

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



Scaled data based on original data using
LM-79-2024 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions

Brand: NEO-RAY

Report Number: P243602

Luminaire Tested: S124RDRP-H575D835-X4F0-XX-UDD-A-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P243602
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-70)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S124RDRP-H575D835-X4F0-XX-UDD-A-W
Description: DEFINE 4 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 3500K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

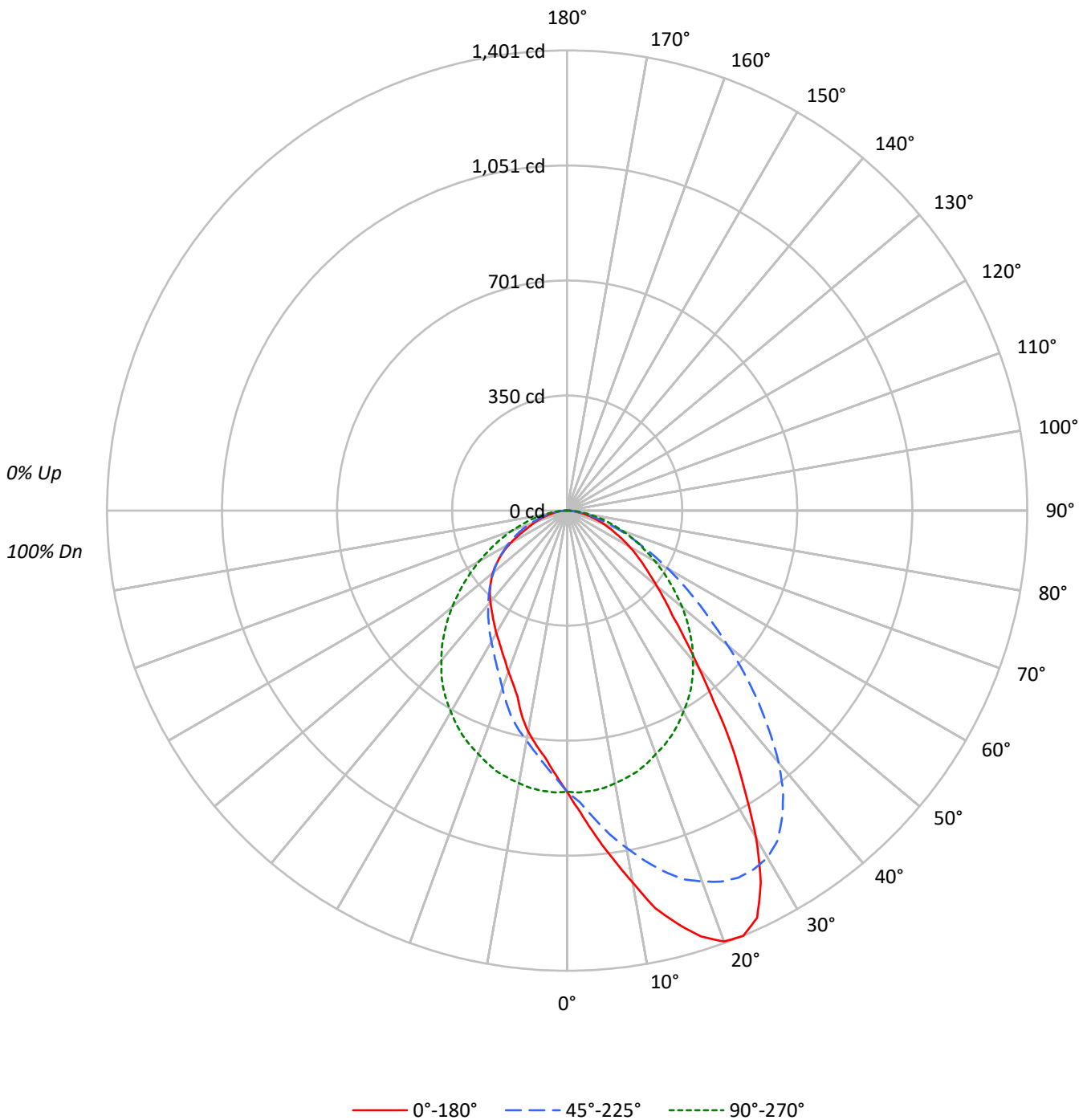
Lumens per Lamp: N/A
Luminaire Lumens: 2209.3 lumens
Efficiency: N/A
Efficacy: 128.4 lumens/watt
Spacing Criteria (0/90/45): 1.27 / 1.23 / 1.39
Luminous Opening: Rectangular (W 3.88' x L: 0.31' x H: 0')
CIE Type: Direct

Input Watts (W): 17.2
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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Luminous Intensity Polar Plot



TEST NUMBER: P243602

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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20					20					20					20					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	50	30	10	50	30	10	0		
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100					100			
1	110	105	102	98	107	103	100	97	99	96	93	95	93	91	92	90	88					86				
2	101	93	87	82	98	91	86	81	88	83	79	85	81	77	82	78	75					73				
3	92	83	75	69	90	81	74	68	78	72	67	76	70	66	73	69	65					63				
4	85	74	66	59	83	73	65	59	70	63	58	68	62	57	66	61	57					55				
5	79	66	58	52	77	65	57	51	63	56	51	61	55	50	60	54	50					48				
6	73	60	52	46	71	59	51	45	58	50	45	56	50	45	54	49	44					42				
7	68	55	46	41	66	54	46	40	53	45	40	51	45	40	50	44	40					38				
8	63	50	42	36	62	50	42	36	48	41	36	47	41	36	46	40	36					34				
9	59	46	38	33	58	46	38	33	45	38	33	43	37	33	42	37	32					31				
10	56	43	35	30	54	42	35	30	41	35	30	40	34	30	39	34	30					28				

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	7609	7609	7609	7609	7609
5°	8864	8385	7642	6937	6746
10°	10380	9414	7609	6418	6167
15°	11995	10467	7571	5997	5386
20°	13205	11367	7463	5446	4938
25°	13417	12093	7395	5025	4617
30°	11811	12522	7264	4729	4427
35°	9478	12381	7140	4517	4283
40°	7209	11631	6912	4336	4216
45°	5723	10333	6659	4186	4165
50°	4913	8809	6329	4052	4093
55°	4339	7481	5920	3910	3894
60°	3888	6324	5493	3733	3568
65°	3422	5201	5075	3477	3001
70°	3049	4288	4608	3189	2703
75°	2655	3366	4190	2806	2404
80°	2252	2575	3599	2370	2216
85°	1968	2111	3090	2315	2244

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 55°
 Vertical Angle: 45°
 Luminance: 11121 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	83.1	3.8
10°-20°	251.9	11.4
20°-30°	393.1	17.8
30°-40°	438.4	19.8
40°-50°	394.1	17.8
50°-60°	311.4	14.1
60°-70°	206.8	9.4
70°-80°	103.7	4.7
80°-90°	27.0	1.2
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	728.0	33.0
0°-40°	1166.4	52.8
0°-60°	1871.8	84.7
0°-90°	2209.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2209.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	856	856	856	856	856	
5°	993	940	856	777	756	100
15°	1303	1137	823	652	585	370
25°	1368	1233	754	512	471	612
35°	873	1141	658	416	395	543
45°	455	822	530	333	331	361
55°	280	483	382	252	251	252
65°	163	247	241	165	143	163
75°	77	98	122	82	70	83
85°	19	21	30	23	22	22
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	856.0	856.0	856.0	856.0	856.0	856.0	856.0	856.0	856.0	856.0	856.0
2.5°	919.4	916.0	915.7	911.4	911.0	906.7	905.4	901.7	894.4	888.7	889.0
5°	993.4	990.7	990.4	986.0	984.7	979.4	971.0	961.0	949.4	939.7	933.4
7.5°	1069.4	1074.0	1069.0	1069.0	1059.4	1053.0	1036.7	1028.4	1008.4	994.4	979.7
10°	1150.0	1154.4	1152.4	1148.4	1135.7	1122.7	1105.7	1089.4	1065.0	1043.0	1028.4
12.5°	1240.0	1227.0	1235.4	1223.0	1212.7	1192.0	1175.7	1143.0	1123.7	1091.7	1063.0
15°	1303.4	1298.4	1298.0	1289.7	1278.4	1255.7	1238.0	1204.0	1171.0	1137.4	1105.0
17.5°	1360.0	1360.7	1356.0	1342.7	1328.0	1306.0	1282.0	1251.7	1214.0	1176.7	1138.4
20°	1396.0	1396.4	1393.0	1386.0	1370.0	1350.0	1325.4	1285.7	1243.0	1201.7	1163.4
22.5°	1401.4	1402.4	1401.4	1397.0	1386.0	1369.7	1347.0	1313.4	1270.4	1223.0	1177.4
25°	1368.0	1371.4	1371.7	1377.7	1372.0	1365.7	1349.0	1320.7	1281.0	1233.0	1183.4
27.5°	1276.7	1286.0	1294.7	1305.4	1315.0	1323.7	1325.0	1310.0	1276.0	1231.4	1184.0
30°	1150.7	1161.7	1179.0	1190.4	1220.4	1239.4	1265.0	1270.7	1254.4	1220.0	1174.4
32.5°	1004.0	1015.7	1022.4	1059.7	1102.7	1133.7	1176.4	1201.7	1208.0	1191.7	1154.4
35°	873.4	875.4	880.4	922.7	965.4	1012.4	1065.4	1109.4	1139.4	1141.0	1122.7
37.5°	733.3	735.7	755.3	787.7	824.7	876.4	937.4	1000.0	1055.0	1080.4	1075.0
40°	621.3	620.7	641.7	669.7	705.7	759.3	822.4	890.7	949.4	1002.4	1015.0
42.5°	530.7	533.0	551.0	567.3	602.0	639.7	707.0	778.0	853.4	911.4	950.0
45°	455.3	461.3	473.7	489.0	515.0	549.7	604.7	675.3	752.3	822.0	868.4
47.5°	403.3	405.0	411.3	430.3	447.7	475.7	522.7	582.7	651.0	729.0	790.0
50°	355.3	359.3	361.7	373.0	390.0	416.7	453.0	497.7	565.3	637.0	713.3
52.5°	314.0	316.3	320.7	331.0	344.3	363.0	391.7	431.0	487.3	553.7	625.7
55°	280.0	280.3	284.7	292.0	302.3	316.7	344.0	372.3	422.3	482.7	548.0
57.5°	249.3	247.3	251.3	255.7	265.7	278.0	295.7	324.7	363.7	415.0	474.0
60°	218.7	220.3	220.0	225.0	230.3	242.7	257.7	276.7	308.7	355.7	405.7
62.5°	190.0	189.7	193.0	196.0	199.7	209.7	222.0	237.7	262.7	297.3	345.7
65°	162.7	163.3	166.0	168.3	172.3	178.7	188.0	200.7	220.7	247.3	288.0
67.5°	138.0	140.3	141.7	142.3	146.0	150.7	158.7	169.0	182.7	204.0	238.0
70°	117.3	118.0	118.7	121.0	122.7	125.3	131.3	137.0	149.3	165.0	189.7
72.5°	98.0	97.3	99.3	100.0	100.7	103.3	107.0	110.0	118.0	131.3	146.7
75°	77.3	77.7	78.0	79.0	81.7	82.0	83.7	87.0	92.7	98.0	108.3
77.5°	58.0	59.0	58.7	59.7	60.7	61.7	62.3	65.3	69.3	73.7	78.7
80°	44.0	44.0	44.0	44.7	44.0	46.3	46.3	47.3	48.3	50.3	54.0
82.5°	30.0	30.7	31.0	31.3	31.7	31.7	32.0	32.7	34.0	34.7	35.7
85°	19.3	18.7	19.0	19.0	19.0	19.0	19.7	20.3	20.3	20.7	21.7
87.5°	8.7	8.7	8.7	8.7	8.3	8.7	9.0	9.0	9.3	9.3	10.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	856.0	856.0	856.0	856.0	856.0	856.0	856.0	856.0	856.0	856.0	856.0
2.5°	887.0	886.0	881.0	875.7	870.7	865.7	864.0	859.0	853.0	847.7	841.7
5°	926.7	918.7	907.7	896.4	884.7	874.0	865.7	856.4	845.7	833.0	823.0
7.5°	966.7	952.0	934.0	917.4	897.4	881.4	865.4	852.0	836.7	818.7	805.0
10°	1005.7	981.4	959.4	933.0	907.7	885.7	865.4	843.0	822.7	803.4	784.4
12.5°	1036.7	1012.4	980.7	948.4	915.7	887.0	859.7	833.4	808.0	784.7	763.7
15°	1072.0	1037.0	998.0	962.4	917.7	882.4	851.0	822.7	793.7	765.3	742.3
17.5°	1098.0	1056.7	1008.4	967.4	924.4	880.4	842.7	807.0	773.7	744.0	720.3
20°	1118.0	1069.0	1020.7	968.7	917.4	872.4	830.0	789.0	755.3	723.0	698.0
22.5°	1126.7	1075.0	1021.4	965.0	910.4	859.4	815.4	773.0	735.0	701.7	672.7
25°	1130.4	1073.7	1018.0	954.0	898.7	846.7	797.7	754.0	715.0	677.3	648.7
27.5°	1127.4	1066.7	1002.7	942.4	879.7	828.7	776.7	732.3	691.7	655.3	623.3
30°	1119.4	1050.7	987.0	919.4	859.0	805.4	754.7	707.7	666.7	629.7	598.0
32.5°	1098.7	1032.7	960.4	894.4	829.4	776.4	730.3	684.0	642.3	603.7	573.0
35°	1073.0	1008.4	932.7	863.7	799.4	745.7	699.3	658.0	617.0	576.0	544.7
37.5°	1040.7	975.0	902.0	827.7	764.7	712.7	670.3	628.7	588.0	550.3	515.3
40°	997.0	937.0	863.7	789.0	725.7	675.7	634.0	595.7	559.7	522.7	485.0
42.5°	942.7	897.0	821.4	747.7	685.7	636.0	599.0	564.7	530.0	492.0	458.0
45°	884.7	845.7	777.0	702.7	643.7	595.3	560.0	529.7	497.0	463.3	427.7
47.5°	819.4	790.4	731.0	657.3	595.3	554.0	521.3	493.7	464.0	434.0	399.3
50°	745.7	728.0	677.3	610.3	551.3	509.3	482.3	457.7	432.3	402.3	372.7
52.5°	672.0	668.7	621.3	562.3	506.7	467.7	441.3	418.7	398.0	369.7	344.7
55°	594.7	604.7	565.3	511.0	461.3	423.7	400.3	382.0	364.0	340.0	316.0
57.5°	526.0	537.3	510.3	460.3	414.0	382.0	362.0	345.3	329.7	307.7	291.7
60°	450.0	470.7	456.3	410.7	369.7	341.0	322.3	309.0	296.0	277.0	263.0
62.5°	390.0	404.3	396.0	362.0	325.7	302.3	285.7	273.3	263.0	248.3	234.7
65°	325.7	343.7	339.3	317.0	285.0	263.7	251.0	241.3	230.7	219.0	207.7
67.5°	267.7	286.3	285.3	270.0	246.3	228.7	216.7	209.7	201.0	189.7	182.7
70°	215.3	232.7	233.3	225.7	209.0	192.3	183.7	177.3	170.7	162.3	157.3
72.5°	167.3	183.0	185.7	182.0	171.3	160.3	152.7	148.3	142.7	135.7	131.3
75°	125.0	136.3	142.7	141.0	136.7	129.3	125.0	122.0	116.3	111.3	107.7
77.5°	89.0	98.0	104.3	107.0	105.0	102.0	98.0	95.7	89.7	87.3	85.3
80°	59.7	67.7	73.3	75.0	76.0	75.3	71.7	70.3	67.3	66.3	64.3
82.5°	36.7	41.0	45.0	49.3	51.3	51.3	49.3	49.7	47.0	45.7	45.0
85°	22.3	23.3	24.0	27.3	30.0	31.0	30.0	30.3	29.3	28.3	27.3
87.5°	10.3	10.3	10.7	11.3	12.0	14.0	14.7	15.7	14.3	14.3	12.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	856.0	856.0	856.0	856.0	856.0	856.0	856.0	856.0	856.0	856.0	856.0
2.5°	838.0	833.7	830.4	825.0	820.7	813.7	811.4	811.4	812.7	811.0	812.7
5°	816.0	808.0	799.4	791.7	783.4	777.4	771.3	770.0	769.3	765.3	765.7
7.5°	794.0	783.4	772.3	762.3	752.0	742.7	736.3	733.7	731.3	728.7	725.7
10°	770.3	758.0	745.0	733.7	723.7	711.0	704.7	702.7	696.0	694.7	690.0
12.5°	745.3	732.7	719.7	705.0	695.3	683.0	673.7	669.3	663.0	658.3	651.3
15°	725.7	709.7	692.3	678.0	665.3	651.7	639.0	630.7	622.3	609.3	603.0
17.5°	701.3	683.0	668.0	652.7	634.3	614.3	599.3	587.0	578.0	567.3	561.0
20°	675.0	658.0	639.3	617.7	598.3	575.7	562.0	551.7	544.7	538.3	535.0
22.5°	651.7	632.0	606.3	585.7	558.7	540.7	529.7	523.0	516.3	509.7	506.3
25°	626.3	603.3	572.0	546.7	526.3	512.3	501.7	495.3	488.3	484.3	479.3
27.5°	601.3	571.7	540.3	517.3	501.3	485.0	476.0	471.0	465.7	460.0	456.0
30°	571.0	537.3	511.3	490.3	474.3	460.7	454.0	446.7	442.0	438.7	436.3
32.5°	539.3	507.0	483.3	465.3	449.7	439.3	431.0	426.3	422.3	418.7	416.0
35°	509.7	478.3	458.3	441.0	428.0	416.3	410.0	405.7	402.3	399.3	398.0
37.5°	480.3	453.7	432.0	418.3	404.7	395.3	389.3	385.3	383.3	380.3	380.7
40°	451.3	427.3	410.0	394.3	381.7	373.7	369.0	367.3	364.3	363.3	364.3
42.5°	425.3	403.3	386.7	372.0	361.0	353.3	349.7	347.3	346.3	346.0	346.3
45°	400.0	379.3	363.3	351.3	340.0	333.0	330.0	328.3	327.3	329.0	329.3
47.5°	374.7	356.0	341.7	327.7	318.3	313.3	310.3	309.0	310.0	310.7	313.0
50°	349.7	332.3	317.3	305.0	297.7	293.0	292.0	289.7	291.3	292.3	294.0
52.5°	324.3	308.7	295.3	283.7	276.0	273.0	270.7	269.7	272.0	272.0	273.7
55°	298.7	285.0	272.7	262.0	256.0	252.3	250.7	249.3	250.7	251.0	250.7
57.5°	274.7	261.7	248.7	239.7	234.7	230.7	229.0	228.3	228.0	229.3	229.0
60°	249.3	237.0	226.7	217.3	212.3	210.0	206.3	207.0	207.0	207.0	203.7
62.5°	224.0	211.7	202.7	196.3	190.3	186.3	185.7	184.7	182.7	182.3	178.0
65°	198.0	188.7	181.0	174.7	168.7	165.3	164.3	161.3	159.0	154.7	151.7
67.5°	174.0	167.3	158.3	153.0	148.0	144.0	140.3	138.0	133.3	129.0	126.3
70°	150.0	143.0	137.0	131.3	126.3	122.7	118.3	114.0	111.0	108.3	106.3
72.5°	126.0	120.0	115.0	109.7	104.3	100.7	97.3	94.0	92.7	91.3	90.3
75°	103.7	98.0	93.3	89.0	86.0	81.7	80.0	78.7	77.3	75.7	73.7
77.5°	82.0	77.7	74.0	70.3	67.7	65.3	64.0	60.0	56.7	56.0	55.3
80°	61.0	57.7	55.3	52.7	49.7	46.3	45.3	44.0	43.3	43.3	43.7
82.5°	42.7	40.7	38.0	35.7	34.7	33.3	33.3	33.0	32.7	33.0	33.0
85°	26.0	23.3	22.7	22.3	22.7	22.7	22.7	22.7	22.3	22.7	22.0
87.5°	11.3	12.3	12.7	11.7	12.0	11.3	11.7	11.7	11.7	12.0	11.7
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P243602

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CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	856.0	856.0	856.0	856.0
2.5°	810.7	810.7	807.4	804.7
5°	765.0	760.7	760.0	756.0
7.5°	722.3	721.7	720.0	720.0
10°	688.3	686.0	683.7	683.3
12.5°	640.3	643.7	639.7	638.7
15°	598.3	595.7	592.3	585.3
17.5°	559.3	554.3	553.0	550.0
20°	528.7	525.0	523.7	522.0
22.5°	499.7	499.0	495.0	494.0
25°	478.3	475.0	472.3	470.7
27.5°	455.0	452.7	451.3	448.7
30°	433.7	433.0	431.3	431.3
32.5°	414.3	412.3	412.3	412.0
35°	396.7	397.3	395.3	394.7
37.5°	380.0	379.0	379.3	378.7
40°	363.7	363.0	363.0	363.3
42.5°	347.0	347.3	348.0	348.0
45°	330.3	330.7	331.3	331.3
47.5°	314.7	314.0	314.7	314.0
50°	294.7	296.7	296.3	296.0
52.5°	274.3	273.7	275.0	274.7
55°	252.3	251.3	252.7	251.3
57.5°	227.7	228.0	228.0	227.3
60°	203.0	202.0	200.7	200.7
62.5°	174.3	171.3	169.3	170.7
65°	146.7	144.3	143.7	142.7
67.5°	124.7	122.0	121.0	120.7
70°	105.7	104.3	104.0	104.0
72.5°	89.7	89.7	88.7	88.0
75°	73.0	71.7	70.0	70.0
77.5°	54.7	54.3	54.0	54.0
80°	42.7	42.7	43.0	43.3
82.5°	32.0	32.3	32.7	32.7
85°	21.7	21.7	22.0	22.0
87.5°	11.7	11.7	11.7	11.3
90°	0.0	0.0	0.0	0.0



TEST NUMBER: P243602
 CATALOG NUMBER: S124RDRP-H575D835-X4F0-XX-UDD-A-W

CIE UGR TABLE:

Reflectances:											
Ceiling		0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
Wall		0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
Reference plane		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Room dimensions		Viewed crosswise					Viewed endwise				
X=2H	Y=2H	16.39	17.93	16.76	18.24	18.55	18.09	19.62	18.45	19.94	20.25
	3H	17.62	19.00	18.00	19.33	19.69	19.57	20.95	19.95	21.28	21.64
	4H	18.06	19.35	18.46	19.70	20.08	20.11	21.40	20.51	21.75	22.13
	6H	18.34	19.53	18.75	19.90	20.29	20.50	21.69	20.91	22.06	22.45
	8H	18.42	19.56	18.85	19.95	20.35	20.62	21.76	21.04	22.15	22.55
	12H	18.47	19.56	18.91	19.95	20.37	20.70	21.78	21.13	22.17	22.60
4H	2H	17.60	18.89	18.00	19.24	19.62	18.62	19.91	19.01	20.26	20.63
	3H	18.87	19.94	19.28	20.34	20.74	20.39	21.46	20.80	21.86	22.26
	4H	19.34	20.30	19.77	20.72	21.16	21.05	22.01	21.48	22.43	22.87
	6H	19.67	20.51	20.13	20.95	21.41	21.55	22.39	22.00	22.83	23.29
	8H	19.77	20.56	20.24	21.00	21.47	21.70	22.49	22.17	22.93	23.40
	12H	19.85	20.55	20.33	21.03	21.50	21.82	22.52	22.30	23.00	23.47
8H	4H	19.75	20.54	20.21	20.98	21.45	21.18	21.96	21.64	22.41	22.87
	6H	20.15	20.80	20.64	21.29	21.76	21.77	22.42	22.27	22.91	23.39
	8H	20.29	20.88	20.81	21.39	21.87	21.99	22.58	22.51	23.09	23.57
	12H	20.42	20.93	20.92	21.42	21.99	22.17	22.69	22.68	23.18	23.74
12H	4H	19.79	20.49	20.27	20.97	21.44	21.17	21.87	21.65	22.35	22.82
	6H	20.20	20.79	20.72	21.30	21.78	21.77	22.35	22.28	22.86	23.35
	8H	20.40	20.91	20.91	21.40	21.97	22.03	22.54	22.54	23.04	23.60