



IES INDOOR REPORT

PHOTOMETRIC FILENAME : KEL-LED-225-1025-35-4-E70.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TEST]20200422-2
 [TESTLAB]Intense Lighting Lab
 [TESTDATE]2020/04/22
 [ISSUE DATE] 2020/06/29
 [MANUFAC]Birchwood
 [LUMCAT]KEL-LED-225-HLO-35-4-E70
 [LUMINAIRE]KEL-LED-225-HLO-35-4-E7
 [LAMPCAT]59637
 [LAMP]3500K 80CRI
 [BALLASTCAT]Power Supply
 [OPTICS]DF90C-DFEP70:02

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	4099
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	117
Total Luminaire Watts	35
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.22
Spacing Criterion (90-270)	1.14
Spacing Criterion (Diagonal)	1.20
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	25544	21680	19910
55	20082	17030	17320
65	14068	13791	16414
75	8689	9424	12698
85	5081	5217	5591

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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	1929.838	1929.838	1929.838	1929.838	1929.838	1929.838	1929.838	1929.838	1929.838	1929.838
5	1928.167	1926.149	1925.203	1924.435	1923.776	1923.280	1922.746	1922.199	1921.446	1920.752
10	1898.963	1897.305	1895.950	1894.612	1893.092	1891.599	1890.027	1888.342	1886.659	1884.997
15	1848.998	1847.199	1845.330	1842.935	1839.835	1836.718	1833.395	1830.134	1826.823	1824.114
20	1778.479	1776.572	1773.471	1768.888	1763.209	1757.076	1750.788	1744.787	1739.412	1735.137
25	1687.398	1685.292	1679.725	1671.267	1660.728	1649.192	1638.038	1627.564	1618.937	1612.688
30	1574.876	1572.290	1562.545	1546.766	1527.544	1507.531	1488.680	1472.418	1459.664	1450.972
35	1439.390	1435.778	1418.590	1391.222	1359.523	1328.317	1301.423	1279.859	1263.907	1253.632
40	1279.591	1274.591	1246.692	1204.699	1159.973	1120.704	1090.178	1068.167	1052.863	1043.000
45	1096.682	1090.313	1052.241	999.398	949.659	911.872	886.906	871.438	861.544	854.805
50	897.392	890.406	849.525	798.529	757.167	731.780	719.707	715.085	713.097	710.390
55	699.355	693.006	658.706	620.776	596.998	589.118	591.686	597.783	602.583	603.171
60	518.466	514.131	492.223	471.222	463.766	471.396	485.962	500.551	510.351	512.921
65	360.971	358.774	348.408	341.271	345.593	362.170	384.312	403.993	417.247	421.186
70	232.457	231.588	227.556	227.261	235.835	253.961	276.954	297.561	311.763	316.551
75	136.547	136.215	134.788	135.714	141.875	154.298	170.582	186.186	196.315	199.545
80	69.907	69.759	69.140	69.645	72.503	77.837	84.765	91.875	95.610	95.345
85	26.885	26.851	26.569	26.545	27.071	28.141	29.392	30.379	30.694	29.584
90	5.015	5.015	5.015	5.015	5.015	5.015	5.015	5.015	5.015	5.015

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	1929.838	1929.838	1929.838	1929.838	1929.838	1929.838	1929.838	1929.838	1929.838	1929.838
5	1919.899	1918.136	1917.246	1916.356	1915.597	1914.944	1914.044	1913.206	1912.192	1911.752
10	1883.554	1881.367	1880.221	1879.513	1878.874	1878.249	1877.618	1876.785	1875.789	1875.360
15	1821.986	1819.532	1818.777	1818.691	1818.934	1819.365	1819.838	1819.835	1819.173	1818.635
20	1732.355	1730.088	1730.257	1732.114	1734.869	1737.658	1740.076	1741.714	1741.858	1741.161
25	1609.016	1607.649	1610.076	1615.604	1622.348	1630.197	1637.418	1642.396	1644.217	1643.033
30	1446.725	1446.603	1452.492	1462.909	1476.959	1493.058	1508.490	1519.778	1524.755	1522.535
35	1248.818	1249.478	1258.101	1273.592	1295.616	1322.525	1350.135	1371.983	1382.041	1378.017
40	1038.017	1038.254	1046.187	1062.195	1088.110	1124.220	1165.258	1200.583	1217.844	1211.069
45	850.025	847.807	850.534	860.282	882.131	918.502	965.631	1010.795	1034.873	1025.663
50	705.879	700.001	695.014	694.808	705.169	730.789	771.565	815.933	841.780	832.306
55	598.544	589.023	577.132	566.744	563.083	572.948	597.866	630.812	652.344	644.707
60	507.737	495.265	478.141	458.992	443.922	439.105	448.821	467.983	482.119	477.240
65	415.201	400.415	379.450	355.382	333.945	321.390	321.281	329.281	336.658	334.201
70	309.876	294.066	273.124	250.551	229.888	216.668	212.626	214.798	217.871	216.837
75	193.976	182.298	168.014	152.944	139.257	130.177	126.434	126.468	127.545	127.235
80	92.942	88.793	83.291	76.673	70.453	66.197	64.293	64.145	64.541	64.457
85	29.052	28.719	28.118	26.817	25.466	24.503	24.122	24.206	24.387	24.376
90	5.015	5.015	5.015	5.015	5.015	5.015	5.015	5.015	5.015	5.015

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	1929.838	1929.838	1929.838	1929.838	1929.838	1929.838	1929.838	1929.838	1929.838	1929.838
5	1912.112	1912.633	1912.987	1913.709	1914.382	1915.052	1915.826	1916.375	1917.006	1917.617
10	1875.791	1875.640	1875.937	1876.308	1876.969	1877.809	1878.857	1879.854	1881.258	1882.796
15	1818.271	1817.184	1816.242	1815.680	1815.613	1815.989	1816.892	1818.394	1820.489	1823.241
20	1739.448	1736.522	1733.367	1730.232	1727.854	1726.904	1727.079	1728.582	1731.837	1736.237
25	1638.718	1631.730	1623.432	1615.477	1608.741	1604.395	1602.978	1604.427	1608.771	1615.801
30	1513.461	1498.867	1481.751	1465.010	1451.317	1442.042	1438.141	1439.136	1444.898	1455.152
35	1360.550	1333.744	1304.072	1276.875	1255.795	1242.205	1236.334	1236.832	1243.328	1255.826

IES INDOOR REPORT
PHOTOMETRIC FILENAME : KEL-LED-225-1025-35-4-E70.IES

CANDELA TABULATION - (Cont.)

40	1182.274	1140.889	1099.138	1065.357	1042.362	1029.011	1023.776	1024.783	1030.821	1042.307
45	987.679	937.887	893.377	862.511	845.830	839.230	838.425	841.108	845.605	852.883
50	793.744	747.957	713.077	694.307	689.288	692.596	697.969	702.936	705.816	707.635
55	614.745	583.852	565.322	562.115	569.503	581.556	592.840	599.984	601.807	598.964
60	458.708	443.197	440.538	450.487	468.315	487.250	502.713	511.739	512.988	506.631
65	325.284	320.874	327.174	344.904	368.154	391.485	409.902	420.335	421.006	411.540
70	213.745	214.404	223.088	240.775	262.760	285.102	303.764	314.628	314.577	303.591
75	126.506	128.282	134.792	146.585	161.328	176.030	188.851	196.855	196.997	189.395
80	64.352	65.433	68.645	74.120	80.803	86.519	91.045	93.898	95.089	93.291
85	24.353	24.621	25.437	26.749	28.223	29.002	29.320	29.634	30.616	30.834
90	5.015	5.015	5.015	5.015	5.015	5.015	5.015	5.015	5.015	5.015

**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	1929.838	1929.838	1929.838	1929.838	1929.838	1929.838	1929.838
5	1918.139	1918.434	1919.097	1919.471	1919.391	1918.919	1918.230
10	1884.462	1886.056	1887.724	1889.032	1889.907	1889.982	1889.487
15	1826.424	1829.791	1833.412	1836.413	1838.697	1839.806	1839.764
20	1741.786	1748.231	1754.975	1760.913	1765.722	1768.837	1769.656
25	1625.421	1636.712	1649.000	1660.405	1670.070	1676.679	1679.104
30	1469.898	1488.625	1509.270	1530.199	1548.493	1561.485	1567.157
35	1274.866	1300.314	1330.837	1364.358	1396.348	1420.714	1432.341
40	1060.542	1086.945	1122.333	1166.460	1213.483	1252.845	1273.195
45	864.116	882.534	912.482	956.407	1010.744	1062.110	1091.286
50	709.284	714.806	730.607	762.281	809.664	860.935	892.971
55	591.821	584.648	584.471	597.740	628.682	668.888	696.096
60	492.548	475.835	462.271	460.206	474.334	498.532	516.261
65	393.363	371.029	349.983	338.375	339.951	350.493	359.497
70	285.470	262.652	241.570	227.938	224.230	227.593	231.632
75	176.231	160.034	145.778	136.718	133.556	134.419	136.087
80	87.243	80.273	74.319	70.216	68.658	68.949	69.647
85	29.995	28.791	27.567	26.678	26.351	26.504	26.752
90	5.015	5.015	5.015	5.015	5.015	5.015	5.015

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	696.37	N.A.	17.00
0-30	1446.69	N.A.	35.30
0-40	2267.23	N.A.	55.30
0-60	3529.2	N.A.	86.10
0-80	4061.72	N.A.	99.10
0-90	4099.14	N.A.	100.00
10-90	3917.14	N.A.	95.60
20-40	1570.86	N.A.	38.30
20-50	2287.44	N.A.	55.80
40-70	1624.71	N.A.	39.60
60-80	532.52	N.A.	13.00
70-80	169.78	N.A.	4.10
80-90	37.42	N.A.	0.90
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	4099.14	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	182.00
10-20	514.37
20-30	750.33
30-40	820.54
40-50	716.58
50-60	545.39
60-70	362.74
70-80	169.78
80-90	37.42
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

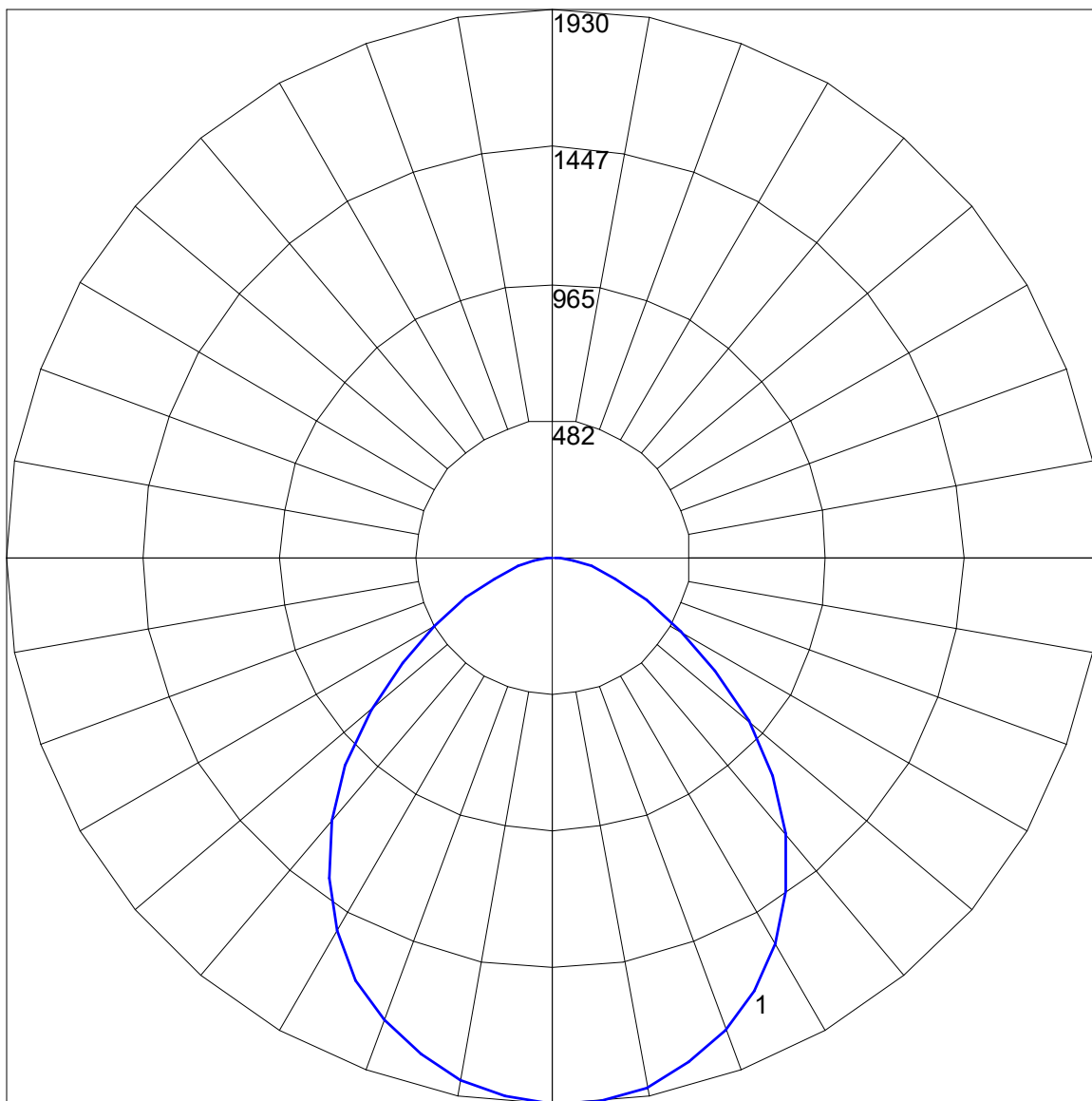
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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

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	106	102	99	108	104	100	97	100	97	94	96	93	91	92	90	89	87
2	101	94	88	83	99	92	87	82	89	84	80	85	82	78	83	79	76	74
3	93	84	76	71	91	82	75	70	79	73	69	77	72	68	74	70	66	64
4	86	75	67	61	84	74	66	61	71	65	60	69	64	59	67	62	58	56
5	80	68	60	53	78	67	59	53	65	58	53	63	57	52	61	56	51	50
6	74	62	53	47	72	61	53	47	59	52	47	57	51	46	56	50	46	44
7	69	56	48	42	67	55	48	42	54	47	42	53	46	42	51	46	41	39
8	64	52	44	38	63	51	43	38	50	43	38	48	42	38	47	42	37	36
9	60	48	40	35	59	47	40	35	46	39	34	45	39	34	44	38	34	32
10	57	44	37	32	55	44	36	32	43	36	31	42	36	31	41	35	31	30

POLAR GRAPH



Maximum Candela = 1929.838 Located At Horizontal Angle = 0, Vertical Angle = 0
1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)