



IES INDOOR REPORT

PHOTOMETRIC FILENAME : KEL-LED-225-970-35-4-BW.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TEST]20200420-2
 [TESTLAB]Intense Lighting Lab
 [TESTDATE]2020/04/20
 [ISSUE DATE] 2020/06/29
 [MANUFAC]Birchwood
 [LUMCAT]KEL-LED-225-HL0-35-4-BW
 [LUMINAIRE]KEL-LED-225-HL0-35-4-BW
 [LAMPCAT]59637
 [LAMP]3500K 80CRI
 [BALLASTCAT]Power Supply
 [OPTICS]DF90C/DFBW 30:70

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	3882
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	111
Total Luminaire Watts	34.9
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.80
Spacing Criterion (90-270)	1.14
Spacing Criterion (Diagonal)	1.64
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	29476	25487	15110
55	26594	24109	14799
65	20231	19562	13841
75	12653	12356	10322
85	7061	6403	4746

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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>
0	1116.826	1116.826	1116.826	1116.826	1116.826	1116.826	1116.826	1116.826	1116.826	1116.826
5	1145.324	1143.329	1139.657	1134.257	1127.607	1120.637	1114.318	1109.515	1107.125	1107.609
10	1234.521	1229.816	1217.426	1197.496	1172.174	1144.136	1116.990	1094.809	1081.164	1078.475
15	1339.611	1332.540	1311.702	1277.061	1230.543	1176.144	1120.788	1073.106	1041.848	1033.126
20	1423.115	1414.759	1388.776	1344.011	1281.085	1203.467	1119.644	1043.981	992.276	975.798
25	1471.124	1462.321	1434.072	1384.136	1311.165	1215.895	1107.974	1006.405	935.524	911.401
30	1481.306	1472.635	1444.384	1392.850	1314.674	1208.175	1081.924	960.052	874.278	844.259
35	1451.127	1443.319	1417.399	1368.130	1289.596	1177.344	1039.497	904.587	810.656	777.474
40	1378.942	1372.695	1351.215	1308.069	1234.144	1122.109	979.744	840.548	745.804	712.472
45	1265.465	1261.172	1245.723	1211.551	1146.961	1041.442	902.810	768.481	679.756	648.717
50	1111.164	1109.172	1100.975	1078.491	1027.167	934.701	808.737	688.195	611.097	583.957
55	926.144	925.989	924.019	912.339	876.668	802.542	698.164	599.620	537.659	515.393
60	723.313	724.468	727.100	724.229	702.620	649.891	572.943	501.803	456.925	439.902
65	519.123	520.859	525.651	528.162	518.019	485.877	438.065	394.343	366.705	355.167
70	338.322	339.505	343.129	345.885	341.754	325.381	301.837	280.500	267.062	260.765
75	198.842	199.442	201.221	202.068	198.584	189.747	179.327	171.078	165.386	162.203
80	100.767	100.963	101.411	100.998	98.227	92.939	87.421	83.824	80.748	78.247
85	37.366	37.380	37.328	36.772	35.169	32.601	30.069	28.039	26.536	25.114
90	5.075	5.075	5.075	5.075	5.075	5.075	5.075	5.075	5.075	5.075

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>
0	1116.826	1116.826	1116.826	1116.826	1116.826	1116.826	1116.826	1116.826	1116.826	1116.826
5	1111.098	1116.954	1124.552	1133.856	1143.807	1152.887	1160.344	1165.013	1167.773	1166.407
10	1087.482	1106.653	1133.459	1164.638	1196.099	1224.119	1246.179	1260.203	1266.572	1262.619
15	1048.914	1085.800	1137.696	1195.673	1251.494	1299.032	1334.518	1356.640	1365.775	1359.654
20	998.300	1054.332	1132.082	1216.134	1293.192	1355.171	1399.242	1425.800	1436.285	1429.004
25	939.170	1012.125	1113.223	1219.225	1311.583	1382.557	1431.386	1459.585	1470.524	1462.719
30	874.896	959.757	1078.529	1200.740	1303.195	1378.531	1428.044	1455.529	1465.820	1458.457
35	808.174	898.070	1027.253	1159.201	1266.223	1340.783	1387.303	1411.964	1420.930	1414.351
40	740.706	828.440	959.258	1093.722	1199.515	1269.579	1310.278	1330.460	1337.292	1332.038
45	672.641	751.829	875.035	1004.285	1104.173	1165.780	1197.922	1211.991	1216.246	1212.858
50	602.630	668.590	775.693	892.310	980.492	1029.850	1051.510	1058.426	1059.709	1058.353
55	528.505	578.543	663.753	759.552	830.112	865.037	875.030	875.085	873.959	874.529
60	447.661	481.328	541.092	609.711	659.794	680.057	681.822	678.060	675.791	677.117
65	358.064	376.641	411.135	452.303	482.366	492.372	490.533	485.708	483.278	484.930
70	260.030	266.546	281.707	302.231	317.617	322.876	320.774	316.914	315.079	316.386
75	160.231	161.308	167.184	176.497	184.672	188.035	187.091	184.979	183.904	184.802
80	77.459	78.495	81.679	86.066	90.421	92.724	92.878	92.214	91.857	92.282
85	25.087	26.048	27.762	29.597	31.495	32.734	33.227	33.325	33.347	33.490
90	5.075	5.075	5.075	5.075	5.075	5.075	5.075	5.075	5.075	5.075

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>
0	1116.826	1116.826	1116.826	1116.826	1116.826	1116.826	1116.826	1116.826	1116.826	1116.826
5	1161.891	1155.142	1146.557	1136.803	1126.892	1118.133	1111.093	1106.772	1105.575	1107.258
10	1249.618	1229.086	1202.185	1171.176	1139.385	1110.770	1089.107	1077.546	1077.492	1088.845
15	1339.532	1306.271	1261.021	1206.795	1148.829	1094.471	1053.081	1032.218	1035.885	1062.945
20	1404.858	1363.793	1305.785	1230.815	1146.999	1066.474	1004.620	974.519	982.901	1028.037
25	1437.170	1392.237	1324.918	1236.235	1131.978	1028.255	948.267	910.598	923.962	986.183
30	1433.930	1387.773	1317.304	1219.770	1100.876	978.687	885.315	843.198	860.898	936.288
35	1392.297	1349.419	1280.477	1179.250	1050.584	918.518	819.301	776.592	796.791	878.976

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CANDELA TABULATION - (Cont.)

40	1314.097	1277.098	1213.001	1113.490	983.267	848.985	751.289	711.369	732.170	814.749
45	1200.469	1171.764	1116.089	1023.175	897.776	770.814	682.075	647.736	667.344	744.177
50	1052.602	1033.912	990.199	909.085	796.156	684.804	610.333	582.823	600.345	666.737
55	874.704	867.005	837.133	773.125	680.319	591.192	534.312	514.303	528.978	582.129
60	680.763	680.342	663.930	619.209	552.807	489.994	451.418	438.815	450.333	488.751
65	489.429	492.000	484.262	457.877	417.647	381.434	359.792	353.889	361.982	385.608
70	320.056	322.534	318.521	304.636	284.381	267.977	259.722	258.996	263.713	274.961
75	186.929	188.131	185.414	177.643	168.216	161.331	159.064	160.207	162.848	167.720
80	93.108	93.218	91.224	86.986	82.470	78.716	77.041	77.172	79.201	82.184
85	33.596	33.257	32.156	30.281	28.376	26.488	25.225	24.869	25.972	27.401
90	5.075	5.075	5.075	5.075	5.075	5.075	5.075	5.075	5.075	5.075

Vert. Angles **Horizontal Angles**

	<u>300</u>	<u>310</u>	<u>320</u>	<u>330</u>	<u>340</u>	<u>350</u>	<u>360</u>
0	1116.826	1116.826	1116.826	1116.826	1116.826	1116.826	1116.826
5	1112.661	1118.897	1126.049	1133.078	1138.857	1142.771	1143.943
10	1110.948	1137.780	1166.335	1192.885	1214.201	1228.103	1233.344
15	1108.947	1163.968	1219.240	1268.340	1305.817	1329.605	1338.224
20	1102.354	1185.427	1265.561	1332.365	1381.104	1410.745	1421.414
25	1084.821	1193.847	1292.621	1370.924	1425.523	1457.751	1469.246
30	1054.953	1182.584	1294.490	1378.686	1435.478	1467.838	1479.157
35	1009.310	1149.457	1268.289	1354.202	1408.630	1438.621	1448.792
40	948.500	1093.556	1213.000	1294.728	1343.263	1368.457	1376.608
45	872.338	1013.584	1127.083	1199.592	1239.046	1257.555	1263.072
50	780.849	909.098	1009.495	1068.754	1096.146	1106.485	1108.929
55	674.793	780.690	862.241	904.942	920.784	924.248	924.194
60	555.312	632.752	691.300	718.979	725.216	723.459	721.710
65	426.113	473.786	509.847	524.525	524.527	520.237	518.014
70	294.708	318.040	336.393	343.234	342.043	338.978	337.430
75	175.434	185.462	194.979	199.937	200.219	198.951	198.246
80	85.489	90.546	96.103	99.536	100.570	100.563	100.408
85	29.212	31.590	34.148	36.017	36.841	37.109	37.165
90	5.075	5.075	5.075	5.075	5.075	5.075	5.075

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	449.79	N.A.	11.60
0-30	1015.13	N.A.	26.20
0-40	1741.22	N.A.	44.90
0-60	3188.92	N.A.	82.10
0-80	3839.19	N.A.	98.90
0-90	3881.89	N.A.	100.00
10-90	3772.8	N.A.	97.20
20-40	1291.42	N.A.	33.30
20-50	2064.27	N.A.	53.20
40-70	1898.33	N.A.	48.90
60-80	650.26	N.A.	16.80
70-80	199.64	N.A.	5.10
80-90	42.71	N.A.	1.10
90-110	0.00	N.A.	0.00
90-120	0.00	N.A.	0.00
90-130	0.00	N.A.	0.00
90-150	0.00	N.A.	0.00
90-180	0.00	N.A.	0.00
110-180	0.00	N.A.	0.00
0-180	3881.89	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	109.10
10-20	340.70
20-30	565.33
30-40	726.09
40-50	772.85
50-60	674.86
60-70	450.62
70-80	199.64
80-90	42.71
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

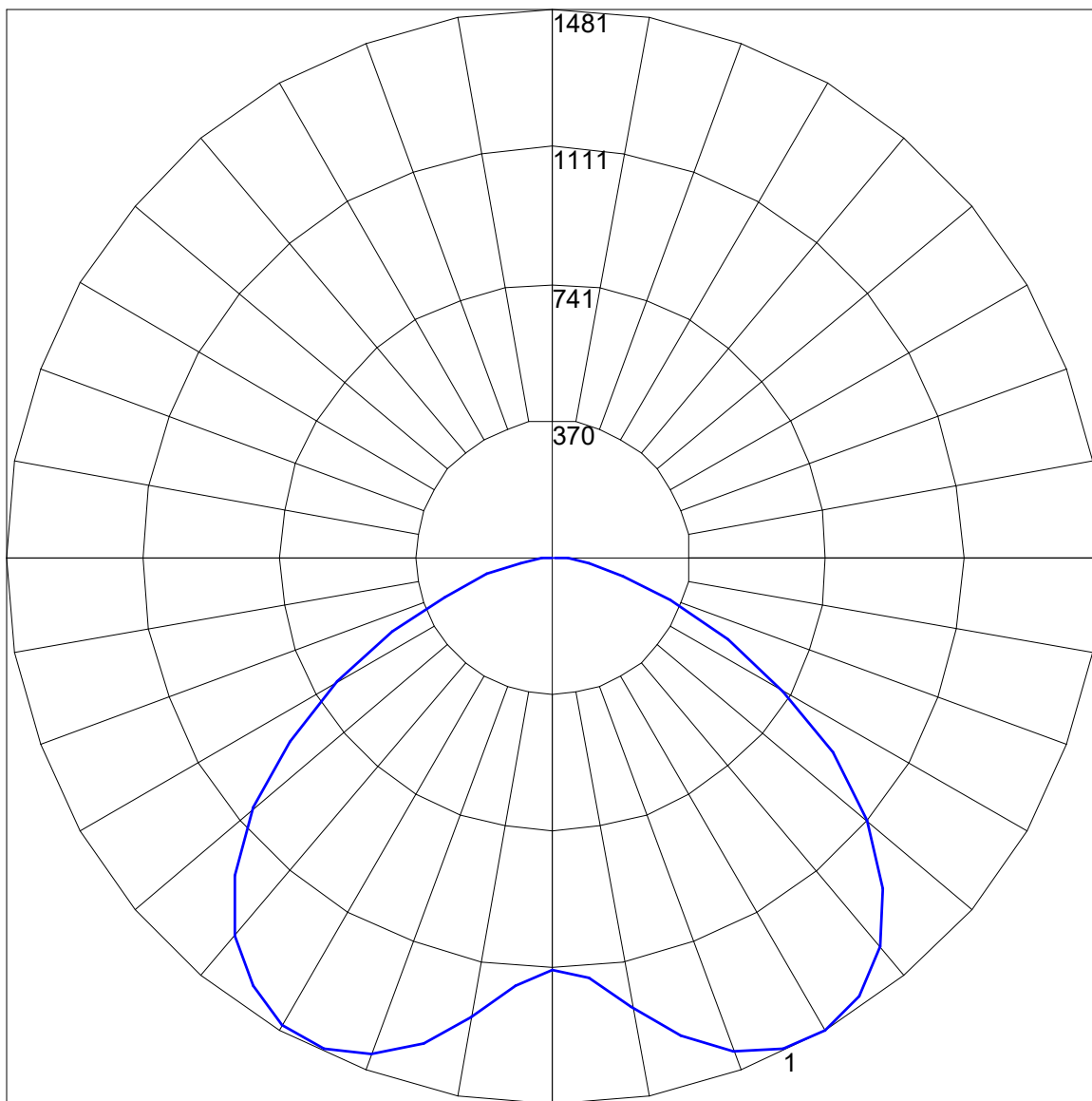
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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	109	105	101	97	107	102	99	95	98	95	92	94	92	90	91	89	87	85
2	100	91	85	79	97	90	83	78	86	81	76	83	79	75	80	76	73	71
3	91	80	72	66	88	79	71	65	76	69	64	73	68	63	70	66	62	60
4	83	71	62	56	81	70	62	55	67	60	54	65	59	54	63	57	53	51
5	76	63	54	48	74	62	54	47	60	53	47	58	52	46	56	50	46	44
6	70	57	48	41	68	56	47	41	54	46	41	52	46	40	51	45	40	38
7	65	51	43	36	63	51	42	36	49	41	36	48	41	36	46	40	35	33
8	60	47	38	32	59	46	38	32	45	37	32	43	37	32	42	36	32	30
9	56	43	34	29	55	42	34	29	41	34	29	40	33	28	39	33	28	26
10	53	39	31	26	51	39	31	26	38	31	26	37	30	26	36	30	26	24

POLAR GRAPH



Maximum Candela = 1481.306 Located At Horizontal Angle = 0, Vertical Angle = 30
1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)