



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : KEL-LED-325-1000-35-4-AS-ID.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002  
[TEST]20200616-5  
[TESTLAB]Intense Lighting Lab  
[TESTDATE]2020/06/16  
[ISSUEDATE] 2020/06/29  
[MANUFAC]Birchwood  
[LUMCAT]KEL-LED-325-HLO-35-4-AS-ID  
[LUMINAIRE]  
[LAMPCAT]59637  
[LAMP]3500K 80CRI  
[BALLASTCAT]Osram 50W  
[OTHER]DFLB20+DF60C  
[OPTICS]AS-ID  
[WATTAGE]35.02  
[VOLTAGE]120  
[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	4082
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	117
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)	0.08 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	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>	4.371	4.371	4.371	4.371	4.371	4.371	4.371	4.371	4.371	4.371
<b>95</b>	21.651	21.552	21.590	21.772	22.486	23.277	22.457	17.483	14.516	14.099
<b>100</b>	63.706	63.950	64.589	65.700	69.432	74.352	73.853	55.475	41.484	40.281
<b>105</b>	134.527	135.343	137.252	140.768	149.437	162.346	163.775	125.787	78.854	75.894
<b>110</b>	238.195	240.009	244.887	252.913	267.539	288.860	290.095	229.776	116.961	113.253
<b>115</b>	372.249	375.530	384.964	400.673	420.369	444.941	441.285	357.156	164.880	171.504
<b>120</b>	531.743	536.517	551.126	576.646	604.574	628.560	613.929	502.125	253.787	277.450
<b>125</b>	713.225	719.316	738.992	775.570	813.662	839.612	808.387	668.024	429.834	420.313
<b>130</b>	913.643	921.629	948.282	992.547	1036.793	1067.515	1022.657	864.222	639.799	564.764
<b>135</b>	1133.122	1141.971	1173.288	1216.117	1265.543	1296.889	1246.517	1077.887	848.123	701.063
<b>140</b>	1361.146	1368.831	1398.900	1441.381	1492.565	1514.352	1455.670	1288.442	1054.260	849.227
<b>145</b>	1587.395	1594.099	1620.122	1661.575	1698.110	1699.521	1633.685	1482.311	1259.387	1025.823
<b>150</b>	1801.808	1806.733	1824.126	1849.240	1861.186	1844.794	1779.057	1647.320	1451.890	1221.040
<b>155</b>	1974.180	1975.163	1980.410	1986.965	1980.264	1951.501	1887.875	1781.391	1617.493	1414.392
<b>160</b>	2086.314	2084.274	2080.685	2074.753	2056.668	2022.192	1963.714	1874.164	1746.362	1587.953
<b>165</b>	2138.936	2135.633	2127.596	2115.059	2092.235	2057.136	2006.190	1934.198	1839.018	1726.331
<b>170</b>	2133.863	2130.606	2121.709	2107.107	2085.313	2054.549	2012.980	1959.787	1896.689	1825.219
<b>175</b>	2061.920	2059.578	2053.320	2042.070	2026.266	2006.166	1980.655	1951.741	1919.343	1884.249
<b>180</b>	1913.000	1913.000	1913.000	1913.000	1913.000	1913.000	1913.000	1913.000	1913.000	1913.000

**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>	4.371	4.371	4.371	4.371	4.371	4.371	4.371	4.371	4.371	4.371
<b>95</b>	15.831	18.101	18.520	20.352	22.759	23.500	23.944	24.281	24.483	24.388
<b>100</b>	48.932	57.012	55.587	61.352	69.494	70.764	71.396	71.902	72.203	71.901
<b>105</b>	106.647	123.748	116.770	130.046	147.797	149.202	149.559	149.863	150.046	149.466
<b>110</b>	188.423	209.856	197.527	223.814	256.900	259.799	260.123	259.569	259.533	258.647
<b>115</b>	287.835	299.675	288.816	329.342	381.062	390.591	394.155	393.001	392.471	391.290
<b>120</b>	395.149	390.231	390.742	441.325	506.162	526.630	539.143	537.399	535.806	534.752
<b>125</b>	505.011	492.408	511.338	557.551	630.009	661.490	691.897	691.237	688.516	688.192
<b>130</b>	614.838	609.523	651.913	672.367	750.433	790.360	843.406	854.736	852.414	851.795
<b>135</b>	720.457	749.959	799.805	779.951	855.469	904.639	972.302	1011.980	1015.909	1010.629
<b>140</b>	822.738	903.553	940.943	880.824	932.171	994.430	1052.810	1115.991	1136.295	1116.962
<b>145</b>	932.692	1051.675	1073.460	983.257	983.217	1048.332	1096.493	1142.593	1165.622	1143.170
<b>150</b>	1079.574	1186.124	1197.622	1099.926	1045.319	1062.002	1108.668	1141.773	1154.802	1145.818
<b>155</b>	1256.934	1303.054	1311.798	1235.955	1147.607	1107.199	1104.928	1117.242	1125.640	1124.747
<b>160</b>	1440.799	1382.561	1396.788	1362.331	1295.296	1231.045	1189.854	1171.969	1168.621	1181.843
<b>165</b>	1609.406	1508.181	1448.605	1435.135	1420.639	1390.766	1359.634	1338.810	1332.311	1352.302
<b>170</b>	1748.150	1671.159	1599.284	1540.926	1499.990	1476.169	1464.772	1460.063	1459.216	1477.250
<b>175</b>	1847.021	1809.603	1773.472	1739.704	1709.291	1684.585	1666.487	1655.663	1652.779	1679.775
<b>180</b>	1913.000	1913.000	1913.000	1913.000	1913.000	1913.000	1913.000	1913.000	1913.000	1913.000

**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>	4.371	4.371	4.371	4.371	4.371	4.371	4.371	4.371	4.371	4.371
<b>95</b>	24.363	24.308	23.921	21.675	20.158	20.013	17.738	15.998	16.622	20.100
<b>100</b>	71.935	72.041	71.369	63.344	58.235	60.350	52.187	43.563	45.155	60.554
<b>105</b>	149.907	150.678	150.233	132.539	120.359	128.919	111.513	80.050	83.692	134.780
<b>110</b>	260.167	261.436	259.720	226.888	201.689	216.443	194.685	117.486	122.484	243.253
<b>115</b>	393.970	391.854	383.440	332.561	293.257	306.533	294.951	177.058	171.484	374.446
<b>120</b>	538.344	526.994	507.381	444.516	396.153	397.530	402.815	286.507	265.353	523.059
<b>125</b>	690.467	660.916	630.148	561.091	519.162	499.981	513.168	431.872	449.043	693.976

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**CANDELA TABULATION - (Cont.)**

<b>130</b>	842.772	788.395	750.478	676.648	662.125	617.968	623.192	576.749	663.946	895.696
<b>135</b>	972.953	902.764	856.511	785.361	811.360	760.345	728.925	714.212	877.523	1114.107
<b>140</b>	1053.183	995.364	935.513	887.835	953.547	917.530	831.732	866.988	1088.243	1327.471
<b>145</b>	1099.560	1054.902	989.993	991.873	1086.872	1068.737	943.945	1049.929	1297.405	1521.777
<b>150</b>	1116.086	1071.527	1057.389	1112.667	1212.762	1206.885	1097.454	1250.801	1491.345	1686.603
<b>155</b>	1115.196	1118.717	1158.867	1248.737	1327.836	1322.181	1281.612	1447.892	1655.098	1814.805
<b>160</b>	1201.707	1243.955	1309.034	1377.972	1413.478	1404.676	1469.148	1621.292	1781.892	1907.402
<b>165</b>	1374.366	1405.838	1436.259	1454.302	1471.226	1534.340	1640.136	1758.339	1871.293	1964.624
<b>170</b>	1483.657	1496.048	1521.191	1564.638	1624.584	1698.339	1777.634	1854.603	1925.366	1987.438
<b>175</b>	1691.146	1709.472	1734.229	1765.369	1798.726	1835.383	1873.084	1909.994	1944.432	1976.230
<b>180</b>	1913.000	1913.000	1913.000	1913.000	1913.000	1913.000	1913.000	1913.000	1913.000	1913.000

**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>90</b>	4.371	4.371	4.371	4.371	4.371	4.371	4.371
<b>95</b>	25.776	26.440	25.287	23.927	22.985	22.111	21.651
<b>100</b>	79.859	79.885	74.460	69.467	66.898	64.691	63.706
<b>105</b>	173.394	170.631	157.010	146.206	140.457	136.120	134.527
<b>110</b>	303.657	300.011	278.179	260.599	249.082	240.893	238.195
<b>115</b>	458.057	458.161	433.595	410.165	390.121	376.694	372.249
<b>120</b>	633.855	643.578	619.633	587.307	557.141	538.096	531.743
<b>125</b>	831.912	855.724	829.763	786.997	745.925	721.194	713.225
<b>130</b>	1049.718	1084.173	1053.951	1003.909	955.581	923.839	913.643
<b>135</b>	1275.935	1313.708	1282.769	1228.734	1179.308	1145.011	1133.122
<b>140</b>	1485.840	1531.633	1509.233	1453.868	1405.346	1372.976	1361.146
<b>145</b>	1664.127	1717.503	1712.576	1672.579	1628.514	1598.723	1587.395
<b>150</b>	1808.198	1862.157	1874.355	1858.715	1832.493	1810.730	1801.808
<b>155</b>	1917.000	1970.757	1991.409	1995.200	1987.971	1979.044	1974.180
<b>160</b>	1991.783	2043.143	2066.408	2081.560	2086.968	2087.598	2086.314
<b>165</b>	2033.171	2079.074	2099.761	2120.001	2132.500	2138.198	2138.936
<b>170</b>	2038.078	2076.306	2090.212	2110.517	2124.329	2131.991	2133.863
<b>175</b>	2003.973	2026.127	2028.033	2042.333	2053.029	2059.893	2061.920
<b>180</b>	1913.000	1913.000	1913.000	1913.000	1913.000	1913.000	1913.000

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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	179.37	N.A.	4.40
90-120	533.69	N.A.	13.10
90-130	1118.98	N.A.	27.40
90-150	2700.47	N.A.	66.20
90-180	4082.17	N.A.	100.00
110-180	3902.8	N.A.	95.60
0-180	4082.17	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	30.18
100-110	149.18
110-120	354.32
120-130	585.29
130-140	766.83
140-150	814.66
150-160	713.09
160-170	491.23
170-180	177.38

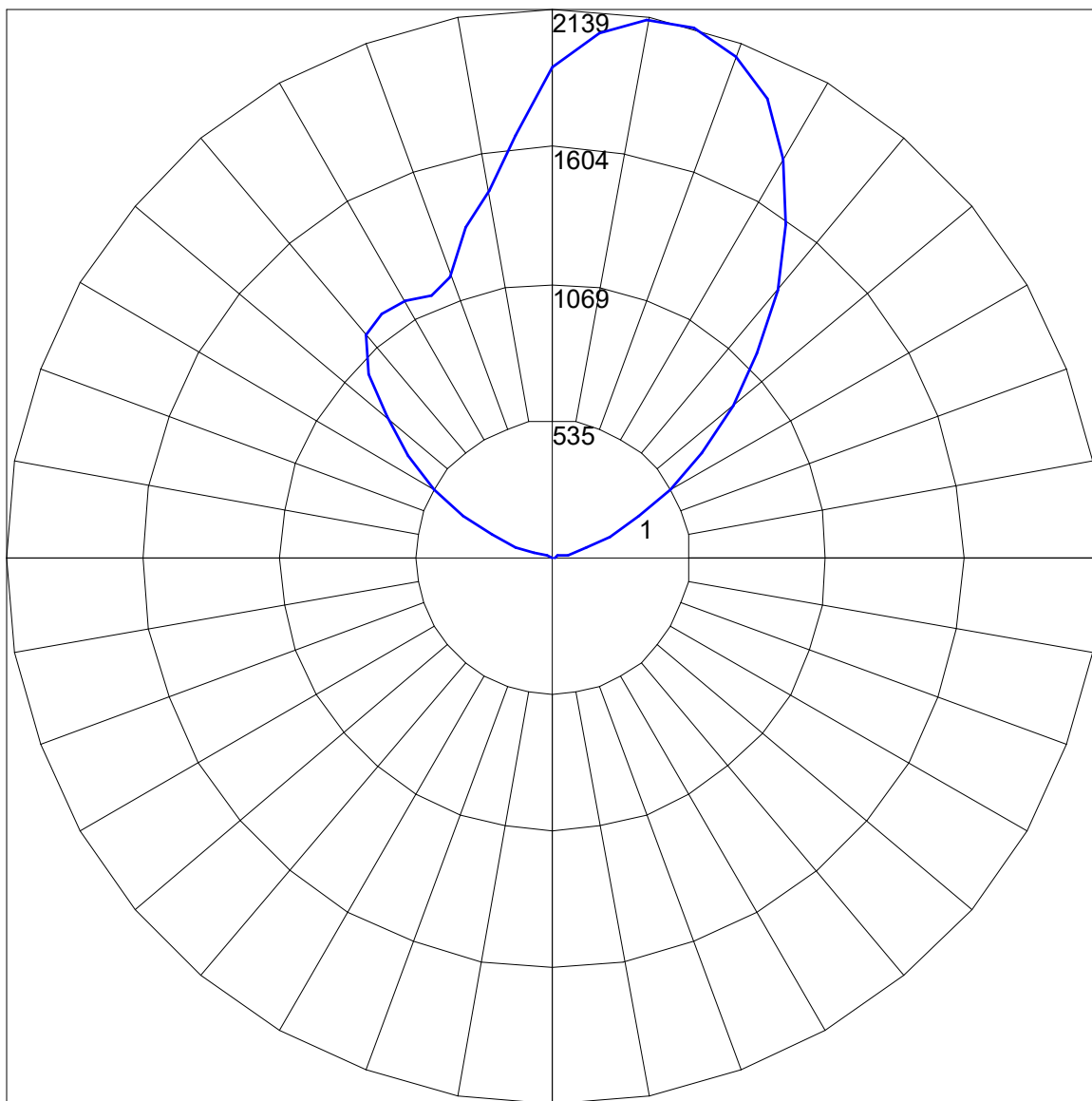
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**COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD**

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 = 2138.936 Located At Horizontal Angle = 0, Vertical Angle = 165  
# 1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)