



IES INDOOR REPORT

PHOTOMETRIC FILENAME : KEL-LED-225-920-35-4-HE.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-HE
 [LUMINAIRE]KEL-LED-225-HLO-35-4-HE
 [LAMPCAT]59637
 [LAMP]3500K 80CRI
 [BALLASTCAT]Power Supply
 [OPTICS]DF90C

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	3695
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	107
Total Luminaire Watts	34.5
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.22
Spacing Criterion (90-270)	1.24
Spacing Criterion (Diagonal)	1.34
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	20402	20747	21411
55	18102	18810	19770
65	14069	15150	16861
75	8993	9714	11285
85	5061	5089	4907

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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	1446.453	1446.453	1446.453	1446.453	1446.453	1446.453	1446.453	1446.453	1446.453	1446.453
5	1441.519	1439.518	1438.252	1437.650	1437.504	1437.771	1438.308	1438.882	1439.340	1439.854
10	1414.432	1412.689	1411.671	1411.588	1412.128	1413.296	1414.807	1416.285	1417.631	1418.646
15	1372.916	1371.203	1370.614	1371.140	1372.480	1374.703	1377.080	1379.524	1381.726	1383.483
20	1317.724	1316.240	1316.151	1317.495	1319.594	1322.608	1326.066	1329.485	1332.575	1334.934
25	1249.948	1248.702	1249.187	1251.188	1254.253	1258.256	1262.550	1266.752	1270.705	1273.773
30	1170.535	1169.595	1170.644	1173.370	1177.406	1182.272	1187.448	1192.313	1196.941	1200.654
35	1080.638	1079.945	1081.377	1084.846	1089.874	1095.699	1101.567	1107.093	1112.216	1116.538
40	982.533	981.914	983.542	987.263	992.634	999.355	1006.018	1012.158	1017.691	1022.398
45	875.925	875.535	877.535	881.728	887.351	894.101	901.498	908.240	914.138	919.219
50	758.921	758.989	761.815	767.015	773.681	780.968	788.569	795.958	802.227	807.582
55	630.390	630.724	634.777	642.041	650.524	659.611	668.212	676.008	682.840	688.492
60	495.354	495.712	499.940	508.033	518.630	529.752	540.492	549.592	557.068	563.031
65	361.014	361.315	365.037	372.211	382.582	394.916	406.974	417.843	426.473	432.655
70	239.184	239.372	242.040	247.193	254.795	265.015	275.697	286.067	294.924	300.878
75	141.316	141.367	142.857	145.659	149.813	155.497	161.908	167.972	173.479	177.337
80	71.528	71.498	72.042	73.055	74.554	76.565	78.894	80.445	81.518	82.332
85	26.781	26.745	26.757	26.810	26.877	26.979	27.080	26.686	26.182	25.965
90	4.780	4.780	4.780	4.780	4.780	4.780	4.780	4.780	4.780	4.780

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	1446.453	1446.453	1446.453	1446.453	1446.453	1446.453	1446.453	1446.453	1446.453	1446.453
5	1440.237	1440.491	1440.569	1440.596	1440.521	1440.272	1439.759	1439.207	1438.737	1438.312
10	1419.529	1420.013	1420.228	1420.241	1420.032	1419.334	1418.214	1417.317	1416.785	1416.203
15	1384.807	1385.389	1385.667	1385.458	1384.734	1383.447	1381.568	1380.357	1379.601	1378.859
20	1336.637	1337.409	1337.525	1336.938	1335.555	1333.463	1330.844	1328.964	1328.171	1327.300
25	1275.885	1276.617	1276.521	1275.347	1273.393	1270.395	1266.989	1264.728	1263.566	1262.867
30	1203.080	1203.967	1203.620	1201.894	1199.255	1195.616	1191.636	1188.766	1187.486	1186.742
35	1119.229	1120.176	1119.739	1117.537	1114.499	1110.132	1105.546	1102.498	1101.006	1100.289
40	1025.423	1026.442	1025.795	1023.443	1019.888	1015.135	1009.973	1006.476	1005.077	1004.337
45	922.490	923.597	922.816	920.133	916.070	910.511	904.635	900.599	898.870	898.389
50	811.106	812.102	811.065	807.643	802.329	795.448	788.316	783.130	780.834	780.821
55	692.041	692.632	690.643	685.493	678.324	669.714	660.596	654.422	652.117	652.333
60	566.336	565.801	561.741	554.512	545.553	534.683	524.538	518.052	515.595	516.207
65	435.163	432.672	426.472	417.784	406.462	394.828	384.889	378.556	376.283	377.074
70	302.258	298.529	291.963	282.468	271.745	262.140	254.337	249.655	248.020	248.693
75	178.439	176.461	172.221	165.347	158.840	153.684	149.800	147.532	146.791	147.145
80	83.759	84.644	82.957	80.656	78.748	77.141	75.787	75.073	74.886	75.037
85	26.889	27.797	28.080	28.239	28.346	28.484	28.509	28.530	28.591	28.630
90	4.780	4.780	4.780	4.780	4.780	4.780	4.780	4.780	4.780	4.780

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	1446.453	1446.453	1446.453	1446.453	1446.453	1446.453	1446.453	1446.453	1446.453	1446.453
5	1437.995	1437.947	1438.098	1438.301	1438.580	1438.700	1438.694	1438.490	1438.171	1437.699
10	1415.769	1415.806	1416.191	1416.577	1416.919	1417.017	1416.932	1416.531	1415.877	1414.907
15	1378.420	1378.697	1379.555	1380.310	1381.186	1381.452	1381.294	1380.708	1379.619	1378.091
20	1327.060	1327.833	1329.333	1330.475	1331.613	1332.418	1332.339	1331.623	1330.167	1327.825
25	1262.721	1264.224	1265.751	1267.693	1269.491	1270.540	1270.833	1269.837	1268.000	1265.077
30	1187.211	1188.533	1190.720	1193.455	1195.807	1196.957	1197.380	1196.351	1194.087	1190.508
35	1101.003	1102.569	1105.657	1108.382	1110.917	1112.658	1113.110	1111.961	1109.235	1105.187

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CANDELA TABULATION - (Cont.)

40	1004.931	1007.295	1010.629	1013.783	1016.858	1018.676	1019.068	1017.744	1014.672	1010.279
45	899.541	902.745	906.431	910.435	913.521	915.703	916.198	914.673	911.228	906.352
50	783.134	787.586	792.750	797.784	801.971	804.354	805.041	803.372	799.534	794.212
55	655.630	661.761	669.030	675.869	681.756	685.365	686.453	684.752	680.545	674.659
60	520.295	527.501	536.613	545.674	553.428	559.148	561.484	560.133	555.554	548.861
65	381.451	389.130	398.993	410.002	419.557	427.038	431.333	431.041	426.184	418.616
70	252.191	258.349	266.761	276.861	287.140	294.820	300.129	300.986	296.339	288.432
75	148.955	151.969	156.458	162.617	169.527	175.154	178.298	178.697	175.528	170.371
80	75.663	76.691	78.142	80.039	82.399	84.623	84.711	83.534	82.505	81.474
85	28.720	28.702	28.612	28.544	28.491	28.255	27.678	26.534	26.392	26.773
90	4.780	4.780	4.780	4.780	4.780	4.780	4.780	4.780	4.780	4.780

**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	1446.453	1446.453	1446.453	1446.453	1446.453	1446.453	1446.453
5	1437.169	1436.822	1436.238	1435.747	1435.191	1434.767	1434.298
10	1413.767	1412.887	1411.739	1410.729	1409.760	1408.965	1408.357
15	1376.266	1374.696	1372.791	1371.138	1369.696	1368.592	1367.890
20	1325.238	1323.125	1320.646	1318.169	1315.913	1314.515	1313.658
25	1261.716	1258.857	1255.421	1252.431	1249.687	1247.657	1246.688
30	1186.551	1182.867	1178.720	1174.937	1171.419	1169.057	1167.970
35	1100.718	1096.251	1091.188	1086.508	1082.443	1079.663	1078.524
40	1005.432	999.831	993.799	988.667	984.699	981.955	980.825
45	900.985	894.397	888.265	883.068	878.890	875.963	874.698
50	788.031	781.290	774.812	768.782	763.639	759.980	758.327
55	667.883	660.592	652.532	644.742	637.575	632.502	630.552
60	541.275	532.065	522.047	511.938	503.492	498.160	496.346
65	409.448	398.644	387.452	376.806	369.026	364.311	362.770
70	279.190	269.521	259.564	251.505	245.757	242.297	241.174
75	164.748	158.977	153.188	148.729	145.507	143.551	142.963
80	80.134	78.172	76.105	74.514	73.342	72.611	72.457
85	27.193	27.219	27.140	27.079	27.021	26.997	27.028
90	4.780	4.780	4.780	4.780	4.780	4.780	4.780

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	525.27	N.A.	14.20
0-30	1107.29	N.A.	30.00
0-40	1796.38	N.A.	48.60
0-60	3084.53	N.A.	83.50
0-80	3657.09	N.A.	99.00
0-90	3694.66	N.A.	100.00
10-90	3558.08	N.A.	96.30
20-40	1271.11	N.A.	34.40
20-50	1966.00	N.A.	53.20
40-70	1684.88	N.A.	45.60
60-80	572.56	N.A.	15.50
70-80	175.84	N.A.	4.80
80-90	37.57	N.A.	1.00
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	3694.66	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	136.58
10-20	388.69
20-30	582.02
30-40	689.09
40-50	694.90
50-60	593.26
60-70	396.72
70-80	175.84
80-90	37.57
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

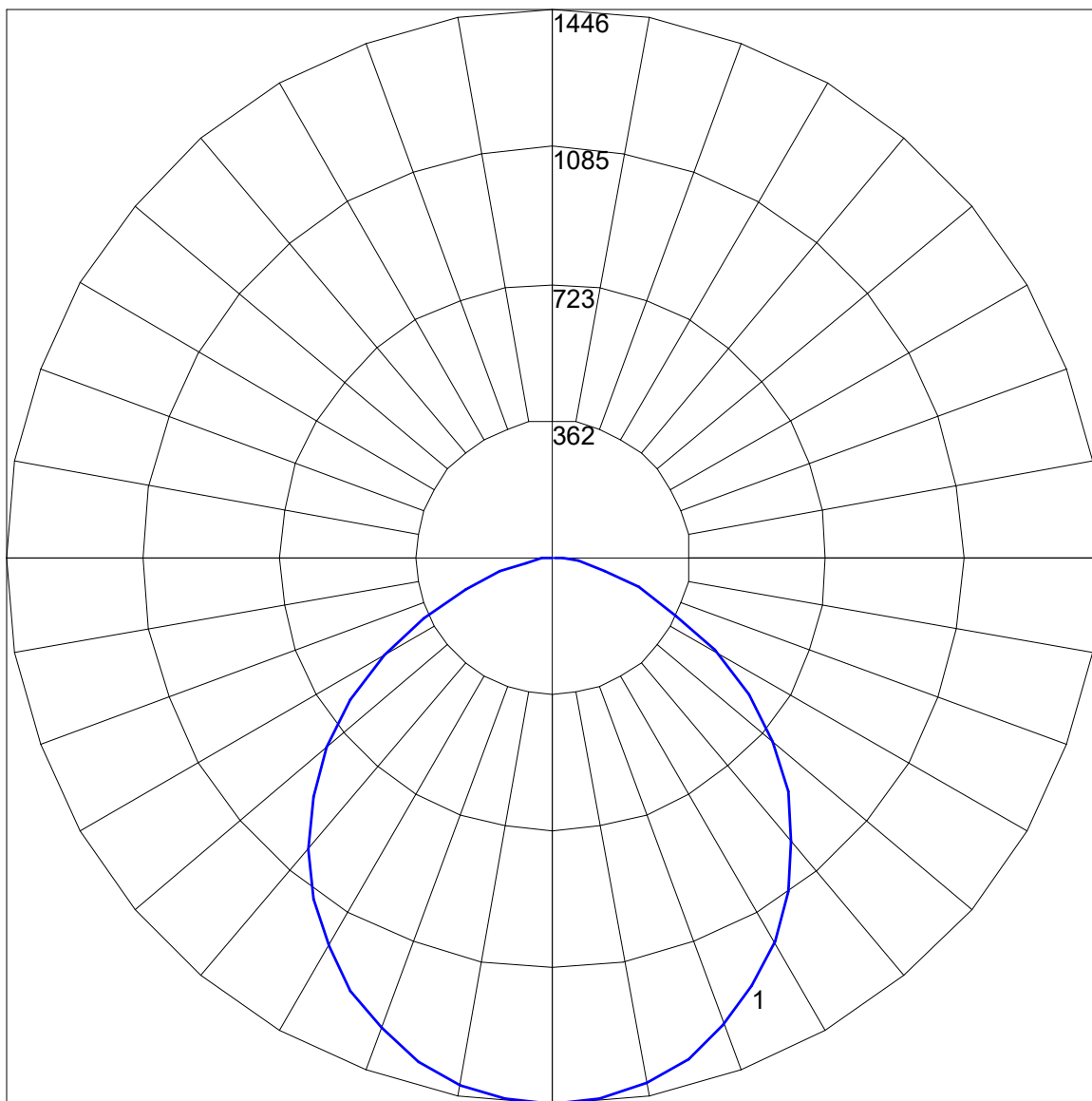
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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

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	110	105	101	98	107	103	99	96	99	96	93	95	92	90	91	89	88	86
2	100	92	86	81	98	91	85	80	87	82	78	84	80	76	81	77	74	72
3	92	82	74	68	89	80	73	67	77	71	66	74	69	65	72	67	64	62
4	84	73	64	58	82	71	63	57	69	62	57	67	61	56	64	59	55	53
5	77	65	56	50	75	64	56	50	62	55	49	60	54	49	58	53	48	46
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	42	40
7	66	53	45	39	65	52	44	39	51	44	38	50	43	38	48	42	38	36
8	62	49	40	35	60	48	40	35	47	39	34	45	39	34	44	38	34	32
9	58	45	37	31	56	44	36	31	43	36	31	42	35	31	41	35	31	29
10	54	41	34	28	53	41	33	28	40	33	28	39	33	28	38	32	28	26

POLAR GRAPH



Maximum Candela = 1446.453 Located At Horizontal Angle = 0, Vertical Angle = 0
1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)