



IES INDOOR REPORT
PHOTOMETRIC FILENAME : NLR48HFA40.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] 8,389P2
[TESTLAB] CSA Group
[ISSUEDATE] 10/29/2015 11:51:52 AM
[LUMINAIRE] NLR48HFA40
[_AMBIENT] 24.6 deg C
[_POWERFACTOR] 0.9973
[_ATHD] 5.35%
[_CURRENT] 0.3302
[_VOLTAGE] 120.00
[_STABILIZATION] 23:22.1 Stable
[_POWER VARIATION] 0.36 %
[_LIGHT VARIATION] 0.40 %
[_Lumens] 3,852
[MANUFAC] LAMAR LIGHTING CO., INC.
[_SEARCH_SOURCE] LED
[_SEARCH_APPLICATION] Indoor
[_SEARCH_MOUNTING] Recessed

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	3852
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	97
Total Luminaire Watts	39.62
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.20
Spacing Criterion (90-270)	1.12
Spacing Criterion (Diagonal)	1.26
Basic Luminous Shape	Rectangular
Luminous Length (0-180)	0.16 ft
Luminous Width (90-270)	3.91 ft
Luminous Height	0.00 ft

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LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	22385	21264	20091
55	20363	19332	18298
65	18003	17266	16466
75	14696	14588	14270
85	7878	11164	12747

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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>
0.0	1599.860	1599.860	1599.860	1599.860	1599.860	1599.860	1599.860	1599.860	1599.860	1599.860
2.5	1598.719	1599.606	1599.284	1602.131	1604.828	1608.644	1604.863	1602.246	1600.874	1597.451
5.0	1592.194	1591.883	1591.503	1593.439	1595.906	1598.200	1594.892	1591.122	1588.506	1585.324
7.5	1580.483	1578.950	1578.823	1579.353	1580.886	1581.843	1577.048	1571.768	1568.956	1565.855
10.0	1564.149	1561.336	1560.379	1560.137	1560.241	1559.296	1552.990	1547.192	1543.711	1540.956
12.5	1542.478	1539.688	1536.772	1535.700	1534.835	1532.345	1524.610	1516.807	1513.014	1509.360
15.0	1515.250	1512.150	1508.738	1506.974	1503.032	1498.974	1490.836	1481.453	1476.185	1472.807
17.5	1483.862	1480.554	1475.735	1472.784	1467.597	1460.888	1450.652	1440.393	1434.814	1430.410
20.0	1448.946	1445.303	1438.249	1433.154	1427.794	1419.367	1406.111	1396.589	1388.716	1384.059
22.5	1407.609	1405.385	1398.123	1390.526	1383.967	1373.016	1359.299	1347.772	1339.368	1334.815
25.0	1362.815	1361.143	1353.604	1344.901	1334.977	1323.599	1308.983	1296.291	1288.349	1281.709
27.5	1316.302	1314.343	1305.179	1295.600	1285.963	1270.712	1255.935	1242.286	1233.088	1227.774
30.0	1266.136	1264.511	1254.194	1244.257	1232.062	1216.339	1199.382	1185.446	1177.607	1170.852
32.5	1212.154	1210.702	1200.558	1190.103	1176.939	1160.097	1142.299	1127.591	1120.294	1113.977
35.0	1156.570	1156.754	1143.256	1134.519	1119.648	1102.484	1083.949	1070.300	1062.116	1056.814
37.5	1099.107	1099.061	1087.753	1077.378	1060.295	1042.797	1026.901	1012.918	1005.195	999.938
40.0	1043.292	1041.921	1029.736	1018.751	1002.267	985.103	967.801	954.129	946.637	941.622
42.5	983.097	982.164	969.760	958.902	942.510	926.153	908.954	896.839	888.689	883.283
45.0	920.816	921.623	910.107	899.179	883.110	866.269	849.797	839.618	831.630	826.466
47.5	861.969	859.929	850.143	839.099	824.829	809.221	794.270	783.711	775.757	769.152
50.0	801.417	800.011	791.873	779.423	765.913	751.147	738.582	727.850	719.194	715.182
52.5	741.268	740.334	734.144	721.464	708.761	695.009	682.825	672.601	665.189	661.765
55.0	679.459	679.551	674.376	664.140	652.163	637.984	627.264	618.746	612.521	610.550
57.5	619.552	620.117	615.137	606.043	595.391	583.576	572.153	565.536	559.865	557.006
60.0	559.853	560.510	554.919	549.847	537.548	527.658	519.519	513.041	508.234	505.664
62.5	501.756	502.563	497.744	492.085	481.353	473.341	466.713	462.241	458.241	455.428
65.0	442.621	445.607	440.950	435.843	427.809	421.192	415.233	411.267	409.677	404.824
67.5	385.181	388.455	385.735	379.741	374.588	368.721	364.144	360.721	361.689	355.983
70.0	329.966	331.511	329.286	325.874	322.047	317.816	314.912	311.476	313.701	306.543
72.5	274.866	276.561	275.143	271.535	268.768	267.143	266.025	263.742	265.713	260.388
75.0	221.276	223.132	222.187	220.550	219.420	219.870	218.752	217.622	217.726	214.855
77.5	168.712	171.375	172.424	172.689	174.015	174.234	173.911	174.153	173.807	172.931
80.0	121.670	123.848	124.840	127.145	128.851	131.560	132.759	133.208	133.508	132.989
82.5	77.889	78.904	81.843	86.661	89.301	92.506	94.477	96.575	97.094	97.024
85.0	39.942	41.267	46.005	50.397	54.259	58.950	61.509	63.745	64.276	64.633
87.5	11.331	13.487	18.340	22.709	27.423	31.077	35.169	37.198	38.236	38.743
90.0	0.069	2.086	5.764	10.190	14.202	17.913	21.406	23.389	25.325	25.752

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>
0.0	1599.860	1599.860	1599.860	1599.860	1599.860	1599.860	1599.860	1599.860	1599.860	1599.860
2.5	1596.298	1590.511	1588.033	1580.713	1580.079	1587.261	1592.748	1599.572	1597.900	1597.947
5.0	1582.800	1578.904	1576.437	1569.647	1569.463	1576.045	1583.215	1590.396	1590.523	1590.961
7.5	1563.411	1560.137	1556.990	1551.999	1551.988	1559.676	1567.895	1575.203	1579.169	1578.143
10.0	1536.829	1535.446	1532.587	1528.149	1530.109	1536.703	1547.676	1555.849	1561.717	1560.760
12.5	1505.429	1504.853	1502.547	1498.997	1502.755	1510.259	1522.720	1531.930	1537.821	1537.544
15.0	1469.453	1468.358	1468.173	1465.983	1470.410	1481.257	1492.127	1501.971	1509.833	1509.003
17.5	1427.828	1427.090	1428.093	1427.229	1433.327	1445.073	1458.975	1468.531	1478.190	1477.649
20.0	1382.872	1383.126	1384.659	1384.901	1392.209	1405.177	1419.990	1430.837	1443.597	1441.891
22.5	1332.786	1332.441	1337.040	1337.812	1349.236	1361.685	1377.985	1389.869	1404.520	1401.973
25.0	1281.352	1281.502	1287.139	1290.343	1301.064	1317.259	1332.164	1344.659	1360.475	1359.564
27.5	1227.889	1227.589	1234.206	1238.794	1250.033	1265.721	1285.433	1294.597	1312.545	1311.576
30.0	1171.163	1172.282	1178.725	1184.777	1196.846	1213.814	1232.915	1243.301	1262.240	1262.424

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CANDELA TABULATION - (Cont.)

32.5	1111.948	1115.810	1121.562	1128.720	1141.619	1159.671	1178.956	1189.561	1209.607	1210.483
35.0	1054.128	1058.992	1064.687	1072.698	1086.070	1104.064	1123.752	1133.689	1156.040	1156.974
37.5	997.956	1000.572	1007.996	1017.414	1029.529	1047.142	1064.203	1076.790	1098.992	1097.735
40.0	940.366	942.279	950.856	959.870	972.054	988.503	1006.624	1018.382	1040.215	1039.223
42.5	882.972	884.344	892.782	902.049	912.620	930.038	946.441	959.386	981.530	979.166
45.0	825.301	827.572	834.546	843.215	854.108	871.514	886.661	899.917	922.245	920.113
47.5	770.167	772.322	778.939	788.057	796.230	814.812	827.077	838.938	863.791	861.174
50.0	714.271	717.303	724.715	731.701	739.504	755.343	769.003	778.190	803.515	800.345
52.5	662.468	663.356	669.304	676.889	684.497	697.384	710.076	720.611	742.075	739.700
55.0	606.550	611.195	615.287	621.374	629.155	640.786	651.494	661.096	681.811	679.736
57.5	555.369	558.677	561.455	568.890	575.599	585.294	594.435	601.824	624.959	622.284
60.0	504.038	506.182	509.560	515.900	521.029	530.101	536.856	543.646	566.447	563.749
62.5	454.195	454.206	457.492	461.999	467.036	474.114	480.557	486.275	508.165	506.805
65.0	404.536	404.512	407.267	411.302	414.587	420.409	425.492	428.777	449.526	447.970
67.5	355.061	354.438	355.222	360.064	362.519	366.138	369.954	373.839	392.132	391.049
70.0	306.497	305.978	306.624	308.825	309.517	314.485	315.684	317.321	336.975	336.156
72.5	259.696	258.509	259.016	259.270	259.270	260.676	262.912	262.232	281.218	282.739
75.0	215.167	212.988	212.400	212.135	210.510	210.371	211.121	211.155	229.679	229.541
77.5	171.144	170.925	168.539	166.326	165.554	163.363	162.637	162.268	177.150	177.588
80.0	131.064	130.430	127.779	124.713	121.716	119.652	117.600	115.918	129.508	130.027
82.5	95.952	93.612	91.007	88.183	83.883	80.252	76.806	73.590	85.313	86.915
85.0	63.872	61.002	59.238	54.823	50.662	46.189	41.682	38.051	47.100	49.371
87.5	37.798	35.608	33.037	29.325	24.749	20.588	15.573	11.931	17.279	19.539
90.0	25.002	23.354	23.389	17.660	14.144	9.810	6.052	2.328	1.084	3.550

**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>
0.0	1599.860	1599.860	1599.860	1599.860	1599.860	1599.860	1599.860	1599.860	1599.860	1599.860
2.5	1597.854	1601.970	1604.944	1608.782	1604.828	1602.869	1602.580	1600.102	1598.465	1593.854
5.0	1589.993	1593.635	1597.001	1600.356	1596.713	1593.635	1593.912	1591.584	1590.488	1586.212
7.5	1577.843	1581.221	1584.587	1586.684	1582.235	1578.719	1579.491	1577.324	1576.460	1572.091
10.0	1560.264	1561.843	1565.255	1565.129	1561.140	1556.541	1555.815	1556.253	1553.832	1539.515
12.5	1535.907	1536.979	1537.809	1537.855	1532.864	1526.282	1525.786	1524.553	1523.435	1506.328
15.0	1507.735	1506.570	1506.190	1503.066	1497.280	1490.686	1487.781	1488.012	1485.602	1473.130
17.5	1475.124	1473.026	1471.055	1465.591	1458.398	1449.891	1448.335	1446.398	1445.764	1439.943
20.0	1438.848	1435.759	1431.102	1424.289	1415.586	1406.434	1402.895	1401.339	1400.947	1405.177
22.5	1397.731	1393.546	1386.526	1378.157	1368.382	1357.316	1353.835	1351.702	1352.775	1356.452
25.0	1351.760	1346.342	1337.881	1327.645	1314.850	1305.110	1300.084	1297.260	1299.104	1303.058
27.5	1302.527	1295.519	1285.433	1272.730	1258.978	1247.312	1242.989	1238.828	1242.505	1245.733
30.0	1250.828	1244.350	1232.638	1217.733	1200.592	1190.114	1185.711	1181.815	1186.149	1188.973
32.5	1198.010	1190.241	1177.976	1160.950	1143.394	1132.686	1127.360	1124.305	1129.135	1133.550
35.0	1141.101	1133.573	1119.741	1104.894	1086.369	1074.439	1069.021	1065.298	1071.130	1076.733
37.5	1084.352	1075.073	1060.998	1042.727	1025.091	1013.587	1008.100	1005.979	1009.979	1018.417
40.0	1024.353	1017.598	1001.103	982.452	962.890	952.031	948.942	945.104	950.014	957.092
42.5	965.841	958.279	940.931	922.003	906.072	892.424	888.597	887.687	890.361	899.225
45.0	907.271	899.779	882.015	862.995	849.359	837.428	831.734	831.203	833.624	842.661
47.5	848.506	839.307	823.884	805.855	794.178	782.293	775.827	778.224	777.671	787.492
50.0	790.524	778.582	764.311	746.916	737.234	726.801	720.623	721.142	722.744	731.090
52.5	730.536	719.505	705.199	688.854	679.794	671.206	665.627	665.016	667.540	674.618
55.0	671.863	661.304	647.713	631.506	623.622	617.005	611.691	612.382	614.308	619.748
57.5	613.604	603.922	591.576	580.037	572.533	565.813	562.354	561.490	565.144	569.282
60.0	557.859	547.945	537.294	526.966	520.119	516.741	513.802	512.615	515.058	519.957
62.5	499.750	491.981	482.529	475.128	468.880	466.160	464.915	462.840	467.117	469.169
65.0	442.598	436.166	428.604	423.302	417.481	415.971	414.691	412.708	416.535	418.875
67.5	385.838	381.792	375.637	371.003	366.980	365.793	365.343	364.571	367.337	369.700

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CANDELA TABULATION - (Cont.)

70.0	332.502	328.756	324.168	321.275	319.303	317.747	318.254	318.854	319.949	322.911
72.5	279.419	277.610	274.267	273.667	272.491	271.558	272.734	273.817	274.728	276.757
75.0	226.728	226.613	226.175	227.063	226.867	227.374	228.607	228.803	230.302	231.351
77.5	177.703	177.922	179.352	181.058	183.006	184.055	185.161	187.352	187.905	188.458
80.0	130.096	133.577	136.159	139.456	142.603	143.583	145.462	146.960	147.825	147.421
82.5	88.852	93.947	97.831	100.817	104.874	107.203	108.978	110.776	110.961	110.016
85.0	53.601	58.673	63.296	66.938	72.080	75.238	76.933	77.924	78.477	77.140
87.5	24.392	29.786	35.008	40.265	44.288	48.057	50.212	50.973	51.077	49.348
90.0	8.576	13.498	19.435	24.126	28.172	30.835	33.337	34.270	33.925	32.841

**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>
0.0	1599.860	1599.860	1599.860	1599.860	1599.860	1599.860	1599.860
2.5	1591.203	1584.494	1583.964	1590.696	1596.102	1601.866	1598.719
5.0	1583.653	1577.912	1578.431	1584.829	1590.569	1596.183	1592.194
7.5	1570.085	1565.832	1568.229	1574.858	1581.393	1586.869	1580.483
10.0	1550.408	1549.371	1550.985	1558.224	1566.304	1571.480	1564.149
12.5	1522.674	1522.812	1525.971	1534.731	1544.380	1551.169	1542.478
15.0	1489.291	1490.801	1495.896	1506.190	1516.910	1525.072	1515.250
17.5	1452.001	1454.617	1461.684	1473.211	1485.902	1494.893	1483.862
20.0	1411.552	1414.583	1424.243	1436.543	1451.251	1461.165	1448.946
22.5	1365.143	1370.619	1380.993	1396.244	1411.206	1422.249	1407.609
25.0	1313.202	1320.452	1334.135	1350.654	1367.887	1378.307	1362.815
27.5	1258.263	1266.920	1282.459	1300.383	1319.196	1330.550	1316.302
30.0	1202.552	1212.339	1230.932	1250.079	1269.560	1279.830	1266.136
32.5	1146.380	1158.645	1175.832	1197.365	1216.408	1227.255	1212.154
35.0	1086.669	1103.499	1120.651	1142.818	1162.645	1174.184	1156.570
37.5	1028.687	1043.823	1062.208	1085.897	1104.848	1117.885	1099.107
40.0	967.927	983.743	1002.428	1025.241	1045.194	1059.200	1043.292
42.5	909.346	925.588	943.651	965.634	986.048	999.570	983.097
45.0	852.586	870.257	886.246	908.228	926.914	939.132	920.816
47.5	796.172	814.074	828.921	850.454	869.208	880.862	861.969
50.0	740.127	755.158	768.979	789.798	807.469	818.639	801.417
52.5	683.194	696.831	710.767	729.868	747.516	757.717	741.268
55.0	629.570	640.958	653.408	670.906	686.272	697.211	679.459
57.5	577.444	587.345	598.573	613.881	629.362	638.860	619.552
60.0	527.865	534.562	545.018	558.977	570.458	581.455	559.853
62.5	476.557	481.860	490.805	502.471	513.986	521.571	501.756
65.0	425.273	427.993	436.547	445.342	455.981	461.976	442.621
67.5	373.896	376.444	382.369	390.415	398.830	402.853	385.181
70.0	324.687	328.468	333.309	337.747	344.825	347.303	329.966
72.5	276.941	280.076	282.682	286.082	290.405	292.387	274.866
75.0	231.789	233.045	234.429	236.642	238.567	238.855	221.276
77.5	187.790	188.274	187.640	187.732	187.305	187.421	168.712
80.0	145.969	145.646	143.375	141.243	140.113	138.073	121.670
82.5	107.641	106.477	103.203	100.091	96.413	94.177	77.889
85.0	75.296	72.172	67.538	62.892	58.593	55.596	39.942
87.5	47.965	43.123	39.446	33.417	28.069	24.299	11.331
90.0	29.821	26.213	22.075	16.299	10.962	5.545	0.069

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	571.02	N.A.	14.80
0-30	1179.97	N.A.	30.60
0-40	1871.52	N.A.	48.60
0-60	3120.69	N.A.	81.00
0-80	3780.53	N.A.	98.20
0-90	3851.77	N.A.	100.00
10-90	3701.28	N.A.	96.10
20-40	1300.5	N.A.	33.80
20-50	1973.81	N.A.	51.20
40-70	1671.64	N.A.	43.40
60-80	659.84	N.A.	17.10
70-80	237.37	N.A.	6.20
80-90	71.23	N.A.	1.80
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	3851.77	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	150.49
10-20	420.53
20-30	608.95
30-40	691.55
40-50	673.31
50-60	575.86
60-70	422.47
70-80	237.37
80-90	71.23
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

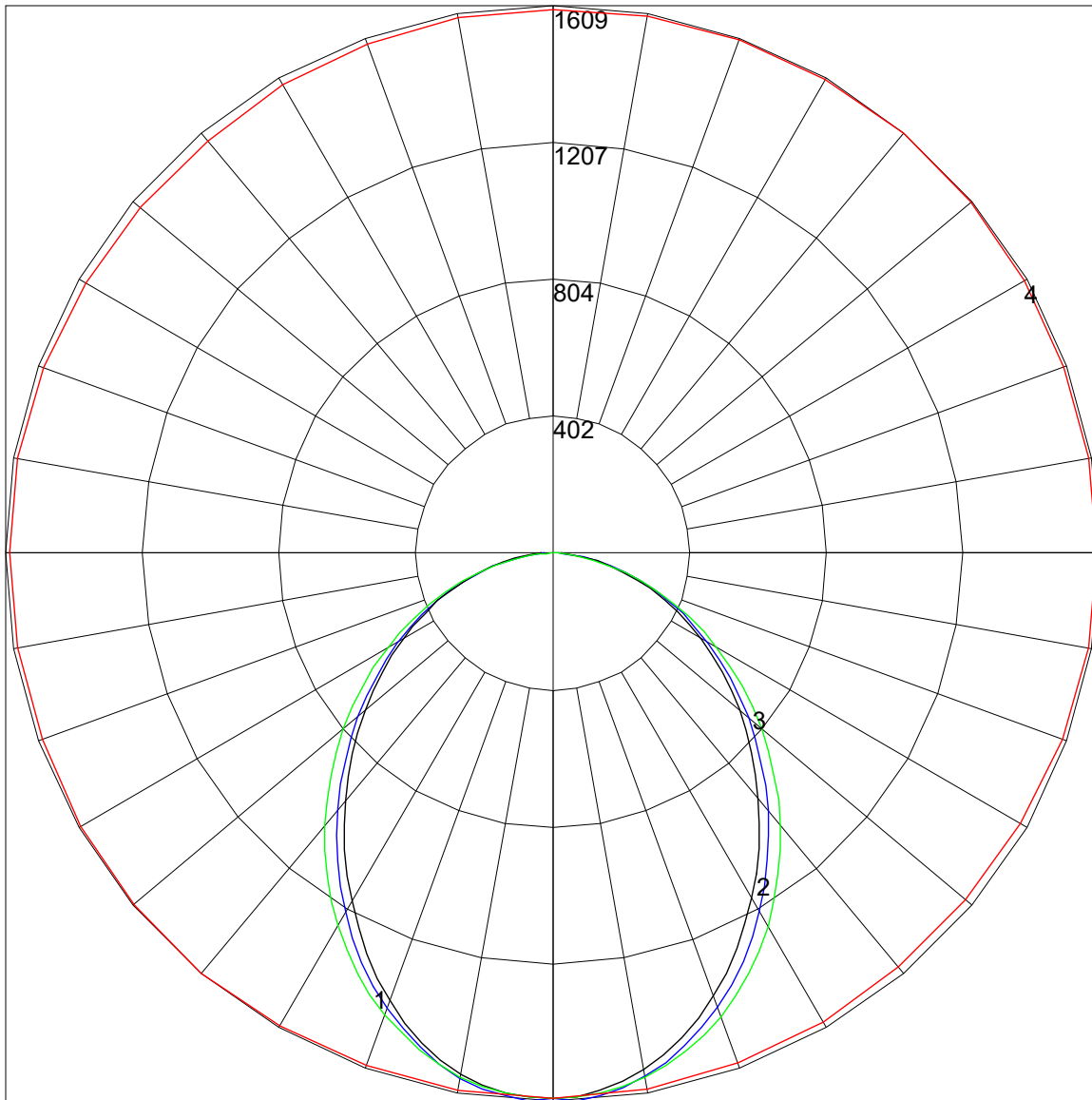
IES INDOOR REPORT
PHOTOMETRIC FILENAME : NLR48HFA40.IES

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	100	92	85	79	97	90	84	78	86	81	77	83	79	75	80	76	73	71
3	91	81	73	67	89	79	72	66	76	70	65	74	68	64	71	67	63	60
4	84	72	63	57	81	71	63	56	68	61	56	66	60	55	64	59	54	52
5	77	65	56	49	75	63	55	49	61	54	49	59	53	48	58	52	48	45
6	71	58	50	43	70	57	49	43	56	48	43	54	47	42	52	47	42	40
7	66	53	45	39	65	52	44	38	51	43	38	49	43	38	48	42	38	36
8	62	49	40	35	60	48	40	34	47	39	34	45	39	34	44	38	34	32
9	58	45	37	31	57	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 = 1608.782 Located At Horizontal Angle = 230, Vertical Angle = 2.5
1 - Vertical Plane Through Horizontal Angles (230 - 50) (Through Max. Cd.)
2 - Vertical Plane Through Horizontal Angles (90 - 270)
3 - Vertical Plane Through Horizontal Angles (0 - 180)
4 - Horizontal Cone Through Vertical Angle (2.5) (Through Max. Cd.)