° - 140.00°	2.48	0.02%
50.00° - 60.00°	785.19	7.78%	140.00° - 150.00°	2.23	0.02%
60.00° - 70.00°	557.95	5.53%	150.00° - 160.00°	1.81	0.02%
70.00° - 80.00°	291.71	2.89%	160.00° - 170.00°	1.16	0.01%
80.00° - 90.00°	58.62	0.58%	170.00° - 180.00°	0.40	0.00%
0.00° - 90.00°	10066.46	99.79%	0.00° - 180.00°	10087.29	100.00%

Candela Distribution

	0.00°	22.50°	45.00°	67.50°	90.00°	112.50°	135.00°	157.50°	180.00°	202.50°	225.00°	247.50°	270.00°	292.50°	315.00°	337.50°	360.00°
0.00°	7117.40	7117.40	7117.40	7117.40	7117.40	7117.40	7117.40	7117.40	7117.40	7117.40	7117.40	7117.40	7117.40	7117.40	7117.40	7117.40	7117.40
2.50°	7113.92	7111.10	7114.12	7095.42	7089.43	7095.63	7088.77	7110.83	7110.57	7106.00	7116.66	7088.40	7082.44	7094.97	7085.17	7102.52	7113.92
5.00°	7052.87	7075.20	7048.86	7056.93	7043.28	7023.39	7033.54	7046.40	7044.23	7066.01	7047.22	7044.12	7032.01	7018.01	7022.08	7028.73	7052.87
7.50°	6966.10	6966.82	6972.80	6946.94	6943.36	6950.27	6949.07	6960.02	6957.92	6956.69	6962.28	6923.30	6918.78	6939.66	6920.77	6936.23	6966.10
10.00°	6815.16	6853.05	6826.59	6827.14	6815.38	6794.88	6812.11	6809.95	6810.59	6844.96	6806.67	6794.79	6778.49	6777.50	6770.71	6774.00	6815.16
12.50°	6638.96	6653.27	6667.89	6633.26	6629.53	6638.00	6638.57	6640.17	6642.13	6646.32	6637.32	6590.52	6579.93	6613.35	6588.32	6590.85	6638.96
15.00°	6402.98	6448.86	6435.38	6431.76	6423.16	6407.12	6421.90	6416.31	6419.83	6445.64	6408.28	6379.62	6357.53	6377.44	6366.44	6363.69	6402.98
17.50°	6161.27	6182.88	6190.82	6178.24	6176.46	6176.03	6176.08	6186.28	6179.58	6183.71	6175.14	6131.42	6119.35	6141.36	6134.67	6124.11	6161.27
20.00°	5906.46	5920.04	5942.35	5929.37	5936.76	5937.37	5939.84	5939.95	5939.41	5920.79	5925.07	5880.28	5875.05	5900.95	5891.17	5892.13	5906.46
22.50°	5666.89	5692.84	5693.28	5709.49	5710.40	5700.28	5709.89	5704.82	5699.27	5705.19	5685.79	5675.04	5665.53	5662.57	5665.95	5662.17	5666.89
25.00°	5460.48	5466.11	5481.53	5490.82	5494.07	5502.89	5498.14	5497.79	5487.49	5489.80	5488.30	5472.86	5469.03	5467.22	5461.50	5454.59	5460.48
27.50°	5225.86	5244.26	5274.97	5279.29	5295.91	5299.05	5297.81	5266.51	5284.29	5270.12	5265.60	5255.46	5250.93	5264.89	5231.43	5252.69	5225.86
30.00°	4931.94	4988.29	4914.08	5011.85	4985.09	4958.82	4948.91	4977.52	4922.45	5045.18	4951.49	5037.23	5025.18	4944.98	4973.12	4901.58	4931.94
32.50°	4486.98	4408.45	4533.16	4434.79	4476.29	4592.65	4511.07	4541.99	4515.60	4426.00	4531.80	4429.28	4466.93	4594.41	4492.47	4514.38	4486.98
35.00°	3739.61	3801.43	3754.01	3815.04	3841.15	3789.39	3816.60	3769.69	3762.80	3802.32	3745.10	3803.19	3795.34	3789.80	3777.09	3780.35	3739.61
37.50°	2990.16	2965.42	2928.57	2977.16	2994.09	2990.60	2973.22	3000.32	2915.91	2963.07	2969.87	2987.77	3017.05	2992.10	3029.56	2968.14	2990.16
40.00°	2236.73	2171.14	2240.06	2196.45	2249.74	2257.87	2261.45	2237.45	2226.81	2135.99	2232.18	2165.05	2204.43	2280.89	2249.55	2278.63	2236.73
42.50°	1646.32	1692.10	1565.65	1686.17	1672.39	1562.14	1622.56	1625.72	1577.92	1686.32	1611.23	1713.03	1715.48	1608.47	1694.36	1614.81	1646.32
45.00°	1357.08	1258.79	1325.88	1248.02	1269.15	1328.65	1295.07	1333.25	1307.74	1251.24	1357.02	1271.06	1326.61	1374.13	1359.96	1347.27	1357.08
47.50°	1140.01	1148.06	1127.03	1134.47	1136.44	1108.03	1134.61	1110.74	1129.73	1148.49	1144.97	1165.51	1165.51	1153.22	1151.61	1158.54	1140.01
50.00°	1052.07	1040.71	1033.79	1027.01	1025.60	1026.08	1027.03	1028.94	1030.30	1046.63	1057.91	1065.29	1070.68	1064.69	1063.51	1055.14	1052.07
52.50°	965.53	955.09	949.58	945.10	947.26	944.45	946.49	947.35	948.71	961.66	972.01	979.79	981.78	976.84	976.97	967.41	965.53
55.00°	881.37	870.09	866.10	863.75	867.26	865.94	867.67	866.17	868.05	877.14	889.44	894.42	894.50	894.99	891.87	885.01	881.37
57.50°	799.17	788.69	782.69	784.62	784.88	787.47	789.68	786.33	787.59	799.62	807.64	814.63	813.46	813.20	809.37	803.54	799.17
60.00°	720.20	708.20	706.72	705.93	705.94	709.33	711.84	708.97	710.00	722.07	727.88	734.83	734.06	731.93	729.15	723.69	720.20
62.50°	641.55	632.70	631.21	628.86	631.81	631.46	634.06	632.51	632.98	644.14	648.71	653.92	655.85	651.15	649.75	644.11	641.55
65.00°	563.40	557.54	555.13	552.65	557.07	555.71	557.95	557.63	558.28	566.42	571.03	573.12	577.95	574.06	571.04	566.52	563.40
67.50°	486.31	484.15	479.02	479.52	481.50	480.41	482.60	484.32	484.02	491.31	494.41	497.44	502.06	497.29	494.39	489.23	486.31
70.00°	410.83	411.47	407.20	407.10	408.29	408.33	409.95	413.71	413.45	416.57	420.38	421.91	426.64	422.72	419.39	417.32	410.83
72.50°	338.58	342.21	335.56	337.05	338.10	337.00	338.48	343.71	343.53	345.90	348.96	351.73	354.90	349.00	346.71	346.13	338.58
75.00°	271.02	273.75	269.03	268.44	270.59	270.69	271.23	274.73	274.17	275.83	283.76	281.68	283.96	280.50	275.84	276.89	271.02
77.50°	205.89	208.89	202.67	204.38	206.39	205.17	205.74	208.63	204.89	211.36	218.38	214.95	215.87	212.74	209.16	207.88	205.89
80.00°	144.19	145.30	141.26	142.12	144.38	144.53	144.62	147.11	144.02	147.44	152.61	148.72	148.38	149.29	145.63	144.64	144.19
82.50°	87.96	87.13	79.95	85.35	84.96	86.48	85.23	90.51	84.42	88.13	92.61	92.22	90.89	88.84	88.81	82.05	87.96
85.00°	39.17	36.69	43.20	38.16	42.11	43.50	45.37	41.38	45.41	33.71	45.04	37.92	35.32	44.52	36.92	43.65	39.17
87.50°	9.52	17.89	6.80	18.58	18.42	6.92	12.86	10.29	9.20	17.12	11.31	20.05	16.91	7.09	11.85	7.73	9.52
90.00°	4.80	3.04	5.57	4.23	5.80	4.66	3.76	5.75	4.24	2.56	6.35	3.31	5.23	4.66	5.62	3.58	4.80
92.50°	2.37	3.27	4.46	4.38	5.44	2.74	3.16	3.00	3.24	2.62	3.11	3.27	3.29	2.68	3.14	2.29	2.37
95.00°	2.80	3.44	3.62	4.68	5.04	2.55	3.15	2.84	3.01	2.67	3.26	3.23	2.96	2.87	3.17	2.21	2.80
97.50°	2.95	3.35	2.80	5.37	4.62	2.65	3.34	2.82	2.86	2.61	3.44	3.15	2.99	3.07	2.87	2.23	2.95
100.00°	2.77	3.14	3.22	6.03	4.14	4.04	3.10	3.01	2.60	2.47	3.66	3.09	3.08	3.32	2.35	2.15	2.77
102.50°	2.61	2.50	3.62	6.59	3.60	5.09	2.72	2.90	2.32	1.83	3.80	3.22	2.94	3.65	2.51	2.07	2.61
105.00°	2.49	2.07	3.60	6.82	3.26	4.60	2.75	2.40	2.11	1.36	3.79	3.38	2.77	4.32	3.09	2.43	2.49

Coefficients of Utilization – Zonal Cavity Method

Values are lumens delivered to the workplane.

RCR	pfc	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	0%
	pcc	80%	80%	80%	80%	70%	70%	70%	70%	50%	50%	50%	30%	30%	30%	10%	10%	0%
	pw	70%	50%	30%	10%	70%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	0%
	0	12004	12004	12004	12004	11722	11722	11722	11722	11197	11197	11197	10716	10716	10716	10274	10274	10066
	1	11239	10873	10544	10248	10977	10648	10351	10082	10227	9985	9764	9840	9646	9466	9483	9329	9136
	2	10476	9834	9303	8857	10232	9651	9165	8753	9307	8902	8552	8989	8655	8361	8696	8422	8247
	3	9771	8935	8289	7774	9545	8784	8187	7706	8500	7993	7575	8237	7808	7448	7993	7634	7476
	4	9128	8161	7453	6912	8921	8036	7377	6867	7799	7229	6778	7579	7089	6691	7375	6955	6814
	5	8544	7491	6755	6211	8356	7386	6696	6180	7187	6582	6118	7002	6472	6057	6829	6368	5998
	6	8014	6906	6162	5629	7843	6817	6116	5606	6649	6026	5562	6492	5940	5518	6345	5857	5746
	7	7532	6393	5655	5137	7377	6318	5618	5121	6175	5546	5088	6040	5477	5056	5914	5410	5024
	8	7095	5941	5215	4716	6954	5876	5185	4704	5753	5127	4680	5638	5070	4655	5529	5016	4632
	9	6696	5540	4831	4353	6568	5484	4807	4343	5378	4758	4324	5278	4712	4306	5183	4667	4287
	10	6333	5183	4494	4035	6217	5134	4473	4028	5042	4433	4013	4954	4394	3998	4872	4356	4287

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	235.3 fc	7.9 ft
6.5 ft	168.5 fc	9.3 ft
7.5 ft	126.5 fc	10.7 ft
8.0 ft	111.2 fc	11.5 ft
10.0 ft	71.2 fc	14.3 ft
12.0 ft	49.4 fc	17.2 ft
14.0 ft	36.3 fc	20.0 ft
16.0 ft	27.8 fc	22.9 ft
20.0 ft	17.8 fc	28.6 ft
24.0 ft	12.4 fc	34.4 ft
28.0 ft	9.1 fc	40.1 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	55144	55144	55144
45.00°	14870	14528	13906
55.00°	11905	11699	11715
65.00°	10329	10177	10213
75.00°	8113	8054	8100
85.00°	3482	3840	3743

UGR CIE 190:2010

Ceiling reflectance		0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
Wall reflectance		0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
Plane reflectance		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Room dimensions		Viewed crosswise					Viewed endwise				
2H	2H	17.7	19.0	18.1	19.3	19.6	17.7	19.0	18.1	19.3	19.6
	3H	19.2	20.4	19.6	20.7	21.1	19.3	20.4	19.7	20.7	21.1
	4H	19.8	20.8	20.2	21.2	21.6	19.8	20.9	20.2	21.2	21.6
	6H	20.1	21.0	20.5	21.4	21.8	20.1	21.1	20.5	21.5	21.9
	8H	20.1	21.1	20.6	21.4	21.9	20.2	21.1	20.6	21.5	21.9
	12H	20.1	21.0	20.6	21.4	21.8	20.2	21.1	20.6	21.5	21.9
4H	2H	18.2	19.3	18.6	19.6	20.0	18.2	19.3	18.6	19.7	20.0
	3H	19.9	20.8	20.4	21.2	21.6	20.0	20.9	20.4	21.3	21.7
	4H	20.6	21.4	21.0	21.8	22.2	20.6	21.4	21.1	21.8	22.3
	6H	21.0	21.7	21.5	22.1	22.6	21.0	21.7	21.5	22.2	22.6
	8H	21.1	21.7	21.5	22.2	22.6	21.1	21.8	21.6	22.2	22.7
	12H	21.1	21.7	21.6	22.1	22.6	21.1	21.7	21.6	22.2	22.7
8H	4H	20.8	21.4	21.2	21.9	22.3	20.8	21.5	21.3	21.9	22.4
	6H	21.3	21.8	21.8	22.3	22.8	21.3	21.8	21.8	22.3	22.8
	8H	21.4	21.8	21.9	22.4	22.9	21.5	21.9	22.0	22.4	22.9
	12H	21.4	21.8	22.0	22.3	22.9	21.5	21.9	22.0	22.4	23.0
12H	4H	20.8	21.3	21.3	21.8	22.3	20.8	21.4	21.3	21.9	22.3
	6H	21.3	21.7	21.8	22.2	22.8	21.3	21.8	21.9	22.3	22.8
	8H	21.4	21.8	21.9	22.3	22.9	21.5	21.9	22.0	22.4	23.0

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0