



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : KEL-LED-325-840-35-4-BW.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002  
 [TEST]20200615-3  
 [TESTLAB]Intense Lighting Lab  
 [TESTDATE]2020/06/15  
 [ISSUEDATE] 2020/06/26  
 [MANUFAC]BirchWood  
 [LUMCAT]KEL-LED-325-HLO-35-4-BW  
 [LUMINAIRE]  
 [LAMPCAT]59637  
 [LAMP]3500K 80CRI  
 [BALLASTCAT]Osram 50w  
 [OTHER]DFBW30:70+DF90C  
 [\_OPTICS]BW  
 [\_TRIM]N/A  
 [\_WATTAGE] 35.04  
 [\_VOLTAGE]120  
 [\_CURRENT]880mA  
 [\_WIDTH]47  
 [\_LENGTH]3  
 [\_HEIGHT]0

### CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	3362
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	96
Total Luminaire Watts	35
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)	0.08 m
Luminous Height	0.00 m

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

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	16647	14211	8513
55	15421	13524	8370
65	12386	11355	7886
75	7706	7314	6021
85	3675	3280	2543

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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>0</b>	938.880	938.880	938.880	938.880	938.880	938.880	938.880	938.880	938.880	938.880
<b>5</b>	973.377	971.513	967.476	961.491	954.487	947.102	939.946	934.042	930.234	928.935
<b>10</b>	1056.186	1051.243	1038.943	1019.990	996.227	970.102	944.402	922.851	908.551	903.749
<b>15</b>	1145.449	1137.951	1118.266	1086.922	1045.433	997.266	947.805	904.505	875.205	865.120
<b>20</b>	1211.951	1203.056	1179.281	1139.949	1085.148	1017.756	944.975	878.582	832.604	816.757
<b>25</b>	1247.278	1237.913	1212.264	1168.883	1106.139	1024.689	932.058	844.875	783.714	762.642
<b>30</b>	1250.731	1241.548	1215.981	1171.362	1104.441	1013.806	906.409	803.239	731.122	706.512
<b>35</b>	1221.152	1212.898	1189.298	1146.487	1079.062	983.436	866.983	754.025	676.768	651.024
<b>40</b>	1158.465	1151.535	1131.615	1093.342	1029.163	933.511	813.698	698.334	621.992	597.267
<b>45</b>	1065.016	1059.680	1044.166	1012.449	954.772	863.659	746.969	636.811	566.640	544.613
<b>50</b>	943.953	940.230	929.562	905.138	856.399	774.301	667.640	569.588	509.572	491.186
<b>55</b>	800.305	798.122	791.820	775.018	736.497	667.221	576.908	496.515	448.852	434.375
<b>60</b>	640.813	640.040	637.696	627.556	599.664	546.031	476.636	417.093	382.277	371.681
<b>65</b>	473.597	473.781	474.565	470.376	452.545	415.849	369.561	330.834	308.540	301.541
<b>70</b>	313.215	313.704	315.495	314.917	305.664	284.851	259.352	238.824	226.964	223.279
<b>75</b>	180.459	180.581	181.580	181.233	176.467	166.097	154.549	146.194	142.010	140.997
<b>80</b>	86.438	86.317	86.421	85.745	83.001	77.976	72.695	69.030	67.319	67.119
<b>85</b>	28.977	28.770	28.540	27.977	26.775	24.950	23.004	21.460	20.429	20.057
<b>90</b>	4.400	4.400	4.400	4.400	4.400	4.400	4.400	4.400	4.400	4.400

**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>0</b>	938.880	938.880	938.880	938.880	938.880	938.880	938.880	938.880	938.880	938.880
<b>5</b>	930.486	934.580	940.699	947.683	955.169	962.008	967.564	970.960	972.421	971.116
<b>10</b>	909.167	924.044	945.835	971.317	997.366	1020.005	1038.558	1050.205	1054.204	1050.315
<b>15</b>	876.229	906.417	950.066	999.423	1047.269	1087.716	1118.004	1137.167	1143.782	1137.422
<b>20</b>	834.242	881.450	948.267	1021.102	1087.797	1141.734	1179.877	1203.205	1211.042	1203.482
<b>25</b>	785.720	848.428	936.258	1028.998	1109.542	1171.539	1214.052	1239.012	1247.579	1239.651
<b>30</b>	733.321	807.243	911.372	1018.739	1108.960	1174.903	1218.576	1243.411	1252.093	1244.392
<b>35</b>	679.049	758.436	872.716	989.223	1084.081	1150.534	1192.424	1215.320	1223.368	1216.689
<b>40</b>	624.188	702.870	819.668	939.537	1040.136	1097.566	1134.873	1154.436	1161.512	1156.304
<b>45</b>	568.567	640.954	752.767	869.672	959.998	1016.645	1048.112	1063.330	1068.913	1065.672
<b>50</b>	511.056	573.175	673.104	780.110	863.033	914.135	934.439	945.028	949.211	947.788
<b>55</b>	449.928	499.483	581.768	672.927	741.991	780.424	797.732	804.722	807.693	807.908
<b>60</b>	383.102	419.419	480.873	551.311	605.067	633.747	643.915	646.184	647.799	649.846
<b>65</b>	309.123	332.736	373.142	420.835	458.447	476.421	481.093	481.525	482.293	485.094
<b>70</b>	227.607	240.662	262.632	289.681	311.609	321.354	323.174	322.639	323.295	325.709
<b>75</b>	142.795	147.963	157.318	170.136	181.195	186.617	187.873	187.892	188.469	190.355
<b>80</b>	67.958	70.140	74.250	80.178	85.708	88.923	90.253	90.572	91.066	92.228
<b>85</b>	20.552	21.640	23.312	25.454	27.611	29.140	30.001	30.380	30.874	31.352
<b>90</b>	4.400	4.400	4.400	4.400	4.400	4.400	4.400	4.400	4.400	4.400

**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>0</b>	938.880	938.880	938.880	938.880	938.880	938.880	938.880	938.880	938.880	938.880
<b>5</b>	967.952	962.532	956.011	948.989	942.755	937.459	934.091	933.147	934.121	938.289
<b>10</b>	1039.058	1021.196	998.105	972.592	948.084	927.330	913.739	909.546	914.453	929.393
<b>15</b>	1119.053	1088.655	1047.868	1000.097	951.940	909.559	881.170	871.658	882.586	913.138
<b>20</b>	1180.943	1142.464	1088.306	1021.379	949.581	884.166	839.238	823.628	841.385	889.144
<b>25</b>	1215.068	1172.334	1110.139	1029.193	937.304	850.873	790.642	769.869	793.421	856.814
<b>30</b>	1219.665	1175.887	1109.420	1019.174	912.487	809.619	738.152	713.653	741.119	816.190
<b>35</b>	1193.834	1151.891	1085.381	990.117	873.788	760.768	683.786	657.960	686.732	767.224

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**CANDELA TABULATION - (Cont.)**

<b>40</b>	1136.882	1099.853	1036.574	941.274	821.221	705.306	628.850	603.724	631.441	711.340
<b>45</b>	1050.712	1020.102	963.392	872.446	755.215	644.002	573.383	550.853	575.468	649.123
<b>50</b>	937.943	914.872	866.780	784.552	676.704	577.061	516.324	497.412	517.893	581.002
<b>55</b>	802.369	786.917	748.894	678.969	586.909	504.573	455.933	440.978	456.875	507.049
<b>60</b>	649.890	641.703	613.975	559.297	487.756	425.978	390.035	378.943	390.446	427.052
<b>65</b>	487.715	485.616	468.578	430.364	381.647	340.785	317.235	309.645	317.025	340.360
<b>70</b>	329.147	329.949	321.765	299.622	272.040	249.707	236.508	232.059	235.780	247.988
<b>75</b>	192.978	193.708	189.407	178.696	165.794	156.438	151.201	149.256	149.978	153.952
<b>80</b>	93.985	94.025	91.617	86.395	80.382	76.220	73.949	72.951	72.909	74.376
<b>85</b>	32.397	32.333	31.295	29.360	27.042	25.227	23.931	23.243	23.548	24.496
<b>90</b>	4.400	4.400	4.400	4.400	4.400	4.400	4.400	4.400	4.400	4.400

**Vert. Horizontal Angles**  
**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>0</b>	938.880	938.880	938.880	938.880	938.880	938.880	938.880
<b>5</b>	944.291	951.122	958.300	964.838	969.983	972.933	973.600
<b>10</b>	951.279	977.057	1002.763	1025.393	1042.813	1053.411	1056.296
<b>15</b>	956.920	1006.998	1054.126	1093.878	1123.280	1140.613	1145.402
<b>20</b>	956.158	1029.704	1095.452	1147.938	1184.887	1206.174	1211.904
<b>25</b>	944.659	1038.088	1117.299	1177.566	1218.402	1241.341	1247.321
<b>30</b>	920.008	1028.203	1116.280	1180.323	1222.328	1245.309	1250.954
<b>35</b>	881.427	998.686	1091.170	1155.509	1195.700	1216.728	1221.531
<b>40</b>	828.331	949.126	1041.656	1102.521	1138.073	1155.574	1158.947
<b>45</b>	761.288	879.266	967.207	1021.542	1050.555	1063.741	1065.458
<b>50</b>	681.444	789.725	868.749	914.229	935.806	944.250	944.537
<b>55</b>	589.756	682.029	748.665	783.971	798.062	802.092	800.901
<b>60</b>	488.471	559.842	611.369	636.299	643.774	643.889	641.447
<b>65</b>	380.375	428.315	463.403	478.484	480.196	477.320	474.298
<b>70</b>	269.047	295.195	314.734	321.732	320.203	316.686	314.061
<b>75</b>	162.092	173.588	183.018	186.298	185.130	182.987	181.339
<b>80</b>	77.835	82.887	87.358	89.212	88.913	88.053	87.310
<b>85</b>	25.907	27.619	29.096	29.844	29.927	29.817	29.751
<b>90</b>	4.400	4.400	4.400	4.400	4.400	4.400	4.400

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**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	379.55	N.A.	11.30
0-30	858.14	N.A.	25.50
0-40	1474.66	N.A.	43.90
0-60	2725.55	N.A.	81.10
0-80	3323.75	N.A.	98.90
0-90	3361.83	N.A.	100.00
10-90	3269.99	N.A.	97.30
20-40	1095.12	N.A.	32.60
20-50	1756.16	N.A.	52.20
40-70	1661.84	N.A.	49.40
60-80	598.20	N.A.	17.80
70-80	187.24	N.A.	5.60
80-90	38.08	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	3361.83	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	91.85
10-20	287.70
20-30	478.59
30-40	616.53
40-50	661.04
50-60	589.85
60-70	410.96
70-80	187.24
80-90	38.08
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

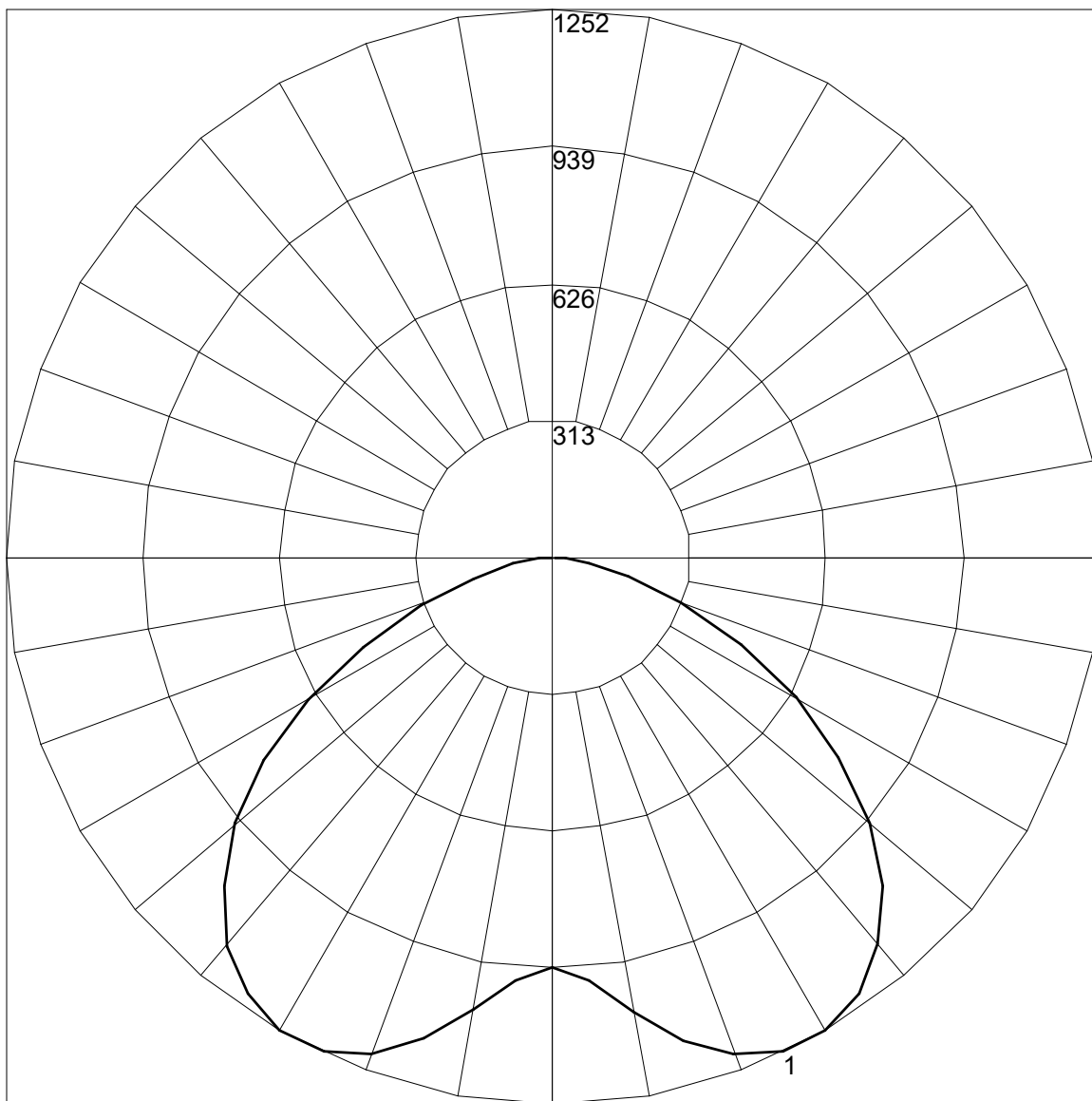
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**COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD**

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	104	100	97	106	102	98	95	98	95	92	94	92	89	90	88	87	84
2	99	91	84	79	97	89	83	78	86	80	76	82	78	74	79	76	73	70
3	90	80	72	65	88	78	71	65	75	69	63	73	67	62	70	65	61	59
4	83	71	62	55	80	69	61	55	67	59	54	64	58	53	62	57	52	50
5	76	63	54	47	74	62	53	47	59	52	46	58	51	46	56	50	45	43
6	70	56	47	41	68	55	47	41	54	46	40	52	45	40	50	44	39	37
7	64	51	42	36	63	50	42	36	48	41	35	47	40	35	46	40	35	33
8	60	46	38	32	58	46	37	32	44	37	31	43	36	31	42	36	31	29
9	56	42	34	28	54	42	34	28	40	33	28	39	33	28	38	32	28	26
10	52	39	31	26	51	38	31	25	37	30	25	36	30	25	35	29	25	23

POLAR GRAPH



Maximum Candela = 1252.093 Located At Horizontal Angle = 180, Vertical Angle = 30  
# 1 - Vertical Plane Through Horizontal Angles (0 - 180)