

**IES INDOOR REPORT**

**PHOTOMETRIC FILENAME : 11690753\_IES INDOOR PHOTOMETRIC REPORT\_TRMUNV065EC850A.IES**

**DESCRIPTION INFORMATION (From Photometric File)**

IESNA:LM-63-2002  
 [TEST] 11690753.01  
 [TESTLAB] UL Verification Services Inc.  
 [ISSUEDATE] 7/24/2017  
 [MANUFAC] Fulham Co Inc  
 [LUMCAT] TRMUNV065EC850A  
 [LUMINAIRE] Retrofit kit installed in DLC reference housing Hubbell Lighting S12-100H.  
 [MORE] Brown housing, semi specular reflector plate above LEDs, plastic prismatic lens  
 [LAMP] 54 White LEDs with patterned optics below each  
 [BALLAST] Fulham WorkHorseLED T1M1UNV105P-60F  
 [OTHER] 25.3 C, 120.01 V, 0.5046 A, 60.43 W, 0.9979 PF, 59.99 Hz  
 [OTHER] This test was performed using the calibrated photodetector method of absolute photometry.

**CHARACTERISTICS**

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	6251
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	103
Total Luminaire Watts	60.43
Ballast Factor	1.00
CIE Type	Semi-Direct
Spacing Criterion (0-180)	1.68
Spacing Criterion (90-270)	1.62
Spacing Criterion (Diagonal)	2.48
Basic Luminous Shape	Rectangular w/Sides
Luminous Length (0-180)	1.00 ft
Luminous Width (90-270)	1.00 ft
Luminous Height	0.42 ft



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

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	7929	9066	7552
55	9619	12142	9141
65	13065	17561	12806
75	13935	18413	13954
85	6175	6749	6436

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**CANDELA TABULATION**

	<u>0.0</u>	<u>5.0</u>	<u>15.0</u>	<u>25.0</u>	<u>35.0</u>	<u>45.0</u>	<u>55.0</u>	<u>60.0</u>	<u>62.5</u>	<u>65.0</u>
<b>0.0</b>	676.2	676.2	676.2	676.2	676.2	676.2	676.2	676.2	676.2	676.2
<b>2.5</b>	678.7	678.9	679.6	679.7	677.1	675.0	674.9	674.7	674.4	674.3
<b>5.0</b>	684.2	682.2	686.1	685.4	683.4	682.0	678.7	677.5	677.0	676.8
<b>7.5</b>	690.7	689.7	691.4	690.6	687.8	686.1	684.0	683.4	682.9	681.7
<b>10.0</b>	702.3	701.0	696.8	695.8	692.9	692.2	691.0	690.1	689.7	689.7
<b>12.5</b>	709.6	709.2	707.5	704.7	701.6	701.0	696.8	694.3	694.3	692.8
<b>15.0</b>	714.5	715.7	712.7	712.3	711.1	708.5	704.5	702.7	699.7	699.9
<b>17.5</b>	716.8	720.5	719.5	721.6	719.7	716.1	714.4	711.9	711.7	709.5
<b>20.0</b>	724.5	726.9	724.9	728.2	728.2	727.5	722.3	722.0	720.0	717.6
<b>22.5</b>	728.6	729.7	730.9	734.8	740.7	741.7	740.5	736.1	734.6	732.0
<b>25.0</b>	738.5	737.7	738.8	743.4	752.2	755.5	754.6	748.3	745.7	744.2
<b>27.5</b>	743.6	742.9	747.5	755.9	765.8	774.8	768.2	762.8	757.7	754.1
<b>30.0</b>	741.8	743.4	752.5	769.5	783.3	791.3	781.4	773.0	768.1	762.7
<b>32.5</b>	737.4	739.8	755.2	777.9	801.5	809.1	797.1	786.7	780.6	774.9
<b>35.0</b>	751.4	753.2	771.3	792.8	819.6	827.1	815.3	803.2	794.7	786.3
<b>37.5</b>	745.5	749.3	777.9	815.4	844.0	855.4	838.9	822.2	814.2	802.1
<b>40.0</b>	742.8	752.8	783.7	829.9	867.3	879.4	864.2	842.2	828.1	816.6
<b>42.5</b>	733.6	746.3	790.2	853.2	900.3	915.8	891.9	867.3	852.5	838.0
<b>45.0</b>	738.8	753.9	801.7	871.8	933.8	947.7	919.1	882.3	862.7	843.6
<b>47.5</b>	741.3	755.1	819.0	906.7	976.4	1001.0	962.5	929.5	908.6	889.1
<b>50.0</b>	739.5	761.6	832.1	943.1	1035.2	1054.9	1016.1	981.5	956.5	933.8
<b>52.5</b>	773.5	792.4	878.5	983.1	1084.6	1115.4	1061.6	1012.8	983.5	956.7
<b>55.0</b>	818.6	829.9	923.5	1055.1	1150.3	1193.1	1117.3	1054.6	1023.5	993.5
<b>57.5</b>	814.3	837.7	942.5	1084.1	1227.7	1275.1	1188.8	1131.2	1100.5	1075.0
<b>60.0</b>	870.2	889.8	1002.9	1151.8	1297.9	1363.9	1262.7	1195.0	1158.1	1125.6
<b>62.5</b>	920.6	946.5	1069.9	1242.4	1397.1	1450.3	1338.9	1244.3	1194.4	1152.9
<b>65.0</b>	972.6	990.0	1124.6	1309.0	1469.2	1562.9	1445.3	1350.8	1299.4	1252.9
<b>67.5</b>	1029.1	1048.3	1192.3	1390.1	1600.3	1667.8	1508.5	1411.9	1356.4	1307.3
<b>70.0</b>	1061.5	1071.4	1215.8	1416.0	1620.5	1716.6	1563.0	1463.5	1412.5	1368.8
<b>72.5</b>	1004.6	1005.9	1150.3	1350.9	1568.9	1640.7	1496.9	1385.4	1330.6	1283.9
<b>75.0</b>	857.3	886.8	996.7	1168.2	1354.5	1418.5	1300.6	1223.4	1176.7	1133.6
<b>77.5</b>	679.9	699.3	787.0	920.8	1069.6	1094.0	1008.7	956.6	918.6	888.8
<b>80.0</b>	492.9	515.0	580.3	669.2	753.5	780.1	717.0	684.8	659.8	643.3
<b>82.5</b>	365.4	389.4	432.3	490.7	536.2	552.0	523.6	499.8	489.1	473.2
<b>85.0</b>	288.6	303.7	333.5	375.0	408.1	423.4	411.9	398.8	391.7	381.7
<b>87.5</b>	250.6	263.5	290.8	327.5	354.4	370.4	362.0	353.2	347.6	340.8
<b>90.0</b>	245.7	250.2	273.1	304.1	326.0	333.5	327.4	321.2	317.4	310.6
<b>92.5</b>	182.2	197.6	222.8	255.5	276.8	285.8	280.0	275.5	270.1	263.6
<b>95.0</b>	151.5	155.4	182.3	217.0	235.2	242.6	240.7	235.6	229.8	222.5
<b>97.5</b>	146.0	149.0	172.7	203.9	219.4	226.2	226.6	221.8	217.8	212.2
<b>100.0</b>	141.7	144.8	166.1	193.4	208.8	217.8	219.4	215.8	211.3	206.2
<b>102.5</b>	142.3	144.3	164.2	188.9	205.2	212.0	212.3	209.7	206.6	202.5
<b>105.0</b>	152.5	153.1	170.8	196.6	208.6	215.1	216.4	212.8	210.0	205.3
<b>107.5</b>	164.5	166.1	179.5	202.5	214.1	220.2	221.4	219.2	217.8	213.1
<b>110.0</b>	166.5	167.8	179.3	196.9	210.4	212.8	216.6	216.0	213.6	209.4
<b>112.5</b>	166.9	164.6	173.3	189.5	198.5	200.3	201.4	200.0	197.0	194.9
<b>115.0</b>	154.3	154.3	158.3	172.2	180.3	183.4	182.9	179.7	177.6	174.6
<b>117.5</b>	135.6	135.9	138.6	150.2	161.1	164.8	163.9	160.3	157.7	154.3
<b>120.0</b>	121.7	122.5	123.8	134.1	144.3	147.1	144.9	141.3	138.9	135.5
<b>122.5</b>	109.5	110.5	111.2	121.1	131.1	133.8	130.4	126.6	123.8	121.0
<b>125.0</b>	100.3	100.5	100.2	108.9	119.5	123.4	119.2	114.7	112.0	109.0
<b>127.5</b>	91.7	91.6	89.9	97.5	108.4	113.2	108.9	104.3	101.5	98.4
<b>130.0</b>	84.0	83.7	81.5	87.5	97.9	102.7	98.1	93.7	90.8	88.0
<b>132.5</b>	77.0	76.8	74.3	77.7	87.4	91.4	87.4	83.1	80.7	77.8

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**CANDELA TABULATION - (Cont.)**

135.0	70.4	70.0	67.6	68.1	76.1	79.5	76.1	72.7	70.5	68.5
137.5	63.5	63.2	60.7	59.2	64.8	67.0	65.0	62.3	60.7	59.9
140.0	56.3	56.1	53.5	50.3	53.0	54.8	53.4	51.4	51.3	50.6
142.5	49.1	48.7	46.2	41.4	41.2	43.4	41.1	41.1	40.9	41.8
145.0	41.0	40.7	38.4	33.8	30.0	32.0	30.2	30.7	31.9	33.3
147.5	32.9	32.7	30.3	26.3	21.1	20.2	20.8	23.4	24.9	26.2
150.0	25.6	25.2	23.4	19.4	13.3	8.8	13.0	16.8	18.3	19.5
152.5	18.4	18.2	16.4	12.7	6.5	1.7	6.6	9.9	11.3	12.6
155.0	11.2	11.1	9.1	5.8	1.3	0.0	1.4	3.6	4.9	5.9
157.5	4.5	4.2	2.5	0.2	0.0	0.0	0.0	0.3	0.6	0.7
160.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
162.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
165.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
167.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
172.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
175.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
177.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
180.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

**Vert. Horizontal Angles**

	<u>67.5</u>	<u>70.0</u>	<u>72.5</u>	<u>75.0</u>	<u>77.5</u>	<u>80.0</u>	<u>82.5</u>	<u>85.0</u>	<u>87.5</u>	<u>90.0</u>
0.0	676.2	676.2	676.2	676.2	676.2	676.2	676.2	676.2	676.2	676.2
2.5	674.5	674.1	674.5	674.4	674.6	674.9	675.1	675.5	675.6	675.6
5.0	676.7	676.7	676.7	676.0	675.8	675.1	674.9	675.8	676.5	676.3
7.5	680.6	680.4	680.7	680.8	680.6	679.8	679.2	679.3	680.3	680.9
10.0	688.7	686.8	686.7	686.9	685.3	684.6	684.8	684.0	683.8	683.9
12.5	689.7	689.1	688.3	687.1	685.9	685.8	685.4	685.5	683.6	682.7
15.0	699.1	697.7	697.6	695.8	694.6	695.7	693.1	693.7	694.6	694.6
17.5	707.6	708.7	705.4	704.0	700.0	696.9	696.8	697.3	696.7	694.9
20.0	714.5	711.7	709.9	708.0	707.6	706.3	704.8	704.4	703.6	702.3
22.5	729.5	725.5	721.8	719.2	717.9	715.9	713.9	710.4	709.4	708.9
25.0	737.7	735.1	731.2	726.6	724.7	720.7	718.8	714.9	714.5	714.7
27.5	749.3	743.7	739.9	735.1	728.4	726.5	722.9	721.9	719.3	720.5
30.0	757.5	751.6	744.3	741.0	732.5	726.8	722.2	719.3	716.6	715.0
32.5	767.4	760.4	751.0	744.4	738.5	729.1	724.0	720.5	715.7	714.4
35.0	779.4	770.4	760.7	752.5	746.6	738.5	731.8	725.8	723.1	722.1
37.5	787.2	775.5	762.2	752.2	742.5	730.9	725.1	717.0	713.2	713.4
40.0	802.9	789.9	780.4	769.3	758.9	747.1	739.4	729.9	723.0	723.0
42.5	820.2	802.1	786.7	769.5	755.2	737.5	725.8	715.0	708.1	706.8
45.0	825.9	805.8	787.1	769.0	752.5	735.8	725.0	713.2	705.1	703.6
47.5	868.9	851.1	828.8	809.6	791.1	774.2	762.7	750.1	740.1	740.7
50.0	906.6	881.0	855.9	831.1	807.7	785.7	768.8	753.9	742.7	744.0
52.5	929.0	901.6	878.1	848.9	823.8	799.8	781.7	767.1	754.4	753.2
55.0	966.0	932.5	904.1	876.0	848.1	825.0	808.9	792.2	778.8	777.9
57.5	1040.1	1005.6	973.2	939.2	904.6	877.0	852.9	832.7	814.5	816.3
60.0	1092.9	1053.7	1022.1	989.6	956.3	921.6	893.0	868.4	851.3	850.5
62.5	1116.0	1074.5	1046.0	1011.0	975.1	952.5	922.5	899.7	883.9	884.4
65.0	1212.0	1166.1	1133.6	1097.1	1055.0	1026.5	999.0	975.4	955.9	953.3
67.5	1270.9	1218.3	1187.1	1142.1	1090.9	1058.1	1025.8	999.9	980.2	978.9
70.0	1320.0	1268.4	1235.2	1192.8	1150.6	1112.7	1080.8	1049.0	1038.1	1030.3
72.5	1242.4	1196.0	1164.2	1122.7	1092.4	1049.5	1025.2	993.0	980.3	971.4
75.0	1106.9	1068.3	1034.6	995.7	965.8	929.6	902.6	881.7	866.0	858.5
77.5	859.3	835.3	805.4	775.1	754.7	726.3	702.3	688.0	679.0	673.4
80.0	625.5	609.2	588.8	567.8	554.8	536.9	517.1	508.2	498.8	491.8

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**CANDELA TABULATION - (Cont.)**

<b>82.5</b>	464.0	448.5	436.5	418.3	410.0	396.3	385.6	376.9	371.2	366.8
<b>85.0</b>	375.4	364.3	354.3	345.1	335.8	326.7	316.8	309.2	304.0	300.8
<b>87.5</b>	333.4	324.9	316.3	308.7	301.1	291.6	282.9	275.6	269.6	266.6
<b>90.0</b>	303.8	296.5	286.8	278.2	272.0	261.8	256.0	249.7	242.4	240.8
<b>92.5</b>	256.9	248.2	240.4	230.5	223.5	215.7	209.3	204.7	199.7	199.2
<b>95.0</b>	217.0	209.1	201.1	192.6	184.5	177.3	170.7	167.2	163.7	162.8
<b>97.5</b>	205.4	197.9	190.7	183.4	177.1	170.8	165.6	162.0	159.1	157.7
<b>100.0</b>	199.5	192.9	186.0	179.9	174.0	168.2	163.4	159.8	157.1	156.0
<b>102.5</b>	196.5	191.1	185.1	180.1	174.7	169.7	164.9	161.3	158.9	159.1
<b>105.0</b>	201.1	196.3	190.4	184.8	179.6	175.0	171.1	167.4	165.4	166.7
<b>107.5</b>	208.4	203.8	197.8	191.6	186.1	181.4	178.4	174.3	172.4	172.8
<b>110.0</b>	206.4	203.1	198.0	193.1	188.3	184.7	181.9	179.7	179.2	180.4
<b>112.5</b>	192.5	190.2	186.7	183.4	180.8	178.3	176.7	175.5	175.3	175.1
<b>115.0</b>	172.2	170.1	166.2	162.5	160.9	157.8	156.6	156.5	156.1	155.3
<b>117.5</b>	151.2	148.0	144.3	141.0	140.1	138.2	137.5	137.5	137.0	136.8
<b>120.0</b>	133.0	129.7	126.5	124.3	123.3	121.9	122.0	122.3	122.3	121.8
<b>122.5</b>	118.3	115.3	112.9	111.7	111.0	110.6	111.1	111.7	111.9	111.4
<b>125.0</b>	106.2	103.6	101.7	100.7	100.2	100.5	101.2	101.8	102.1	101.8
<b>127.5</b>	95.9	93.7	92.4	91.5	91.9	92.4	92.9	93.4	93.6	93.4
<b>130.0</b>	85.5	84.1	83.0	82.4	83.3	83.9	84.5	85.0	85.2	85.2
<b>132.5</b>	76.2	75.4	74.2	74.8	75.8	76.4	76.9	77.4	77.6	77.6
<b>135.0</b>	67.8	66.8	67.1	67.9	68.8	69.4	70.0	70.4	70.5	70.6
<b>137.5</b>	59.1	59.4	60.3	61.2	62.1	62.8	63.3	63.7	63.9	64.0
<b>140.0</b>	51.0	52.5	53.4	54.4	55.2	55.9	56.3	56.7	56.9	56.8
<b>142.5</b>	43.4	45.0	46.1	47.1	48.1	48.7	49.1	49.6	49.8	49.7
<b>145.0</b>	35.1	36.6	37.8	39.0	39.9	40.6	41.0	41.5	41.6	41.5
<b>147.5</b>	27.5	28.7	29.6	30.5	31.4	31.9	32.4	32.9	33.0	32.9
<b>150.0</b>	20.8	21.9	22.7	23.6	24.2	24.6	25.0	25.4	25.6	25.5
<b>152.5</b>	14.0	15.1	15.8	16.7	17.4	17.8	18.1	18.6	18.6	18.6
<b>155.0</b>	7.0	8.0	8.8	9.5	10.2	10.8	11.1	11.6	11.6	11.4
<b>157.5</b>	1.3	2.0	2.4	2.9	3.5	3.9	4.2	4.5	4.6	4.8
<b>160.0</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>162.5</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>165.0</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>167.5</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>170.0</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>172.5</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>175.0</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>177.5</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>180.0</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

**IES INDOOR REPORT**

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**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	265.89	N.A.	4.30
0-30	609.40	N.A.	9.70
0-40	1101.62	N.A.	17.60
0-60	2653.93	N.A.	42.50
0-80	5016.89	N.A.	80.30
0-90	5457.49	N.A.	87.30
10-90	5392.15	N.A.	86.30
20-40	835.74	N.A.	13.40
20-50	1493.69	N.A.	23.90
40-70	2783.6	N.A.	44.50
60-80	2362.96	N.A.	37.80
70-80	1131.66	N.A.	18.10
80-90	440.60	N.A.	7.00
90-110	445.20	N.A.	7.10
90-120	612.11	N.A.	9.80
90-130	711.14	N.A.	11.40
90-150	789.88	N.A.	12.60
90-180	793.60	N.A.	12.70
110-180	348.40	N.A.	5.60
0-180	6251.09	N.A.	100.00

Total Luminaire Efficiency = N.A.%

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	65.33
10-20	200.55
20-30	343.51
30-40	492.22
40-50	657.95
50-60	894.35
60-70	1231.3
70-80	1131.66
80-90	440.60
90-100	242.42
100-110	202.78
110-120	166.91
120-130	99.03
130-140	55.83
140-150	22.91
150-160	3.72
160-170	0.00
170-180	0.00

**IES INDOOR REPORT**

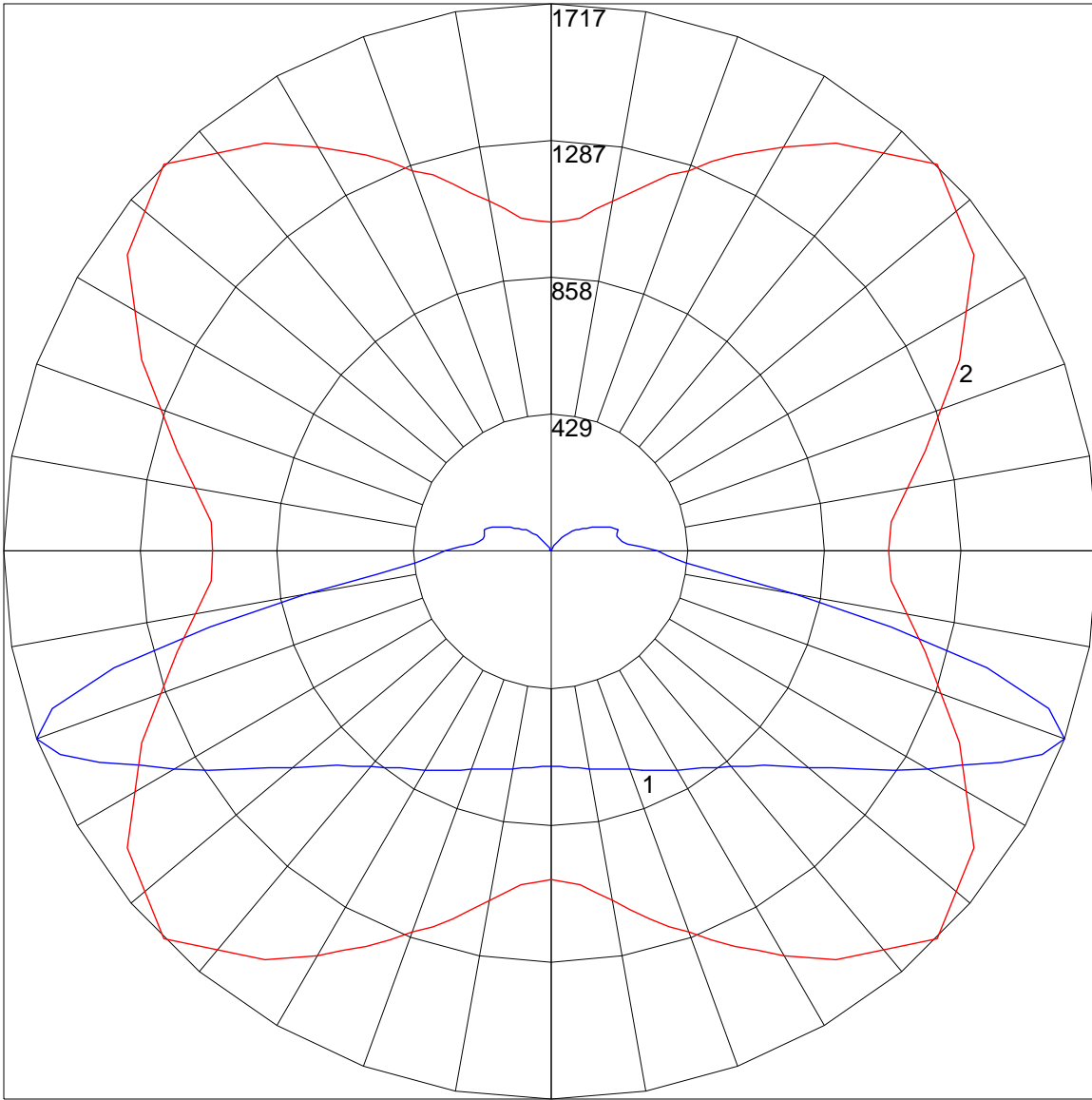
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**COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD**

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	116	116	116	116	116	112	112	112	112	104	104	104	97	97	97	90	90	90	87
1	101	94	87	82	96	90	84	79	83	79	74	77	73	70	71	68	65	62	62
2	88	77	68	60	84	74	66	58	68	61	55	63	57	52	58	53	49	45	45
3	78	65	54	46	74	62	52	45	57	49	42	52	46	40	48	42	37	34	34
4	70	56	45	36	67	53	43	35	49	40	34	45	38	32	41	35	30	27	27
5	64	48	38	30	61	46	36	29	43	34	27	39	32	26	36	30	24	22	22
6	58	43	32	25	55	41	31	24	38	29	23	35	27	22	32	26	20	18	18
7	54	38	28	21	51	37	27	21	34	26	20	31	24	19	29	22	17	15	15
8	50	34	25	18	47	33	24	18	31	23	17	28	21	16	26	20	15	13	13
9	46	31	22	16	44	30	22	16	28	20	15	26	19	14	24	18	13	11	11
10	43	29	20	14	41	28	19	14	26	18	13	24	17	13	22	16	12	10	10

POLAR GRAPH



Maximum Candela = 1716.6 Located At Horizontal Angle = 45, Vertical Angle = 70  
# 1 - Vertical Plane Through Horizontal Angles (45 - 225) (Through Max. Cd.)  
# 2 - Horizontal Cone Through Vertical Angle (70) (Through Max. Cd.)