

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: P243611

Luminaire Tested: S124RDRP-H350D930-X4F0-XX-UDD-A-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P243611
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-H350D930-X4F0-XX-UDD-A-W
Description: DEFINE 4 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 3000K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

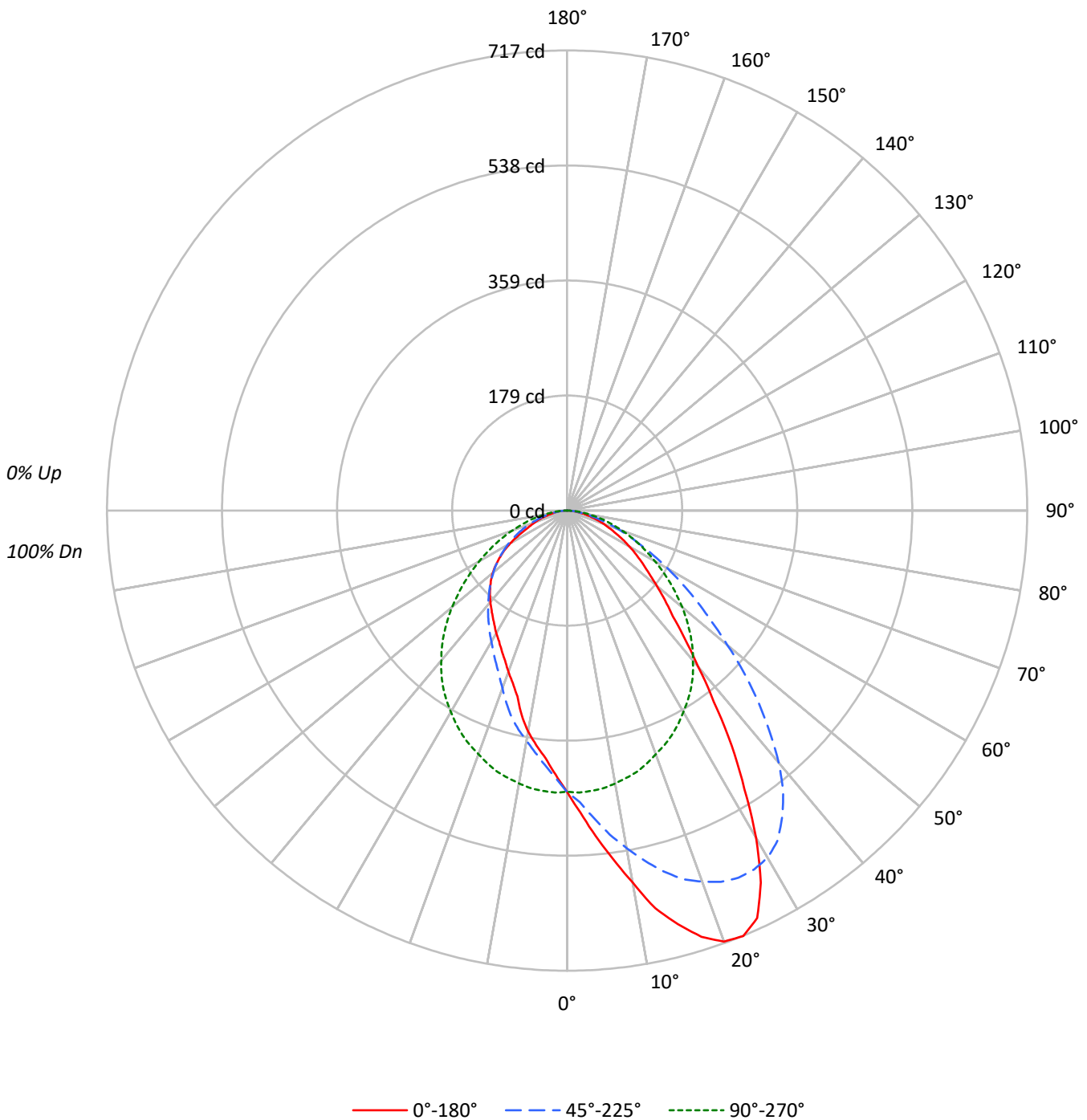
Lumens per Lamp: N/A
Luminaire Lumens: 1131.1 lumens
Efficiency: N/A
Efficacy: 101.0 lumens/watt
Spacing Criteria (0/90/45): 1.27 / 1.23 / 1.39
Luminous Opening: Rectangular (W 3.88' x L: 0.31' x H: 0')
CIE Type: Direct

Input Watts (W): 11.2
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



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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°	3895	3895	3895	3895	3895
5°	4538	4293	3912	3551	3453
10°	5315	4820	3896	3285	3157
15°	6141	5359	3876	3070	2758
20°	6761	5819	3821	2788	2528
25°	6869	6192	3786	2573	2364
30°	6047	6411	3719	2420	2266
35°	4852	6339	3656	2312	2193
40°	3691	5955	3539	2220	2158
45°	2930	5290	3409	2143	2132
50°	2515	4510	3240	2074	2095
55°	2222	3829	3031	2002	1995
60°	1989	3237	2812	1911	1826
65°	1752	2663	2600	1779	1535
70°	1562	2196	2360	1632	1383
75°	1360	1724	2147	1436	1230
80°	1152	1321	1843	1213	1136
85°	1010	1081	1581	1183	1152

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 55°
 Vertical Angle: 45°
 Luminance: 5693 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	42.5	3.8
10°-20°	129.0	11.4
20°-30°	201.3	17.8
30°-40°	224.4	19.8
40°-50°	201.7	17.8
50°-60°	159.4	14.1
60°-70°	105.9	9.4
70°-80°	53.1	4.7
80°-90°	13.8	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°	372.7	33.0
0°-40°	597.2	52.8
0°-60°	958.3	84.7
0°-90°	1131.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1131.1	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	438	438	438	438	438	
5°	509	481	438	398	387	51
15°	667	582	421	334	300	190
25°	700	631	386	262	241	313
35°	447	584	337	213	202	278
45°	233	421	271	170	170	185
55°	143	247	196	129	129	129
65°	83	127	124	85	73	83
75°	40	50	62	42	36	42
85°	10	11	16	12	11	11
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°	438.2	438.2	438.2	438.2	438.2	438.2	438.2	438.2	438.2	438.2	438.2
2.5°	470.7	469.0	468.8	466.6	466.4	464.2	463.5	461.6	457.9	455.0	455.1
5°	508.6	507.2	507.0	504.8	504.1	501.4	497.1	492.0	486.0	481.1	477.8
7.5°	547.5	549.8	547.3	547.3	542.3	539.1	530.7	526.5	516.2	509.1	501.6
10°	588.8	591.0	590.0	587.9	581.4	574.8	566.1	557.7	545.2	534.0	526.5
12.5°	634.8	628.2	632.4	626.1	620.8	610.3	601.9	585.2	575.3	558.9	544.2
15°	667.3	664.7	664.5	660.3	654.5	642.9	633.8	616.4	599.5	582.3	565.7
17.5°	696.3	696.6	694.2	687.4	679.9	668.6	656.3	640.8	621.5	602.4	582.8
20°	714.7	714.9	713.2	709.6	701.4	691.2	678.5	658.2	636.4	615.2	595.6
22.5°	717.4	717.9	717.4	715.2	709.6	701.2	689.6	672.4	650.4	626.1	602.8
25°	700.4	702.1	702.2	705.3	702.4	699.2	690.6	676.1	655.8	631.3	605.8
27.5°	653.6	658.4	662.8	668.3	673.2	677.7	678.4	670.7	653.3	630.4	606.2
30°	589.1	594.7	603.6	609.4	624.8	634.5	647.6	650.5	642.2	624.6	601.2
32.5°	514.0	520.0	523.4	542.5	564.5	580.4	602.2	615.2	618.5	610.1	591.0
35°	447.1	448.1	450.7	472.4	494.2	518.3	545.4	567.9	583.3	584.2	574.8
37.5°	375.4	376.6	386.7	403.3	422.2	448.7	479.9	512.0	540.1	553.1	550.4
40°	318.1	317.8	328.5	342.8	361.3	388.8	421.0	456.0	486.0	513.2	519.6
42.5°	271.7	272.9	282.1	290.5	308.2	327.5	362.0	398.3	436.9	466.6	486.4
45°	233.1	236.2	242.5	250.4	263.7	281.4	309.6	345.7	385.2	420.8	444.6
47.5°	206.5	207.3	210.6	220.3	229.2	243.5	267.6	298.3	333.3	373.2	404.5
50°	181.9	184.0	185.2	191.0	199.7	213.3	231.9	254.8	289.4	326.1	365.2
52.5°	160.8	162.0	164.2	169.5	176.3	185.8	200.5	220.7	249.5	283.5	320.3
55°	143.4	143.5	145.7	149.5	154.8	162.1	176.1	190.6	216.2	247.1	280.6
57.5°	127.6	126.6	128.7	130.9	136.0	142.3	151.4	166.2	186.2	212.5	242.7
60°	111.9	112.8	112.6	115.2	117.9	124.2	131.9	141.6	158.0	182.1	207.7
62.5°	97.3	97.1	98.8	100.3	102.2	107.3	113.7	121.7	134.5	152.2	177.0
65°	83.3	83.6	85.0	86.2	88.2	91.5	96.2	102.7	113.0	126.6	147.4
67.5°	70.7	71.8	72.5	72.9	74.7	77.1	81.2	86.5	93.5	104.4	121.8
70°	60.1	60.4	60.8	61.9	62.8	64.2	67.2	70.1	76.5	84.5	97.1
72.5°	50.2	49.8	50.9	51.2	51.5	52.9	54.8	56.3	60.4	67.2	75.1
75°	39.6	39.8	39.9	40.4	41.8	42.0	42.8	44.5	47.4	50.2	55.5
77.5°	29.7	30.2	30.0	30.5	31.1	31.6	31.9	33.4	35.5	37.7	40.3
80°	22.5	22.5	22.5	22.9	22.5	23.7	23.7	24.2	24.7	25.8	27.6
82.5°	15.4	15.7	15.9	16.0	16.2	16.2	16.4	16.7	17.4	17.7	18.3
85°	9.9	9.6	9.7	9.7	9.7	9.7	10.1	10.4	10.4	10.6	11.1
87.5°	4.4	4.4	4.4	4.4	4.3	4.4	4.6	4.6	4.8	4.8	5.1
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°	438.2	438.2	438.2	438.2	438.2	438.2	438.2	438.2	438.2	438.2	438.2
2.5°	454.1	453.6	451.0	448.3	445.8	443.2	442.3	439.8	436.7	434.0	430.9
5°	474.4	470.3	464.7	458.9	452.9	447.5	443.2	438.4	433.0	426.5	421.3
7.5°	494.9	487.4	478.2	469.6	459.4	451.2	443.0	436.2	428.3	419.1	412.1
10°	514.9	502.4	491.1	477.7	464.7	453.4	443.0	431.6	421.2	411.3	401.6
12.5°	530.7	518.3	502.1	485.5	468.8	454.1	440.1	426.6	413.7	401.7	391.0
15°	548.8	530.9	510.9	492.7	469.8	451.7	435.7	421.2	406.3	391.8	380.0
17.5°	562.1	541.0	516.2	495.2	473.2	450.7	431.4	413.2	396.1	380.9	368.8
20°	572.4	547.3	522.5	495.9	469.6	446.6	424.9	403.9	386.7	370.2	357.4
22.5°	576.8	550.4	522.9	494.0	466.1	439.9	417.4	395.7	376.3	359.2	344.4
25°	578.7	549.7	521.2	488.4	460.1	433.5	408.4	386.0	366.1	346.8	332.1
27.5°	577.2	546.1	513.3	482.4	450.4	424.2	397.6	374.9	354.1	335.5	319.1
30°	573.1	537.9	505.3	470.7	439.8	412.3	386.4	362.3	341.3	322.4	306.2
32.5°	562.5	528.7	491.7	457.9	424.6	397.5	373.9	350.2	328.9	309.1	293.4
35°	549.3	516.2	477.5	442.2	409.2	381.8	358.0	336.9	315.9	294.9	278.8
37.5°	532.8	499.2	461.8	423.7	391.5	364.9	343.2	321.9	301.0	281.8	263.8
40°	510.4	479.7	442.2	403.9	371.5	345.9	324.6	305.0	286.5	267.6	248.3
42.5°	482.6	459.2	420.5	382.8	351.0	325.6	306.7	289.1	271.3	251.9	234.5
45°	452.9	433.0	397.8	359.7	329.5	304.8	286.7	271.2	254.4	237.2	219.0
47.5°	419.5	404.6	374.2	336.5	304.8	283.6	266.9	252.7	237.6	222.2	204.4
50°	381.8	372.7	346.8	312.5	282.3	260.8	246.9	234.3	221.3	206.0	190.8
52.5°	344.0	342.3	318.1	287.9	259.4	239.4	225.9	214.3	203.8	189.3	176.5
55°	304.4	309.6	289.4	261.6	236.2	216.9	205.0	195.6	186.4	174.1	161.8
57.5°	269.3	275.1	261.3	235.7	212.0	195.6	185.3	176.8	168.8	157.5	149.3
60°	230.4	241.0	233.6	210.2	189.3	174.6	165.0	158.2	151.5	141.8	134.6
62.5°	199.7	207.0	202.7	185.3	166.7	154.8	146.3	139.9	134.6	127.1	120.1
65°	166.7	175.9	173.7	162.3	145.9	135.0	128.5	123.6	118.1	112.1	106.3
67.5°	137.0	146.6	146.1	138.2	126.1	117.1	110.9	107.3	102.9	97.1	93.5
70°	110.2	119.1	119.5	115.5	107.0	98.5	94.0	90.8	87.4	83.1	80.5
72.5°	85.7	93.7	95.1	93.2	87.7	82.1	78.2	75.9	73.0	69.5	67.2
75°	64.0	69.8	73.0	72.2	70.0	66.2	64.0	62.5	59.6	57.0	55.1
77.5°	45.6	50.2	53.4	54.8	53.8	52.2	50.2	49.0	45.9	44.7	43.7
80°	30.5	34.6	37.5	38.4	38.9	38.6	36.7	36.0	34.5	34.0	32.9
82.5°	18.8	21.0	23.0	25.3	26.3	26.3	25.3	25.4	24.1	23.4	23.0
85°	11.4	11.9	12.3	14.0	15.4	15.9	15.4	15.5	15.0	14.5	14.0
87.5°	5.3	5.3	5.5	5.8	6.1	7.2	7.5	8.0	7.3	7.3	6.1
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°	438.2	438.2	438.2	438.2	438.2	438.2	438.2	438.2	438.2	438.2	438.2
2.5°	429.0	426.8	425.1	422.4	420.2	416.6	415.4	415.4	416.1	415.2	416.1
5°	417.8	413.7	409.2	405.3	401.0	398.0	394.9	394.2	393.9	391.8	392.0
7.5°	406.5	401.0	395.4	390.3	385.0	380.2	377.0	375.6	374.4	373.1	371.5
10°	394.4	388.1	381.4	375.6	370.5	364.0	360.8	359.7	356.3	355.6	353.3
12.5°	381.6	375.1	368.4	360.9	356.0	349.7	344.9	342.7	339.4	337.0	333.5
15°	371.5	363.3	354.5	347.1	340.6	333.6	327.1	322.9	318.6	312.0	308.7
17.5°	359.1	349.7	342.0	334.1	324.8	314.5	306.8	300.5	295.9	290.5	287.2
20°	345.6	336.9	327.3	316.2	306.3	294.7	287.7	282.4	278.8	275.6	273.9
22.5°	333.6	323.6	310.4	299.8	286.0	276.8	271.2	267.8	264.3	260.9	259.2
25°	320.7	308.9	292.8	279.9	269.5	262.3	256.8	253.6	250.0	248.0	245.4
27.5°	307.9	292.7	276.6	264.9	256.7	248.3	243.7	241.1	238.4	235.5	233.5
30°	292.3	275.1	261.8	251.0	242.8	235.8	232.4	228.7	226.3	224.6	223.4
32.5°	276.1	259.6	247.4	238.2	230.2	224.9	220.7	218.3	216.2	214.3	213.0
35°	260.9	244.9	234.7	225.8	219.1	213.1	209.9	207.7	206.0	204.4	203.8
37.5°	245.9	232.3	221.2	214.2	207.2	202.4	199.3	197.3	196.3	194.7	194.9
40°	231.1	218.8	209.9	201.9	195.4	191.3	188.9	188.1	186.5	186.0	186.5
42.5°	217.8	206.5	198.0	190.5	184.8	180.9	179.0	177.8	177.3	177.1	177.3
45°	204.8	194.2	186.0	179.9	174.1	170.5	168.9	168.1	167.6	168.4	168.6
47.5°	191.8	182.3	174.9	167.8	163.0	160.4	158.9	158.2	158.7	159.1	160.2
50°	179.0	170.1	162.5	156.1	152.4	150.0	149.5	148.3	149.2	149.7	150.5
52.5°	166.0	158.0	151.2	145.2	141.3	139.8	138.6	138.1	139.3	139.3	140.1
55°	152.9	145.9	139.6	134.1	131.1	129.2	128.3	127.6	128.3	128.5	128.3
57.5°	140.6	134.0	127.3	122.7	120.1	118.1	117.2	116.9	116.7	117.4	117.2
60°	127.6	121.3	116.0	111.3	108.7	107.5	105.6	106.0	106.0	106.0	104.3
62.5°	114.7	108.4	103.8	100.5	97.4	95.4	95.1	94.5	93.5	93.3	91.1
65°	101.4	96.6	92.7	89.4	86.4	84.6	84.1	82.6	81.4	79.2	77.6
67.5°	89.1	85.7	81.1	78.3	75.8	73.7	71.8	70.7	68.3	66.0	64.7
70°	76.8	73.2	70.1	67.2	64.7	62.8	60.6	58.4	56.8	55.5	54.4
72.5°	64.5	61.4	58.9	56.1	53.4	51.5	49.8	48.1	47.4	46.8	46.2
75°	53.1	50.2	47.8	45.6	44.0	41.8	41.0	40.3	39.6	38.7	37.7
77.5°	42.0	39.8	37.9	36.0	34.6	33.4	32.8	30.7	29.0	28.7	28.3
80°	31.2	29.5	28.3	27.0	25.4	23.7	23.2	22.5	22.2	22.2	22.4
82.5°	21.8	20.8	19.5	18.3	17.7	17.1	17.1	16.9	16.7	16.9	16.9
85°	13.3	11.9	11.6	11.4	11.6	11.6	11.6	11.6	11.4	11.6	11.3
87.5°	5.8	6.3	6.5	6.0	6.1	5.8	6.0	6.0	6.0	6.1	6.0
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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CATALOG NUMBER: S124RDRP-H350D930-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	438.2	438.2	438.2	438.2
2.5°	415.0	415.0	413.3	412.0
5°	391.7	389.4	389.1	387.0
7.5°	369.8	369.5	368.6	368.6
10°	352.4	351.2	350.0	349.8
12.5°	327.8	329.5	327.5	327.0
15°	306.3	305.0	303.3	299.7
17.5°	286.4	283.8	283.1	281.6
20°	270.7	268.8	268.1	267.2
22.5°	255.8	255.5	253.4	252.9
25°	244.9	243.2	241.8	241.0
27.5°	232.9	231.7	231.1	229.7
30°	222.0	221.7	220.8	220.8
32.5°	212.1	211.1	211.1	210.9
35°	203.1	203.4	202.4	202.1
37.5°	194.5	194.0	194.2	193.9
40°	186.2	185.8	185.8	186.0
42.5°	177.7	177.8	178.2	178.2
45°	169.1	169.3	169.6	169.6
47.5°	161.1	160.8	161.1	160.8
50°	150.9	151.9	151.7	151.5
52.5°	140.4	140.1	140.8	140.6
55°	129.2	128.7	129.4	128.7
57.5°	116.6	116.7	116.7	116.4
60°	103.9	103.4	102.7	102.7
62.5°	89.3	87.7	86.7	87.4
65°	75.1	73.9	73.6	73.0
67.5°	63.8	62.5	61.9	61.8
70°	54.1	53.4	53.2	53.2
72.5°	45.9	45.9	45.4	45.1
75°	37.4	36.7	35.8	35.8
77.5°	28.0	27.8	27.6	27.6
80°	21.8	21.8	22.0	22.2
82.5°	16.4	16.6	16.7	16.7
85°	11.1	11.1	11.3	11.3
87.5°	6.0	6.0	6.0	5.8
90°	0.0	0.0	0.0	0.0



TEST NUMBER: P243611
 CATALOG NUMBER: S124RDRP-H350D930-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	14.06	15.60	14.43	15.91	16.23	15.76	17.30	16.13	17.61	17.92
	3H	15.30	16.67	15.68	17.00	17.36	17.24	18.62	17.62	18.95	19.31
	4H	15.73	17.02	16.13	17.37	17.75	17.79	19.08	18.18	19.43	19.80
	6H	16.01	17.20	16.42	17.57	17.96	18.17	19.37	18.59	19.73	20.13
	8H	16.09	17.23	16.52	17.62	18.02	18.29	19.43	18.72	19.82	20.22
	12H	16.15	17.24	16.58	17.62	18.05	18.37	19.46	18.80	19.84	20.27
4H	2H	15.27	16.56	15.67	16.91	17.29	16.29	17.58	16.69	17.93	18.31
	3H	16.54	17.61	16.95	18.01	18.41	18.06	19.14	18.48	19.54	19.94
	4H	17.01	17.98	17.44	18.39	18.83	18.72	19.69	19.16	20.10	20.54
	6H	17.34	18.18	17.80	18.63	19.09	19.22	20.06	19.68	20.50	20.96
	8H	17.45	18.23	17.91	18.68	19.14	19.38	20.16	19.84	20.61	21.07
	12H	17.52	18.22	18.00	18.70	19.17	19.49	20.19	19.97	20.67	21.14
8H	4H	17.42	18.21	17.89	18.65	19.12	18.85	19.64	19.31	20.08	20.55
	6H	17.82	18.47	18.32	18.96	19.44	19.45	20.10	19.95	20.59	21.07
	8H	17.97	18.55	18.48	19.06	19.55	19.67	20.25	20.18	20.76	21.25
	12H	18.09	18.60	18.60	19.09	19.66	19.85	20.36	20.36	20.85	21.42
12H	4H	17.47	18.17	17.95	18.65	19.12	18.84	19.54	19.32	20.02	20.49
	6H	17.88	18.46	18.39	18.97	19.46	19.44	20.03	19.96	20.54	21.02
	8H	18.07	18.58	18.58	19.08	19.64	19.70	20.22	20.21	20.71	21.27