



IES INDOOR REPORT
PHOTOMETRIC FILENAME : L072111002 .IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TEST] L072111002
 [TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)
 [ISSUE DATE] 9/17/2021
 [MANUFAC] LUX DYNAMICS
 [LUMCAT] WAVEP-1-840-U10-WSA1-DEF1
 [LUMINAIRE] WAVE+, 1' Length, Standard Aiming, 4000K, Standard Acrylic Lenses, w/ Deflector
 [BALLASTCAT] OSRAM OPTOTRONIC OTI50/120-277/1A4 DIM-1 L G2 (6 DRIVER)
 [OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND
 [MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.
 [INPUT] 277VAC
 [TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	32286
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	147
Total Luminaire Watts	219.64
Ballast Factor	1.00
CIE Type	Semi-Indirect
Spacing Criterion (0-180)	N.A.
Spacing Criterion (90-270)	N.A.
Spacing Criterion (Diagonal)	N.A.
Basic Luminous Shape	Rectangular w/Sides
Luminous Length (0-180)	1.25 ft
Luminous Width (90-270)	1.00 ft
Luminous Height	1.19 ft

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	8464	6570	8228
55	4577	4941	6323
65	2911	3805	4338
75	4453	7784	2419
85	20313	12958	791

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CANDELA TABULATION

	<u>0</u>	<u>5</u>	<u>10</u>	<u>15</u>	<u>20</u>	<u>25</u>	<u>30</u>	<u>35</u>	<u>40</u>	<u>45</u>
0	2468	2468	2468	2468	2468	2468	2468	2468	2468	2468
5	2414	2414	2414	2412	2410	2409	2407	2405	2404	2404
10	2370	2370	2370	2369	2366	2365	2363	2361	2360	2360
15	2352	2355	2357	2361	2361	2346	2328	2304	2293	2291
20	2137	2137	2141	2151	2163	2174	2184	2198	2232	2254
25	1952	1950	1952	1956	1960	1967	1981	2004	2038	2064
30	1824	1822	1824	1823	1816	1817	1826	1831	1841	1858
35	1641	1642	1643	1647	1654	1667	1690	1700	1696	1698
40	1494	1495	1497	1499	1498	1499	1504	1515	1530	1555
45	1358	1361	1363	1363	1366	1369	1366	1352	1351	1358
50	1168	1176	1201	1223	1222	1213	1207	1202	1202	1191
55	720	736	779	831	905	970	1019	1052	1058	1042
60	393	422	502	580	650	715	782	823	872	887
65	435	492	594	674	721	750	749	738	769	794
70	489	591	790	946	1094	1183	1208	1194	1128	995
75	610	793	1063	1305	1531	1701	1823	1892	1737	1558
80	908	1107	1434	1727	1980	2205	2373	2428	2301	2105
85	2445	2542	2721	2838	2906	2923	2884	2765	2689	2404
90	3382	3456	3559	3636	3655	3612	3497	3313	3000	2736
95	4270	4316	4381	4411	4365	4242	4055	3817	3512	3203
100	4543	4602	4718	4787	4767	4652	4488	4287	4044	3754
105	5400	5458	5589	5666	5645	5555	5372	5147	4808	4348
110	6883	6892	6898	6831	6646	6380	6082	5752	5385	5033
115	7233	7254	7307	7307	7198	7056	6892	6669	6243	5638
120	8561	8584	8612	8563	8405	8230	7816	7357	6862	6243
125	9391	9378	9304	9163	8938	8649	8289	7774	7249	6656
130	9555	9547	9487	9341	9058	8799	8513	8103	7668	7190
135	9661	9660	9607	9507	9373	9191	8937	8501	8010	7563
140	9910	9906	9869	9750	9517	9295	9112	8809	8313	7849
145	9960	9942	9880	9758	9532	9296	9015	8574	8102	7630
150	9282	9271	9221	9146	8986	8766	8498	8322	8219	8219
155	8880	8872	8846	8804	8781	8770	8754	8647	8479	8341
160	8405	8389	8357	8345	8389	8386	8298	8118	7916	7655
165	7443	7384	7315	7237	7143	7054	6966	6868	6788	6754
170	6473	6488	6520	6536	6526	6511	6512	6528	6550	6623
175	6817	6795	6734	6655	6578	6476	6397	6330	6290	6180
180	5893	5893	5893	5893	5893	5893	5893	5893	5893	5893

Vert. Angles **Horizontal Angles**

	<u>50</u>	<u>55</u>	<u>60</u>	<u>65</u>	<u>70</u>	<u>75</u>	<u>80</u>	<u>85</u>	<u>90</u>	<u>95</u>
0	2468	2468	2468	2468	2468	2468	2468	2468	2468	2468
5	2404	2405	2406	2407	2409	2412	2419	2434	2454	2465
10	2361	2362	2362	2362	2361	2361	2360	2367	2399	2410
15	2291	2292	2291	2291	2289	2288	2288	2288	2318	2325
20	2228	2201	2198	2196	2198	2197	2194	2192	2214	2213
25	2083	2122	2101	2084	2083	2084	2081	2078	2096	2084
30	1891	1928	1961	1974	1954	1952	1951	1947	1958	1943
35	1702	1725	1768	1801	1817	1807	1806	1801	1807	1791
40	1556	1554	1567	1609	1651	1654	1654	1650	1649	1636
45	1378	1398	1401	1412	1460	1490	1495	1491	1481	1470
50	1190	1205	1231	1246	1259	1304	1320	1322	1309	1296
55	1030	1023	1034	1067	1085	1109	1141	1148	1138	1121
60	898	867	851	866	893	911	944	961	951	934

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CANDELA TABULATION - (Cont.)

65	778	746	710	682	688	715	739	766	757	742
70	836	734	640	557	514	520	548	576	579	560
75	1321	1025	746	552	418	353	363	386	396	396
80	1791	1403	1006	689	439	284	215	219	230	246
85	2044	1658	1271	908	589	344	179	110	117	142
90	2407	1991	1548	1125	760	588	295	159	82	128
95	2775	2390	1892	1464	1076	734	592	364	274	217
100	3207	2811	2329	1898	1455	1086	833	680	509	432
105	3866	3381	2758	2337	1883	1496	1233	1005	825	711
110	4526	3863	3171	2764	2364	1964	1719	1495	1284	1099
115	5012	4355	3758	3295	2807	2546	2308	2087	1855	1641
120	5548	4932	4422	3960	3511	3044	2838	2682	2525	2288
125	6095	5537	4979	4587	3968	3748	3542	3318	3283	2986
130	6591	6080	5640	4905	4668	4617	4020	4106	4159	3614
135	7109	6541	5825	5630	5683	5226	4647	5097	5031	4264
140	7170	6614	6616	6653	6303	5620	5451	5968	5908	4949
145	7399	7510	7466	7201	6552	5965	6410	6724	6648	5726
150	8146	7879	7612	7159	6586	6591	7211	7335	7196	6390
155	8098	7832	7417	6962	6923	7293	7560	7531	7414	6881
160	7398	7091	6882	6918	7164	7379	7382	7342	7251	6838
165	6785	6848	6954	7101	7146	7115	7042	7024	6913	6670
170	6688	6707	6711	6648	6548	6404	6288	6194	6103	5956
175	6092	5988	5847	5733	5590	5457	5367	5297	5242	5224
180	5893	5893	5893	5893	5893	5893	5893	5893	5893	5893

Vert. Horizontal Angles

	100	105	110	115	120	125	130	135	140	145
0	2468	2468	2468	2468	2468	2468	2468	2468	2468	2468
5	2466	2459	2447	2437	2431	2429	2431	2432	2431	2427
10	2395	2377	2376	2378	2379	2381	2391	2402	2407	2407
15	2300	2296	2299	2308	2326	2334	2333	2333	2334	2335
20	2194	2196	2211	2227	2230	2234	2243	2248	2248	2248
25	2074	2085	2103	2107	2116	2125	2128	2131	2128	2113
30	1940	1958	1966	1978	1986	1989	1982	1956	1911	1854
35	1795	1806	1816	1828	1829	1806	1748	1690	1666	1654
40	1642	1649	1663	1665	1629	1554	1517	1507	1510	1527
45	1472	1479	1489	1457	1382	1349	1352	1356	1345	1351
50	1291	1300	1279	1211	1185	1191	1183	1188	1205	1237
55	1110	1113	1052	1018	1017	1020	1047	1097	1160	1257
60	925	900	859	849	864	915	1000	1100	1216	1324
65	733	704	697	718	774	872	991	1119	1236	1337
70	546	544	570	629	723	850	969	1073	1142	1182
75	390	420	479	558	659	754	828	874	906	925
80	278	316	385	462	535	600	649	685	704	710
85	186	242	299	365	429	495	541	571	588	601
90	178	235	293	355	411	463	503	530	542	546
95	239	278	325	368	413	466	518	550	558	559
100	385	397	422	440	464	490	512	516	503	487
105	654	601	598	608	617	607	576	531	492	474
110	985	933	885	851	852	819	765	694	635	573
115	1451	1370	1288	1228	1167	1106	1030	909	810	775
120	2042	1964	1824	1688	1609	1509	1365	1226	1113	1041
125	2735	2669	2535	2278	2108	2048	1896	1712	1530	1401
130	3364	3354	3241	2947	2692	2495	2400	2263	2057	1905
135	4182	3576	3917	3698	3407	3145	2930	2745	2625	2510

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CANDELA TABULATION - (Cont.)

140	5034	4277	4011	4335	4106	3872	3651	3446	3270	3087
145	5529	5469	4542	4546	4821	4664	4484	4271	4060	3860
150	5943	6384	5831	5003	5007	5338	5266	5050	4848	4664
155	6192	6388	6616	5969	5384	5137	5238	5425	5413	5269
160	6265	5962	6151	6245	5960	5360	4994	4805	4855	4887
165	6315	5931	5655	5637	5711	5607	5378	5166	4949	4773
170	5757	5529	5344	5125	4938	4838	4795	4823	4827	4769
175	5207	5197	5179	5158	5176	5196	5219	5219	5245	5286
180	5893	5893	5893	5893	5893	5893	5893	5893	5893	5893

**Vert. Horizontal Angles
Angles**

	150	155	160	165	170	175	180
0	2468	2468	2468	2468	2468	2468	2468
5	2426	2423	2422	2420	2417	2417	2418
10	2404	2402	2401	2399	2396	2397	2400
15	2339	2339	2337	2335	2333	2334	2338
20	2247	2245	2242	2241	2237	2236	2239
25	2091	2067	2033	2006	1985	1976	1973
30	1819	1802	1789	1780	1774	1775	1776
35	1656	1652	1655	1658	1659	1659	1658
40	1508	1499	1499	1499	1501	1502	1502
45	1362	1362	1373	1385	1394	1400	1403
50	1283	1317	1373	1433	1479	1509	1523
55	1355	1434	1499	1558	1603	1635	1649
60	1429	1517	1586	1650	1694	1717	1728
65	1411	1463	1498	1524	1542	1557	1563
70	1201	1210	1210	1210	1219	1229	1235
75	934	939	939	937	941	948	952
80	707	703	700	700	706	713	717
85	606	612	612	613	620	632	640
90	549	545	539	534	531	535	542
95	555	548	535	525	520	520	525
100	468	450	426	410	399	396	399
105	457	437	408	377	359	351	346
110	524	485	458	431	425	426	423
115	729	695	649	621	629	635	631
120	980	922	873	859	885	898	894
125	1329	1253	1191	1165	1173	1175	1165
130	1774	1656	1566	1521	1514	1510	1498
135	2361	2216	2113	2056	2025	2005	1989
140	2898	2764	2679	2627	2617	2600	2585
145	3655	3486	3336	3239	3186	3134	3119
150	4484	4308	4152	4022	3918	3842	3818
155	5150	5042	4937	4853	4758	4686	4668
160	4941	5083	5224	5237	5175	5147	5144
165	4651	4566	4498	4499	4509	4513	4543
170	4644	4539	4466	4423	4414	4418	4445
175	5334	5411	5482	5543	5580	5552	5505
180	5893	5893	5893	5893	5893	5893	5893

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	882.42	N.A.	2.70
0-30	1828.93	N.A.	5.70
0-40	2908.89	N.A.	9.00
0-60	5005.03	N.A.	15.50
0-80	6885.96	N.A.	21.30
0-90	8148.08	N.A.	25.20
10-90	7917.81	N.A.	24.50
20-40	2026.48	N.A.	6.30
20-50	3113.03	N.A.	9.60
40-70	3012.55	N.A.	9.30
60-80	1880.93	N.A.	5.80
70-80	964.51	N.A.	3.00
80-90	1262.13	N.A.	3.90
90-110	4056.75	N.A.	12.60
90-120	7132.7	N.A.	22.10
90-130	10874.47	N.A.	33.70
90-150	18732.77	N.A.	58.00
90-180	24138.35	N.A.	74.80
110-180	20081.6	N.A.	62.20
0-180	32286.43	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	230.27
10-20	652.15
20-30	946.52
30-40	1079.96
40-50	1086.55
50-60	1009.58
60-70	916.42
70-80	964.51
80-90	1262.13
90-100	1739.79
100-110	2316.95
110-120	3075.95
120-130	3741.77
130-140	4006.32
140-150	3851.99
150-160	3100.23
160-170	1757.71
170-180	547.64

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COEFFICIENTS OF 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
0	101	101	101	101	90	90	90	90	70	70	70	51	51	51	33	33	33	25
1	91	86	82	78	80	76	73	69	59	56	54	42	40	39	27	26	25	18
2	82	74	68	63	73	66	61	56	51	47	44	36	34	32	23	22	20	14
3	75	65	58	52	66	58	52	46	44	40	36	32	29	26	20	19	17	12
4	68	57	49	43	60	51	44	39	39	34	31	28	25	22	18	16	14	10
5	62	51	43	37	55	45	38	33	35	30	26	25	22	19	16	14	13	9
6	57	45	37	32	51	41	34	29	31	26	23	23	19	17	15	13	11	8
7	53	41	33	28	47	37	30	25	28	23	20	21	17	15	13	11	10	7
8	49	37	29	24	43	33	26	22	26	21	17	19	15	13	12	10	9	6
9	46	34	26	21	40	30	24	19	23	19	15	17	14	12	11	9	8	5
10	42	31	24	19	38	28	21	17	22	17	14	16	13	10	11	8	7	5

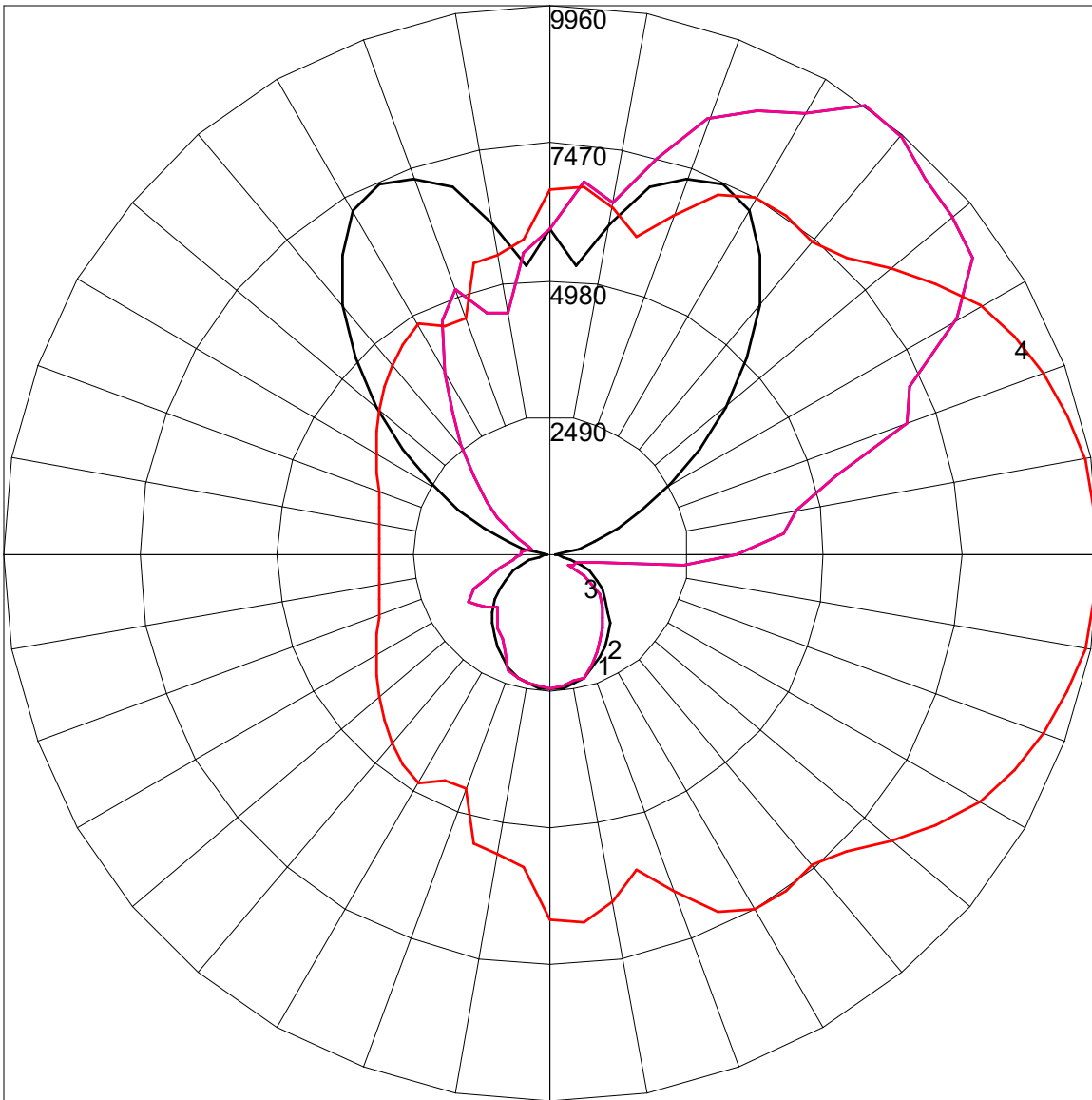
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UGR TABLE - CORRECTED

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	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	13.5
	3H	12.1	12.1	12.1	12.7	14.3	12.1	12.1	12.6	13.2	14.8
	4H	12.9	13.5	14.0	14.6	16.2	12.1	12.4	13.0	13.6	15.2
	6H	15.0	15.6	16.2	16.7	18.4	12.1	12.6	13.2	13.7	15.4
	8H	16.8	17.4	18.0	18.5	20.2	12.1	12.6	13.2	13.8	15.4
	12H	19.2	19.7	20.4	20.9	22.5	12.1	12.6	13.3	13.7	15.4
4H	2H	12.1	12.1	12.1	12.1	12.2	12.1	12.1	12.1	12.5	14.1
	3H	13.2	13.7	14.4	14.9	16.5	12.4	12.9	13.6	14.1	15.7
	4H	15.8	16.3	17.0	17.4	19.1	13.0	13.4	14.1	14.6	16.2
	6H	18.2	18.6	19.4	19.8	21.4	13.3	13.7	14.5	14.9	16.5
	8H	19.8	20.2	21.0	21.4	23.0	13.4	13.8	14.6	15.0	16.6
	12H	21.8	22.2	23.0	23.3	25.0	13.4	13.8	14.6	15.0	16.6
8H	4H	17.1	17.5	18.3	18.7	20.3	14.6	15.0	15.8	16.2	17.8
	6H	20.2	20.5	21.4	21.8	23.4	15.5	15.8	16.7	17.0	18.7
	8H	22.0	22.3	23.1	23.4	25.1	15.8	16.1	16.9	17.2	18.9
	12H	23.9	24.2	25.1	25.4	27.1	15.9	16.2	17.1	17.3	19.0
12H	4H	17.3	17.6	18.4	18.8	20.4	15.2	15.5	16.4	16.7	18.4
	6H	20.6	20.9	21.8	22.1	23.7	16.5	16.8	17.7	18.0	19.7
	8H	22.5	22.8	23.7	24.0	25.6	17.1	17.3	18.3	18.5	20.2

Maximum UGR = 27.1

POLAR GRAPH



Maximum Candela = 9960 Located At Horizontal Angle = 0, Vertical Angle = 145
1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)
2 - Vertical Plane Through Horizontal Angles (90 - 270)
3 - Vertical Plane Through Horizontal Angles (0 - 180)
4 - Horizontal Cone Through Vertical Angle (145) (Through Max. Cd.)