



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : KEL-LED-225-1100-35-4-E70-ID.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002  
 [TEST]20200422-5  
 [TESTLAB]Intense Lighting Lab  
 [TESTDATE]2020/04/22  
 [ISSUE DATE] 2020/06/29  
 [MANUFAC]Birchwood  
 [LUMCAT]KEL-LED-225-HLO-35-4-E70ID  
 [LUMINAIRE]KEL-LED-225-HLO-35-4-E70ID  
 [LAMPCAT]59637  
 [LAMP]3500K 80CRI  
 [BALLASTCAT]Power Supply  
 [OPTICS]DF60C/DFEP70:02  
 [CONVERT] Luminaire test position and photometric web converted from original test data

### CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	4580
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	131
Total Luminaire Watts	35
Ballast Factor	1.00
CIE Type	Indirect
Spacing Criterion (0-180)	N.A.
Spacing Criterion (90-270)	N.A.
Spacing Criterion (Diagonal)	N.A.
Basic Luminous Shape	Rectangular
Luminous Length (0-180)	1.19 m
Luminous Width (90-270)	0.05 m
Luminous Height	0.00 m

### LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	0	0	0
55	0	0	0
65	0	0	0
75	0	0	0
85	0	0	0

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**CANDELA TABULATION**

	<u>0</u>	<u>10</u>	<u>20</u>	<u>30</u>	<u>40</u>	<u>50</u>	<u>60</u>	<u>70</u>	<u>80</u>	<u>90</u>
<b>90</b>	5.280	5.280	5.280	5.280	5.280	5.280	5.280	5.280	5.280	5.280
<b>95</b>	24.532	24.258	24.057	24.419	25.798	28.451	32.070	35.401	36.330	35.395
<b>100</b>	61.832	61.190	60.958	62.828	68.442	78.918	94.472	109.855	117.359	117.428
<b>105</b>	119.761	118.377	117.823	121.743	134.184	157.946	191.832	224.426	246.883	250.438
<b>110</b>	202.909	199.831	197.737	203.568	223.337	260.323	310.458	360.047	395.095	400.407
<b>115</b>	314.312	307.478	300.215	303.664	326.053	370.274	428.762	487.729	526.597	531.296
<b>120</b>	448.282	435.333	418.795	415.454	435.586	479.154	539.161	598.268	635.728	639.827
<b>125</b>	601.703	582.966	556.996	545.006	557.490	595.341	650.125	703.356	736.958	740.479
<b>130</b>	774.475	754.352	723.799	703.709	707.325	736.176	780.822	824.670	852.471	854.957
<b>135</b>	962.520	946.825	920.671	901.064	900.220	920.135	953.047	985.876	1006.395	1007.468
<b>140</b>	1167.063	1159.267	1145.671	1135.948	1138.056	1153.569	1176.986	1200.068	1214.240	1213.945
<b>145</b>	1396.581	1395.766	1394.747	1397.411	1406.842	1422.457	1441.346	1458.693	1468.800	1467.678
<b>150</b>	1655.191	1657.967	1664.205	1674.433	1688.549	1704.953	1721.675	1736.501	1744.594	1743.345
<b>155</b>	1931.530	1935.340	1943.045	1954.245	1968.103	1982.595	1996.659	2009.353	2015.769	2014.448
<b>160</b>	2198.431	2201.643	2207.975	2216.690	2226.939	2237.869	2247.969	2257.669	2261.825	2260.384
<b>165</b>	2426.267	2428.754	2433.029	2438.492	2444.872	2451.534	2457.650	2463.440	2465.357	2463.789
<b>170</b>	2595.780	2597.688	2600.092	2602.988	2606.150	2609.213	2611.751	2613.983	2614.216	2612.644
<b>175</b>	2697.838	2699.250	2700.528	2701.616	2702.502	2703.222	2703.541	2703.701	2703.273	2702.302
<b>180</b>	2729.000	2729.000	2729.000	2729.000	2729.000	2729.000	2729.000	2729.000	2729.000	2729.000

**Vert. Angles**      **Horizontal Angles**

	<u>100</u>	<u>110</u>	<u>120</u>	<u>130</u>	<u>140</u>	<u>150</u>	<u>160</u>	<u>170</u>	<u>180</u>	<u>190</u>
<b>90</b>	5.280	5.280	5.280	5.280	5.280	5.280	5.280	5.280	5.280	5.280
<b>95</b>	34.446	32.584	29.798	26.537	24.401	23.423	23.232	23.376	23.429	23.169
<b>100</b>	110.777	99.064	85.358	72.877	64.876	61.119	60.137	60.401	60.524	59.876
<b>105</b>	232.294	201.771	169.600	143.185	126.307	118.655	116.966	117.824	118.151	116.630
<b>110</b>	373.384	325.855	275.132	234.302	207.943	196.865	195.843	198.800	199.741	196.133
<b>115</b>	501.421	447.014	385.898	336.084	305.011	293.055	295.733	303.396	305.493	297.893
<b>120</b>	610.326	556.154	493.874	442.176	412.333	404.374	413.798	428.601	432.468	419.161
<b>125</b>	713.370	663.479	605.607	558.412	533.968	534.741	553.298	575.169	580.599	562.141
<b>130</b>	831.391	788.995	739.334	699.792	682.850	691.076	717.055	742.769	748.801	728.357
<b>135</b>	987.985	954.263	915.598	884.304	872.369	881.966	905.103	926.419	931.338	914.468
<b>140</b>	1198.215	1171.966	1142.522	1117.781	1104.980	1107.050	1118.363	1129.238	1131.635	1122.537
<b>145</b>	1454.714	1433.269	1409.108	1386.275	1369.265	1359.978	1357.277	1357.494	1357.614	1356.566
<b>150</b>	1732.279	1713.750	1692.173	1669.661	1649.051	1632.829	1621.630	1615.479	1614.366	1618.359
<b>155</b>	2005.239	1989.461	1970.244	1950.052	1930.065	1912.791	1899.709	1891.999	1891.010	1895.869
<b>160</b>	2253.070	2240.663	2225.216	2208.776	2192.948	2179.181	2168.363	2162.353	2161.929	2163.561
<b>165</b>	2458.464	2449.805	2439.092	2427.449	2416.416	2407.180	2400.253	2396.770	2397.608	2394.919
<b>170</b>	2609.334	2604.264	2598.225	2591.683	2585.476	2580.614	2577.285	2576.144	2578.160	2570.386
<b>175</b>	2700.761	2698.695	2696.333	2693.875	2691.768	2690.432	2689.953	2690.927	2693.996	2681.849
<b>180</b>	2729.000	2729.000	2729.000	2729.000	2729.000	2729.000	2729.000	2729.000	2729.000	2729.000

**Vert. Angles**      **Horizontal Angles**

	<u>200</u>	<u>210</u>	<u>220</u>	<u>230</u>	<u>240</u>	<u>250</u>	<u>260</u>	<u>270</u>	<u>280</u>	<u>290</u>
<b>90</b>	5.280	5.280	5.280	5.280	5.280	5.280	5.280	5.280	5.280	5.280
<b>95</b>	23.123	23.666	25.243	28.071	31.649	34.291	35.829	36.427	36.777	34.368
<b>100</b>	60.019	62.187	68.017	78.559	92.662	106.382	116.285	119.463	115.143	103.678
<b>105</b>	116.525	120.751	132.833	155.097	185.432	218.237	244.186	252.295	237.794	208.874
<b>110</b>	194.134	199.427	217.942	252.516	299.761	350.535	388.907	399.833	377.957	333.174
<b>115</b>	291.016	294.621	316.867	358.307	415.978	475.598	517.427	528.619	504.773	453.561
<b>120</b>	404.589	403.154	423.249	465.761	525.296	585.033	625.820	636.475	613.305	562.588
<b>125</b>	539.201	529.144	542.159	580.237	635.190	690.385	727.638	737.513	716.413	670.460

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**CANDELA TABULATION - (Cont.)**

<b>130</b>	699.951	681.961	687.592	717.920	764.732	811.659	843.817	852.988	835.779	797.576
<b>135</b>	890.106	872.683	874.580	897.831	934.694	971.614	998.134	1006.770	994.529	966.101
<b>140</b>	1109.483	1101.636	1106.630	1126.545	1154.085	1183.080	1204.606	1212.996	1205.514	1185.771
<b>145</b>	1355.837	1361.245	1371.408	1389.948	1414.000	1437.628	1456.250	1464.353	1460.009	1445.750
<b>150</b>	1624.942	1636.101	1653.418	1670.964	1692.379	1713.934	1730.040	1737.798	1737.723	1724.288
<b>155</b>	1904.456	1916.815	1932.385	1950.628	1969.131	1988.249	2002.225	2009.088	2007.594	1999.049
<b>160</b>	2170.843	2181.274	2193.894	2207.765	2224.329	2239.090	2250.057	2255.707	2255.262	2249.530
<b>165</b>	2400.034	2407.158	2415.845	2425.932	2437.099	2448.362	2455.574	2459.467	2459.643	2456.558
<b>170</b>	2573.800	2578.138	2583.196	2588.882	2595.781	2602.194	2606.296	2608.756	2609.347	2608.094
<b>175</b>	2683.726	2685.722	2687.769	2689.819	2693.043	2695.887	2697.566	2698.705	2699.114	2699.075
<b>180</b>	2729.000	2729.000	2729.000	2729.000	2729.000	2729.000	2729.000	2729.000	2729.000	2729.000

**Vert. Horizontal Angles**

	<u><b>300</b></u>	<u><b>310</b></u>	<u><b>320</b></u>	<u><b>330</b></u>	<u><b>340</b></u>	<u><b>350</b></u>	<u><b>360</b></u>
<b>90</b>	5.280	5.280	5.280	5.280	5.280	5.280	5.280
<b>95</b>	30.631	27.351	25.285	24.415	24.320	24.525	24.532
<b>100</b>	86.828	73.416	65.460	61.850	61.126	61.694	61.832
<b>105</b>	174.364	144.999	127.061	119.335	117.985	119.378	119.761
<b>110</b>	282.836	239.007	211.398	199.605	198.480	201.947	202.909
<b>115</b>	393.619	343.064	311.061	299.836	303.291	312.063	314.312
<b>120</b>	501.381	450.289	420.061	414.059	426.503	443.956	448.282
<b>125</b>	614.826	568.422	545.196	547.765	570.018	595.718	601.703
<b>130</b>	751.656	714.453	699.602	710.881	739.529	768.212	774.475
<b>135</b>	931.661	904.237	895.383	907.912	932.999	957.238	962.520
<b>140</b>	1161.081	1140.206	1131.172	1136.157	1148.899	1163.311	1167.063
<b>145</b>	1426.802	1408.205	1394.887	1389.190	1388.647	1394.311	1396.581
<b>150</b>	1708.389	1690.500	1674.299	1661.949	1653.202	1654.014	1655.191
<b>155</b>	1986.027	1970.383	1954.905	1941.800	1931.253	1930.999	1931.530
<b>160</b>	2239.958	2228.246	2216.309	2206.134	2197.569	2197.731	2198.431
<b>165</b>	2451.119	2443.782	2436.233	2429.776	2424.192	2425.260	2426.267
<b>170</b>	2605.736	2602.283	2598.671	2595.649	2592.964	2594.659	2595.780
<b>175</b>	2698.500	2697.567	2696.554	2695.724	2695.132	2696.671	2697.838
<b>180</b>	2729.000	2729.000	2729.000	2729.000	2729.000	2729.000	2729.000

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**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	0.00	N.A.	0.00
0-30	0.00	N.A.	0.00
0-40	0.00	N.A.	0.00
0-60	0.00	N.A.	0.00
0-80	0.00	N.A.	0.00
0-90	0.00	N.A.	0.00
10-90	0.00	N.A.	0.00
20-40	0.00	N.A.	0.00
20-50	0.00	N.A.	0.00
40-70	0.00	N.A.	0.00
60-80	0.00	N.A.	0.00
70-80	0.00	N.A.	0.00
80-90	0.00	N.A.	0.00
90-110	214.91	N.A.	4.70
90-120	586.28	N.A.	12.80
90-130	1136.73	N.A.	24.80
90-150	2746.19	N.A.	60.00
90-180	4580.39	N.A.	100.00
110-180	4365.48	N.A.	95.30
0-180	4580.39	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	0.00
10-20	0.00
20-30	0.00
30-40	0.00
40-50	0.00
50-60	0.00
60-70	0.00
70-80	0.00
80-90	0.00
90-100	38.82
100-110	176.09
110-120	371.37
120-130	550.45
130-140	727.57
140-150	881.88
150-160	898.29
160-170	681.72
170-180	254.19

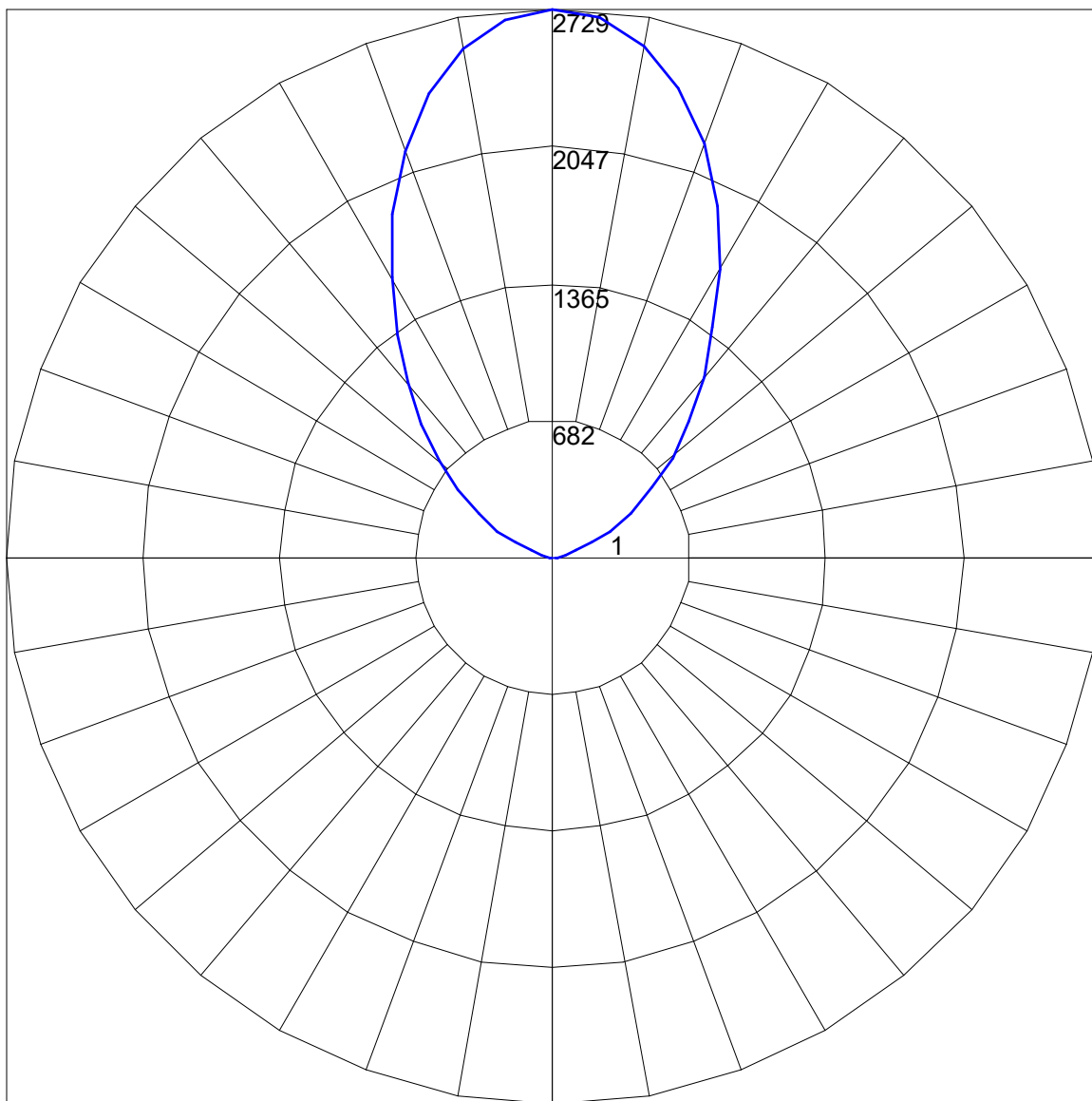
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**COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD**

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	95	95	95	95	81	81	81	81	56	56	56	32	32	32	10	10	10	0
1	87	83	79	76	74	71	68	65	48	47	45	28	27	26	9	9	8	0
2	79	72	66	62	67	62	57	53	42	40	37	24	23	22	8	7	7	0
3	72	63	56	51	61	54	49	44	37	34	31	21	20	18	7	6	6	0
4	65	56	48	43	56	48	42	37	33	29	26	19	17	16	6	6	5	0
5	60	49	42	36	51	42	36	32	29	25	22	17	15	13	5	5	4	0
6	55	44	36	31	47	38	32	27	26	22	19	15	13	11	5	4	4	0
7	50	39	32	27	43	34	28	23	23	19	17	14	11	10	4	4	3	0
8	47	35	28	23	40	30	24	20	21	17	14	12	10	9	4	3	3	0
9	43	32	25	20	37	28	22	18	19	15	13	11	9	8	4	3	3	0
10	40	29	22	18	34	25	19	16	17	14	11	10	8	7	3	3	2	0

POLAR GRAPH



Maximum Candela = 2729 Located At Horizontal Angle = 0, Vertical Angle = 180  
# 1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)