



IES INDOOR REPORT

PHOTOMETRIC FILENAME : KEL-LED-225-1050-35-4-AS.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TEST]20200420-1
 [TESTLAB]Intense Lighting Lab
 [TESTDATE]2020/04/20
 [ISSUE DATE] 2020/06/29
 [MANUFAC]Birchwood
 [LUMCAT]KEL-LED-225-HL0-35-4-AS
 [LUMINAIRE]KEL-LED-225-HL0-35-4-AS
 [LAMPCAT]59637
 [LAMP]3500K 80CRI
 [BALLASTCAT]Power Supply
 [OTHER]
 [OPTICS]DF90C/DFLB20
 [TRIM]
 [WATTAGE]
 [VOLTAGE]35
 [CURRENT]1.120
 [WIDTH]47
 [LENGTH]2
 [HEIGHT]0

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	4224
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	121
Total Luminaire Watts	35
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.08
Spacing Criterion (90-270)	1.20
Spacing Criterion (Diagonal)	1.30
Basic Luminous Shape	Rectangular
Luminous Length (0-180)	1.19 m
Luminous Width (90-270)	0.05 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	25453	22364	22271
55	23384	21016	16493
65	18675	17341	9820
75	11893	11068	6690
85	6721	5844	3755

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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	1780.060	1780.060	1780.060	1780.060	1780.060	1780.060	1780.060	1780.060	1780.060	1780.060
5	1734.552	1733.867	1735.366	1738.377	1742.524	1747.578	1753.289	1759.065	1764.782	1770.290
10	1642.318	1643.172	1649.851	1660.851	1674.574	1689.413	1704.040	1717.858	1730.484	1741.717
15	1489.396	1492.692	1507.384	1531.490	1561.797	1595.130	1626.801	1653.807	1676.095	1694.595
20	1336.812	1339.223	1353.857	1384.820	1429.814	1477.415	1520.831	1563.180	1599.742	1628.699
25	1278.294	1272.967	1262.859	1263.850	1296.272	1358.267	1410.276	1444.940	1495.105	1542.897
30	1299.152	1290.030	1258.684	1212.191	1191.491	1232.977	1300.514	1320.077	1356.275	1434.672
35	1269.375	1263.615	1244.083	1198.148	1126.720	1116.715	1181.628	1196.052	1207.383	1299.459
40	1197.718	1192.718	1176.118	1147.692	1077.367	1013.155	1052.471	1059.264	1075.081	1135.932
45	1092.782	1090.278	1077.787	1055.418	1006.679	913.640	915.205	908.954	948.596	956.161
50	962.015	961.099	954.040	935.916	903.673	808.014	771.762	759.840	815.353	768.080
55	814.346	814.222	810.658	797.390	774.509	689.229	630.917	628.111	673.369	574.381
60	651.853	652.190	651.334	644.490	628.153	557.834	499.117	509.120	527.391	390.974
65	479.205	479.793	480.664	479.319	471.034	418.878	375.350	393.852	383.135	251.971
70	316.497	316.860	317.568	317.985	314.742	282.183	257.335	274.832	249.702	165.389
75	186.887	186.948	186.781	186.144	183.064	164.792	153.273	162.604	141.279	105.132
80	94.871	94.769	94.202	93.085	90.487	80.955	75.632	77.712	66.728	54.840
85	35.566	35.501	35.106	34.317	32.714	29.136	26.913	26.154	22.815	19.872
90	5.404	5.404	5.404	5.404	5.404	5.404	5.404	5.404	5.404	5.404

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	1780.060	1780.060	1780.060	1780.060	1780.060	1780.060	1780.060	1780.060	1780.060	1780.060
5	1775.237	1779.821	1783.696	1786.734	1789.438	1791.269	1792.187	1792.302	1792.894	1792.283
10	1751.813	1760.031	1766.118	1770.133	1773.263	1775.510	1776.842	1777.315	1777.609	1776.888
15	1709.904	1720.762	1727.514	1732.427	1737.339	1741.347	1743.755	1744.889	1745.285	1744.251
20	1649.898	1662.480	1670.458	1677.988	1685.100	1690.440	1692.688	1693.593	1693.635	1692.551
25	1571.832	1586.116	1597.187	1607.628	1615.556	1620.340	1621.561	1621.151	1620.412	1619.654
30	1475.361	1492.704	1508.365	1520.529	1527.903	1529.755	1527.437	1524.025	1521.932	1521.880
35	1359.362	1383.839	1404.215	1416.850	1420.245	1416.184	1409.113	1402.991	1399.672	1400.391
40	1221.105	1260.074	1284.926	1294.966	1291.920	1283.313	1272.094	1263.040	1258.121	1259.863
45	1050.530	1120.534	1149.635	1155.870	1146.187	1132.237	1116.323	1102.595	1096.225	1098.866
50	832.721	962.804	1001.111	1001.398	983.537	963.000	941.418	926.806	920.485	923.036
55	583.007	791.898	844.708	832.971	804.926	778.794	755.494	741.847	735.846	738.247
60	362.146	614.409	679.642	657.202	619.505	590.888	570.639	559.394	554.298	556.310
65	232.654	436.546	506.486	483.217	441.819	415.164	400.644	392.510	388.590	390.050
70	159.521	273.730	336.688	320.866	287.488	266.818	257.775	252.807	250.218	251.152
75	103.423	148.101	192.566	186.070	167.141	154.519	149.621	147.120	145.649	146.218
80	54.489	68.370	90.576	90.054	82.637	77.019	75.032	74.137	73.549	73.817
85	19.969	23.357	29.824	30.830	29.554	28.349	28.007	27.947	27.876	27.964
90	5.404	5.404	5.404	5.404	5.404	5.404	5.404	5.404	5.404	5.404

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	1780.060	1780.060	1780.060	1780.060	1780.060	1780.060	1780.060	1780.060	1780.060	1780.060
5	1791.445	1790.318	1789.014	1786.935	1784.011	1780.409	1776.068	1771.276	1766.502	1761.689
10	1775.664	1774.070	1772.273	1769.675	1765.762	1760.350	1752.667	1743.144	1732.649	1721.239
15	1742.323	1739.447	1736.075	1731.903	1727.188	1721.017	1711.144	1696.736	1679.276	1658.887
20	1690.796	1688.028	1684.166	1677.335	1669.574	1661.845	1650.780	1631.471	1604.346	1570.357
25	1619.151	1617.691	1613.511	1606.666	1596.704	1585.779	1573.152	1547.814	1503.718	1450.630
30	1524.437	1525.799	1525.250	1519.701	1508.711	1493.159	1476.724	1442.805	1368.992	1317.362
35	1404.934	1411.172	1416.560	1415.353	1404.494	1385.714	1362.468	1313.709	1216.059	1188.306

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CANDELA TABULATION - (Cont.)

40	1267.477	1277.224	1287.075	1292.159	1285.422	1263.926	1228.111	1153.322	1075.924	1053.384
45	1110.828	1126.155	1140.457	1151.980	1150.182	1126.633	1067.546	961.925	944.988	911.222
50	935.645	956.157	976.836	995.959	1002.413	972.369	868.977	749.524	806.790	772.721
55	750.092	771.745	797.943	825.716	845.508	808.573	632.274	538.893	658.053	642.956
60	566.254	584.842	612.514	648.119	679.850	638.827	405.935	355.870	504.564	519.214
65	397.487	410.862	435.246	474.348	506.203	465.145	258.045	230.231	356.464	397.579
70	255.891	264.232	282.339	314.454	336.273	299.056	170.148	156.669	228.001	273.617
75	148.789	153.294	164.268	182.901	193.148	163.757	107.101	102.207	129.824	159.838
80	74.906	76.787	81.729	89.349	91.838	75.000	56.020	54.133	62.703	75.905
85	28.216	28.604	29.732	31.199	30.823	25.293	20.672	19.932	22.030	25.571
90	5.404	5.404	5.404	5.404	5.404	5.404	5.404	5.404	5.404	5.404

**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	1780.060	1780.060	1780.060	1780.060	1780.060	1780.060	1780.060
5	1757.109	1751.366	1746.124	1741.442	1737.601	1734.703	1732.987
10	1708.981	1694.704	1679.820	1665.464	1653.057	1644.297	1640.180
15	1634.067	1603.138	1570.018	1538.505	1512.189	1494.065	1486.307
20	1529.818	1486.780	1440.727	1394.234	1359.797	1341.211	1334.497
25	1416.737	1370.648	1307.839	1268.377	1262.910	1271.962	1277.482
30	1306.907	1246.564	1193.555	1204.858	1251.198	1287.102	1298.859
35	1189.234	1123.964	1115.815	1183.130	1237.668	1260.379	1267.885
40	1057.063	1010.174	1053.552	1136.542	1169.861	1188.814	1195.913
45	910.936	899.911	983.000	1046.910	1071.311	1086.944	1090.967
50	758.250	786.258	884.097	928.585	948.613	958.703	960.356
55	614.286	664.484	758.945	791.001	806.355	812.109	812.863
60	486.930	534.516	615.601	639.189	648.086	650.366	650.552
65	370.034	399.924	461.408	475.616	478.298	478.230	478.069
70	256.409	269.058	308.130	315.400	315.683	315.559	315.714
75	153.129	157.471	178.699	184.111	185.312	185.961	186.342
80	75.324	77.491	88.004	91.764	93.183	94.076	94.502
85	26.634	27.990	31.712	33.635	34.567	35.107	35.334
90	5.404	5.404	5.404	5.404	5.404	5.404	5.404

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	634.18	N.A.	15.00
0-30	1318.23	N.A.	31.20
0-40	2129.08	N.A.	50.40
0-60	3595.3	N.A.	85.10
0-80	4185.62	N.A.	99.10
0-90	4224.05	N.A.	100.00
10-90	4056.64	N.A.	96.00
20-40	1494.9	N.A.	35.40
20-50	2302.78	N.A.	54.50
40-70	1879.6	N.A.	44.50
60-80	590.32	N.A.	14.00
70-80	176.93	N.A.	4.20
80-90	38.43	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	4224.05	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	167.41
10-20	466.77
20-30	684.06
30-40	810.85
40-50	807.88
50-60	658.35
60-70	413.38
70-80	176.93
80-90	38.43
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

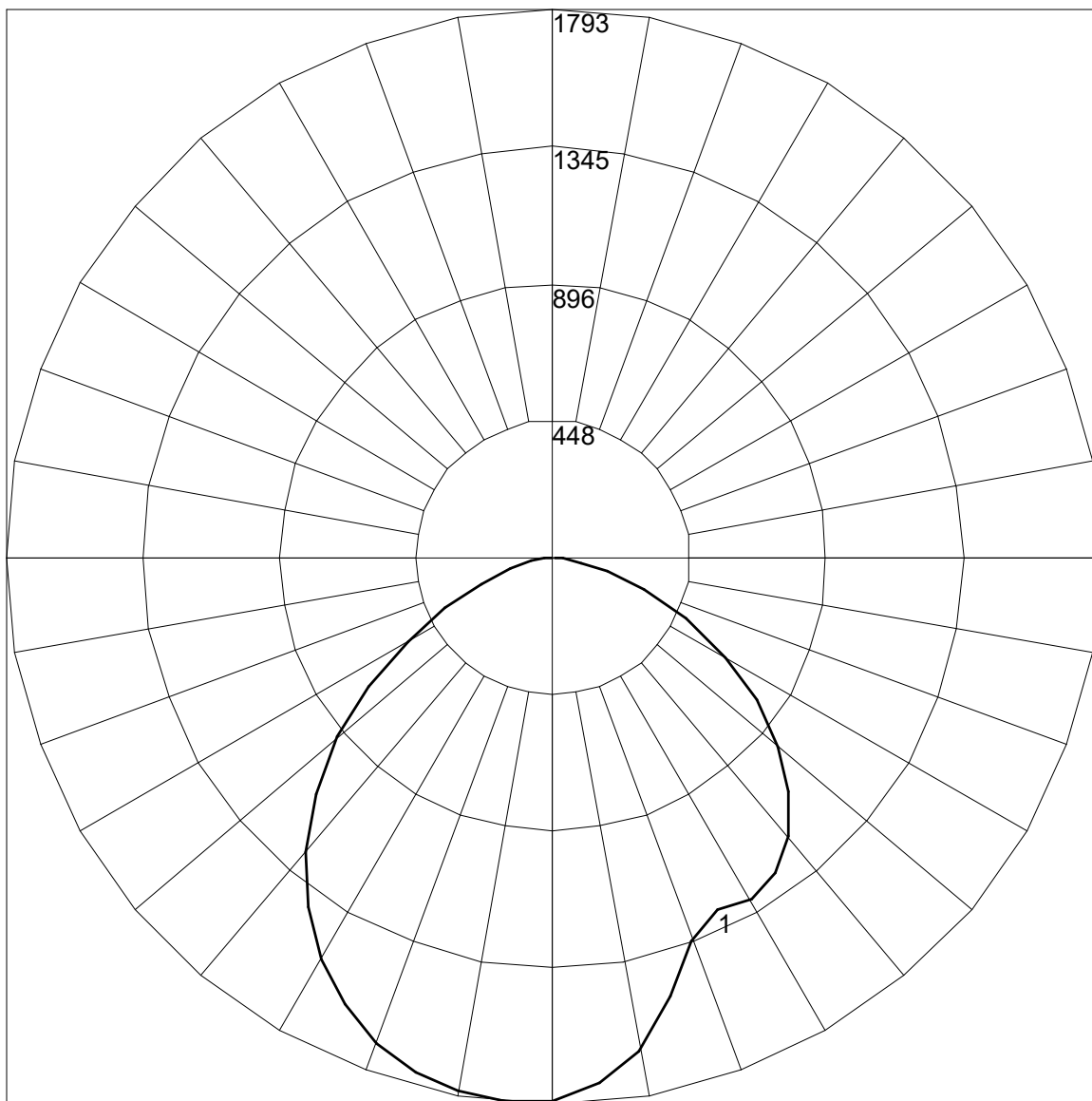
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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

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	98	107	103	100	97	99	96	94	95	93	91	92	90	88	86
2	101	93	87	82	98	91	85	81	88	83	79	85	81	77	82	78	75	73
3	92	82	75	69	90	81	74	68	78	72	67	75	70	66	73	68	65	63
4	85	74	65	59	83	72	64	59	70	63	58	67	62	57	65	60	56	54
5	78	66	57	51	76	65	57	51	63	56	50	61	55	50	59	54	49	47
6	72	60	51	45	71	59	51	45	57	50	44	55	49	44	54	48	44	42
7	67	54	46	40	66	53	45	40	52	45	39	51	44	39	49	43	39	37
8	63	50	41	36	61	49	41	36	48	41	35	46	40	35	45	39	35	33
9	59	46	38	32	57	45	37	32	44	37	32	43	36	32	42	36	32	30
10	55	42	34	29	54	42	34	29	41	34	29	40	33	29	39	33	29	27

POLAR GRAPH



Maximum Candela = 1792.894 Located At Horizontal Angle = 180, Vertical Angle = 5
1 - Vertical Plane Through Horizontal Angles (0 - 180)