

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: P243494

Luminaire Tested: S124DRP-H575D830-X4F0-XX-UDD-A-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P243494
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-60)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S124DRP-H575D830-X4F0-XX-UDD-A-W
Description: DEFINE 4 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 3000K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

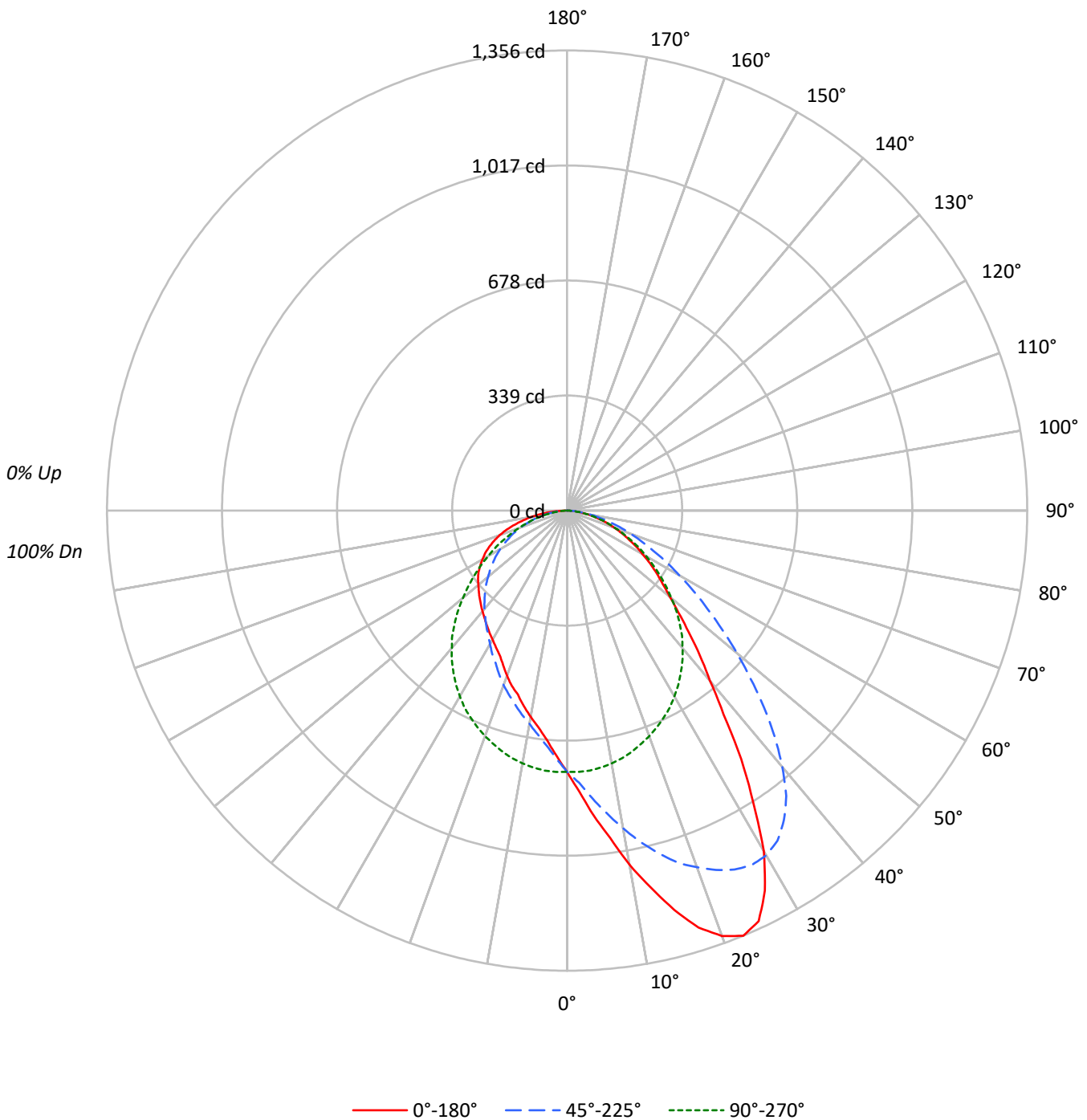
Lumens per Lamp: N/A
Luminaire Lumens: 2207.2 lumens
Efficiency: N/A
Efficacy: 128.3 lumens/watt
Spacing Criteria (0/90/45): 1.35 / 1.22 / 1.45
Luminous Opening: Rectangular (W 3.88' x L: 0.31' x H: 0')
CIE Type: Direct

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: P243494

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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	109	105	101	97	107	103	99	96	98	95	93	94	92	90	91	89	87	85					85			
2	100	92	86	80	97	90	84	79	87	82	77	83	79	76	80	77	74	72					72			
3	92	81	74	67	89	80	73	67	77	71	66	74	69	64	72	67	63	61					61			
4	84	73	64	58	82	71	63	57	69	62	56	66	60	56	64	59	55	53					53			
5	78	65	56	50	75	64	56	50	62	55	49	60	54	49	58	53	48	46					46			
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43	41					41			
7	67	53	45	39	65	53	45	39	51	44	38	50	43	38	48	42	38	36					36			
8	62	49	41	35	61	48	40	35	47	40	35	46	39	34	44	39	34	32					32			
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31	29					29			
10	54	41	34	29	53	41	34	28	40	33	28	39	33	28	38	32	28	26					26			

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	6843	6843	6843	6843	6843
5°	8051	7592	6860	6201	6055
10°	9569	8584	6829	5762	5575
15°	11207	9628	6768	5447	5164
20°	12619	10580	6690	5174	4898
25°	13096	11448	6601	4881	4610
30°	11893	12042	6488	4663	4508
35°	9703	12089	6335	4508	4479
40°	7598	11444	6136	4400	4499
45°	6358	10321	5889	4302	4582
50°	5457	9025	5544	4205	4718
55°	4985	7820	5171	4133	4947
60°	4569	6786	4788	4066	5127
65°	4190	5881	4381	3931	5326
70°	3854	5154	3953	3805	5486
75°	3431	4434	3476	3551	5481
80°	2861	3604	2846	3281	5467
85°	2183	2693	2152	2947	5130

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 50°
 Vertical Angle: 45°
 Luminance: 10786 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	74.9	3.4
10°-20°	232.1	10.5
20°-30°	372.8	16.9
30°-40°	426.2	19.3
40°-50°	392.3	17.8
50°-60°	320.9	14.5
60°-70°	228.7	10.4
70°-80°	125.7	5.7
80°-90°	33.8	1.5
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°	679.8	30.8
0°-40°	1105.9	50.1
0°-60°	1819.1	82.4
0°-90°	2207.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2207.2	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	770	770	770	770	770	
5°	902	851	769	695	679	91
15°	1218	1046	736	592	561	347
25°	1335	1167	673	498	470	599
35°	894	1114	584	415	413	556
45°	506	821	468	342	364	395
55°	322	505	334	267	319	289
65°	199	280	208	187	253	199
75°	100	129	101	103	160	107
85°	21	26	21	29	50	26
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°	769.8	769.8	769.8	769.8	769.8	769.8	769.8	769.8	769.8	769.8	769.8
2.5°	828.8	826.3	825.1	823.5	823.2	821.6	818.5	814.1	808.4	802.4	802.4
5°	902.3	901.7	897.0	897.3	891.4	884.8	879.7	873.4	861.2	850.8	843.6
7.5°	972.7	979.3	977.8	972.7	963.9	954.5	944.4	935.7	913.0	900.5	890.1
10°	1060.1	1062.6	1058.2	1051.0	1043.1	1024.9	1011.7	996.9	972.4	951.0	932.2
12.5°	1136.7	1142.7	1134.8	1127.9	1109.4	1095.9	1082.7	1053.2	1027.4	1000.4	973.0
15°	1217.8	1211.5	1215.6	1198.6	1185.4	1172.5	1138.9	1108.8	1079.6	1046.2	1017.7
17.5°	1288.2	1288.2	1280.6	1269.6	1255.8	1231.6	1198.0	1164.7	1132.3	1088.7	1048.1
20°	1334.0	1337.5	1328.7	1317.1	1300.4	1275.3	1248.6	1212.5	1169.4	1118.5	1072.6
22.5°	1356.0	1356.7	1353.5	1343.8	1330.3	1308.9	1281.6	1246.4	1200.8	1146.2	1098.1
25°	1335.3	1338.8	1337.8	1337.2	1330.3	1318.0	1296.0	1263.4	1221.9	1167.2	1115.4
27.5°	1262.4	1270.9	1278.1	1281.3	1288.8	1289.4	1282.8	1263.0	1229.1	1177.6	1119.8
30°	1158.7	1154.3	1173.8	1183.5	1209.3	1224.7	1235.7	1234.4	1215.0	1173.2	1118.2
32.5°	1020.5	1032.4	1046.2	1069.2	1099.7	1135.5	1162.5	1182.6	1180.7	1153.4	1107.5
35°	894.2	894.2	911.8	940.1	972.4	1015.5	1060.7	1098.1	1121.0	1114.1	1081.7
37.5°	757.2	765.7	785.8	807.8	847.4	888.8	948.5	998.2	1046.2	1060.7	1044.0
40°	654.8	658.5	679.9	698.4	739.0	782.0	832.0	895.4	950.7	986.2	988.4
42.5°	578.7	578.4	587.2	603.9	636.5	674.9	728.9	791.1	855.8	906.1	929.7
45°	505.8	505.2	514.3	531.3	554.5	588.5	635.3	697.5	763.8	821.0	858.0
47.5°	444.3	449.9	454.0	467.2	486.4	515.3	555.5	605.1	668.9	733.0	783.0
50°	394.6	397.1	405.9	412.2	433.6	453.7	486.0	530.7	585.3	652.6	706.6
52.5°	355.0	356.6	361.9	370.1	382.4	400.0	425.7	466.9	516.2	574.6	630.6
55°	321.7	320.8	324.2	329.6	340.3	355.0	373.9	405.3	448.3	504.6	556.1
57.5°	289.1	289.1	292.2	296.0	301.9	314.2	332.7	357.5	392.1	442.1	487.6
60°	257.0	259.2	260.5	264.2	269.3	278.4	292.2	311.7	340.9	381.7	427.0
62.5°	228.7	228.7	230.9	232.2	238.8	245.4	255.4	272.1	295.0	331.5	366.7
65°	199.2	201.1	201.1	203.6	209.2	214.3	222.1	234.7	253.5	279.6	312.6
67.5°	174.1	174.1	175.6	176.9	180.0	183.5	190.4	200.1	216.2	236.9	266.7
70°	148.3	149.2	148.6	150.2	152.1	155.5	160.6	168.7	180.3	198.3	220.2
72.5°	125.0	123.8	124.4	126.0	126.9	129.1	132.3	138.6	148.0	162.4	178.5
75°	99.9	99.3	101.5	100.9	102.4	104.3	107.1	111.9	119.1	129.1	141.4
77.5°	77.9	77.0	77.9	78.5	79.2	80.7	82.9	85.8	90.8	97.4	108.4
80°	55.9	55.6	56.2	56.9	57.2	59.7	60.3	63.2	65.4	70.4	75.7
82.5°	37.1	37.7	38.0	38.6	38.3	39.6	40.2	42.1	44.0	46.5	50.6
85°	21.4	20.4	21.4	21.4	21.4	22.9	22.6	23.9	25.1	26.4	29.2
87.5°	7.5	7.5	7.9	8.2	8.2	9.1	8.8	9.4	10.7	10.7	11.6
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°	769.8	769.8	769.8	769.8	769.8	769.8	769.8	769.8	769.8	769.8	769.8
2.5°	800.6	797.1	794.6	787.4	783.0	778.9	775.1	771.0	766.6	761.0	757.5
5°	836.1	828.5	817.5	807.5	796.2	786.1	777.9	768.8	758.8	748.4	739.3
7.5°	875.3	861.2	844.2	825.7	808.1	793.3	777.9	763.5	749.3	735.5	722.6
10°	914.6	890.1	867.8	842.3	819.1	796.8	776.7	756.6	739.0	720.7	704.4
12.5°	951.0	921.5	888.8	857.1	826.0	797.1	772.3	747.8	725.1	703.5	684.3
15°	979.0	941.9	903.3	865.6	829.8	799.6	767.2	735.5	712.0	685.6	664.5
17.5°	1011.1	967.1	928.7	883.5	838.9	790.2	755.9	721.4	693.1	667.6	646.6
20°	1032.4	984.0	928.7	877.5	831.7	788.0	746.8	707.2	677.4	647.9	622.4
22.5°	1049.4	999.4	938.5	885.1	827.6	774.8	730.2	691.2	656.0	628.1	603.9
25°	1058.2	997.2	939.1	874.4	816.9	766.3	716.0	673.0	637.5	606.4	585.6
27.5°	1058.5	996.0	927.2	863.1	801.5	746.8	697.2	654.8	614.9	585.0	560.2
30°	1056.9	987.8	915.2	845.2	783.9	728.0	676.1	632.1	595.7	564.0	540.4
32.5°	1046.9	976.5	897.3	823.8	757.2	701.0	653.2	609.5	570.6	541.7	516.8
35°	1024.3	951.7	872.2	796.5	733.3	674.9	627.7	583.8	548.9	517.5	492.0
37.5°	995.3	927.5	846.7	767.6	699.4	644.1	599.8	558.3	521.9	493.0	467.5
40°	958.9	895.1	815.6	733.3	665.1	609.2	567.4	528.8	497.7	468.1	443.3
42.5°	908.9	859.9	778.2	698.1	626.8	574.0	533.5	501.4	469.4	442.7	417.9
45°	855.5	810.9	738.3	658.9	590.4	536.0	498.0	468.5	441.1	414.1	394.0
47.5°	796.5	760.0	692.8	615.2	547.6	499.6	462.2	435.8	410.6	389.9	369.8
50°	726.1	706.9	644.1	573.7	508.0	458.7	427.9	400.9	382.4	362.3	343.4
52.5°	660.7	645.3	594.1	525.0	465.3	422.0	389.0	367.6	349.4	334.6	319.5
55°	589.7	581.9	538.5	478.8	424.8	381.4	353.1	333.7	319.2	305.4	294.4
57.5°	524.4	523.8	485.4	434.2	381.4	344.7	317.6	301.6	289.1	279.3	269.9
60°	457.5	462.8	431.4	384.6	342.8	308.2	283.7	269.3	260.8	251.7	243.8
62.5°	396.8	405.0	376.4	339.6	298.5	270.2	251.4	240.4	230.9	224.3	218.4
65°	338.7	349.1	325.8	292.8	261.4	234.7	218.7	208.3	201.1	197.3	193.2
67.5°	287.5	293.1	277.4	251.7	225.6	202.3	189.1	180.0	173.7	172.2	167.5
70°	236.3	242.9	231.9	208.3	188.2	171.2	159.3	152.1	148.3	146.1	143.0
72.5°	195.1	197.9	186.9	170.6	154.6	140.4	131.6	126.3	121.9	121.0	119.4
75°	152.7	156.8	148.0	135.4	122.2	112.2	105.6	101.2	99.0	97.4	97.4
77.5°	115.3	118.8	113.7	102.7	94.9	86.1	81.7	77.6	76.7	75.1	75.7
80°	82.0	83.6	80.7	73.2	66.3	61.6	57.8	55.6	55.3	54.0	55.3
82.5°	54.4	54.7	51.5	48.1	42.7	40.2	37.7	36.8	36.4	36.4	35.8
85°	30.2	30.8	28.6	26.4	24.5	22.3	21.7	21.1	20.4	21.4	22.0
87.5°	11.6	11.9	11.6	10.7	10.1	9.4	9.1	9.7	8.8	9.4	9.7
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°	769.8	769.8	769.8	769.8	769.8	769.8	769.8	769.8	769.8	769.8	769.8
2.5°	752.2	749.7	745.9	739.6	735.2	730.5	728.6	729.2	727.3	724.8	725.5
5°	732.4	725.1	718.9	710.1	701.9	695.0	692.8	690.0	687.4	685.9	684.3
7.5°	711.3	701.3	691.8	683.0	673.6	664.8	661.4	658.9	657.6	653.2	651.3
10°	691.2	679.6	668.3	657.9	648.2	638.4	635.0	631.8	627.4	625.5	623.3
12.5°	669.8	658.2	646.0	633.4	623.7	615.8	609.8	607.6	603.2	601.4	600.1
15°	649.1	635.0	625.2	615.5	600.7	591.9	589.4	581.6	579.0	575.3	572.8
17.5°	628.4	615.2	600.7	589.4	580.3	569.3	563.3	559.9	555.2	551.7	547.0
20°	608.0	592.6	581.2	567.1	557.1	547.0	539.5	536.3	532.2	527.5	520.9
22.5°	588.2	571.2	560.2	547.0	534.4	522.8	516.5	512.1	504.0	503.0	497.0
25°	564.9	549.8	535.4	521.6	509.3	497.7	493.6	486.7	483.8	478.2	477.3
27.5°	542.9	526.9	511.2	496.1	485.4	477.3	470.0	465.6	462.8	458.4	458.7
30°	520.0	502.4	487.6	473.8	462.2	454.3	449.6	447.4	443.3	442.7	440.5
32.5°	495.5	479.5	464.1	451.8	439.9	433.0	430.8	428.6	426.0	426.4	425.7
35°	471.0	456.8	440.5	429.2	419.4	415.4	411.9	411.3	410.3	411.0	411.0
37.5°	447.1	431.7	418.2	407.8	402.2	396.5	394.9	394.6	394.9	395.6	397.1
40°	423.8	409.7	396.5	388.0	381.7	379.2	377.0	378.0	379.2	381.4	383.3
42.5°	400.6	387.1	376.1	367.6	361.6	360.4	360.7	362.6	362.9	366.0	369.5
45°	376.1	364.5	354.1	347.5	343.7	342.2	342.8	344.7	346.9	351.3	355.7
47.5°	353.5	343.1	334.0	327.4	324.6	323.9	325.2	327.7	332.7	337.1	342.2
50°	330.5	321.1	312.6	306.6	306.3	304.1	307.0	310.1	316.1	322.0	329.6
52.5°	307.9	298.8	291.6	286.9	285.6	285.6	289.1	294.7	300.0	307.9	314.8
55°	284.3	276.2	269.3	267.7	265.8	266.7	270.5	276.2	283.7	292.5	300.0
57.5°	260.1	253.2	248.2	246.0	245.1	248.2	252.6	258.6	268.3	277.1	285.3
60°	237.2	231.2	225.9	225.3	224.6	228.7	234.1	240.4	250.1	258.9	268.9
62.5°	212.7	208.0	204.5	203.6	203.6	207.7	213.6	221.8	230.9	240.4	251.0
65°	187.9	183.8	182.9	181.6	184.4	186.9	192.9	200.8	210.5	220.9	232.2
67.5°	164.9	162.4	160.6	160.6	162.7	167.5	172.8	180.7	190.7	201.7	211.8
70°	142.0	139.5	137.9	139.5	140.8	146.4	152.1	159.6	169.0	179.7	190.4
72.5°	118.1	118.4	118.8	118.4	119.7	125.0	130.7	137.9	147.0	157.4	167.1
75°	97.1	95.5	95.8	96.5	100.5	103.4	109.0	115.9	125.7	135.1	143.3
77.5°	75.4	74.8	76.3	76.3	80.1	83.6	88.3	95.2	103.7	112.2	118.8
80°	55.3	55.6	56.9	57.2	60.3	64.1	69.1	73.8	81.4	87.3	93.6
82.5°	37.4	38.0	39.6	41.8	43.0	45.2	49.6	54.7	60.0	66.3	70.1
85°	21.7	22.6	23.9	25.4	26.7	28.9	32.0	36.1	39.9	43.4	46.5
87.5°	10.7	10.7	11.6	12.3	13.2	14.5	16.7	18.2	20.7	23.2	24.5
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: P243494

CATALOG NUMBER: S124DRP-H575D830-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	769.8	769.8	769.8	769.8
2.5°	724.2	723.9	722.6	723.3
5°	683.4	680.2	679.9	678.6
7.5°	648.2	647.2	647.2	644.7
10°	621.1	618.3	619.0	617.7
12.5°	595.4	593.8	591.9	590.0
15°	566.5	566.5	566.5	561.1
17.5°	543.9	543.5	542.0	541.7
20°	520.3	519.0	515.0	517.8
22.5°	496.4	495.5	492.0	492.6
25°	474.1	473.2	472.5	470.0
27.5°	454.9	455.3	455.9	454.3
30°	440.5	439.5	440.8	439.2
32.5°	427.0	427.0	425.7	426.0
35°	411.6	412.8	413.2	412.8
37.5°	398.1	399.6	400.9	399.6
40°	385.5	386.8	388.0	387.7
42.5°	372.3	374.5	375.5	376.4
45°	359.7	362.6	364.1	364.5
47.5°	346.9	350.3	353.5	353.1
50°	334.3	338.7	341.5	341.2
52.5°	321.7	326.1	329.6	331.2
55°	307.6	313.2	316.4	319.2
57.5°	293.5	299.7	302.9	304.1
60°	277.7	283.4	287.5	288.4
62.5°	260.1	266.1	271.5	272.7
65°	241.9	248.5	252.6	253.2
67.5°	220.9	227.2	231.2	233.1
70°	199.2	203.9	208.3	211.1
72.5°	175.0	180.7	184.7	186.6
75°	149.9	156.2	158.4	159.6
77.5°	123.8	127.6	131.0	131.3
80°	97.7	102.4	103.7	106.8
82.5°	71.9	76.3	75.4	76.7
85°	47.4	49.0	50.0	50.3
87.5°	25.1	26.1	26.7	27.0
90°	0.0	0.0	0.0	0.0

TEST NUMBER: P243494
 CATALOG NUMBER: S124DRP-H575D830-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	17.25	18.82	17.61	19.14	19.45	17.54	19.11	17.90	19.42	19.74
	3H	18.69	20.11	19.07	20.43	20.80	18.92	20.34	19.30	20.67	21.03
	4H	19.21	20.54	19.61	20.89	21.27	19.41	20.74	19.81	21.09	21.46
	6H	19.56	20.79	19.97	21.15	21.54	19.72	20.95	20.13	21.32	21.71
	8H	19.65	20.83	20.08	21.22	21.62	19.81	20.98	20.23	21.37	21.77
	12H	19.70	20.83	20.13	21.21	21.64	19.85	20.98	20.28	21.36	21.79
4H	2H	18.39	19.72	18.78	20.06	20.44	18.33	19.66	18.73	20.01	20.38
	3H	19.89	21.00	20.30	21.40	21.80	20.03	21.14	20.44	21.54	21.94
	4H	20.46	21.46	20.89	21.88	22.32	20.63	21.63	21.06	22.04	22.48
	6H	20.88	21.75	21.33	22.19	22.65	21.03	21.90	21.48	22.34	22.80
	8H	20.99	21.81	21.45	22.25	22.72	21.13	21.95	21.60	22.39	22.86
	12H	21.07	21.80	21.55	22.27	22.75	21.20	21.93	21.68	22.41	22.88
8H	4H	20.89	21.71	21.35	22.15	22.62	20.97	21.78	21.43	22.23	22.69
	6H	21.39	22.06	21.88	22.55	23.03	21.50	22.18	21.99	22.66	23.14
	8H	21.55	22.16	22.06	22.67	23.15	21.66	22.27	22.17	22.78	23.26
	12H	21.67	22.20	22.17	22.70	23.26	21.78	22.31	22.29	22.81	23.37
12H	4H	20.93	21.66	21.41	22.14	22.61	21.00	21.73	21.48	22.21	22.68
	6H	21.45	22.06	21.97	22.57	23.06	21.56	22.17	22.07	22.68	23.16
	8H	21.67	22.20	22.17	22.70	23.26	21.78	22.32	22.29	22.81	23.37