

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: P243591

Luminaire Tested: S124RDRP-H350D927-X4F0-XX-UDD-A-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P243591
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-H350D927-X4F0-XX-UDD-A-W
Description: DEFINE 4 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 2700K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

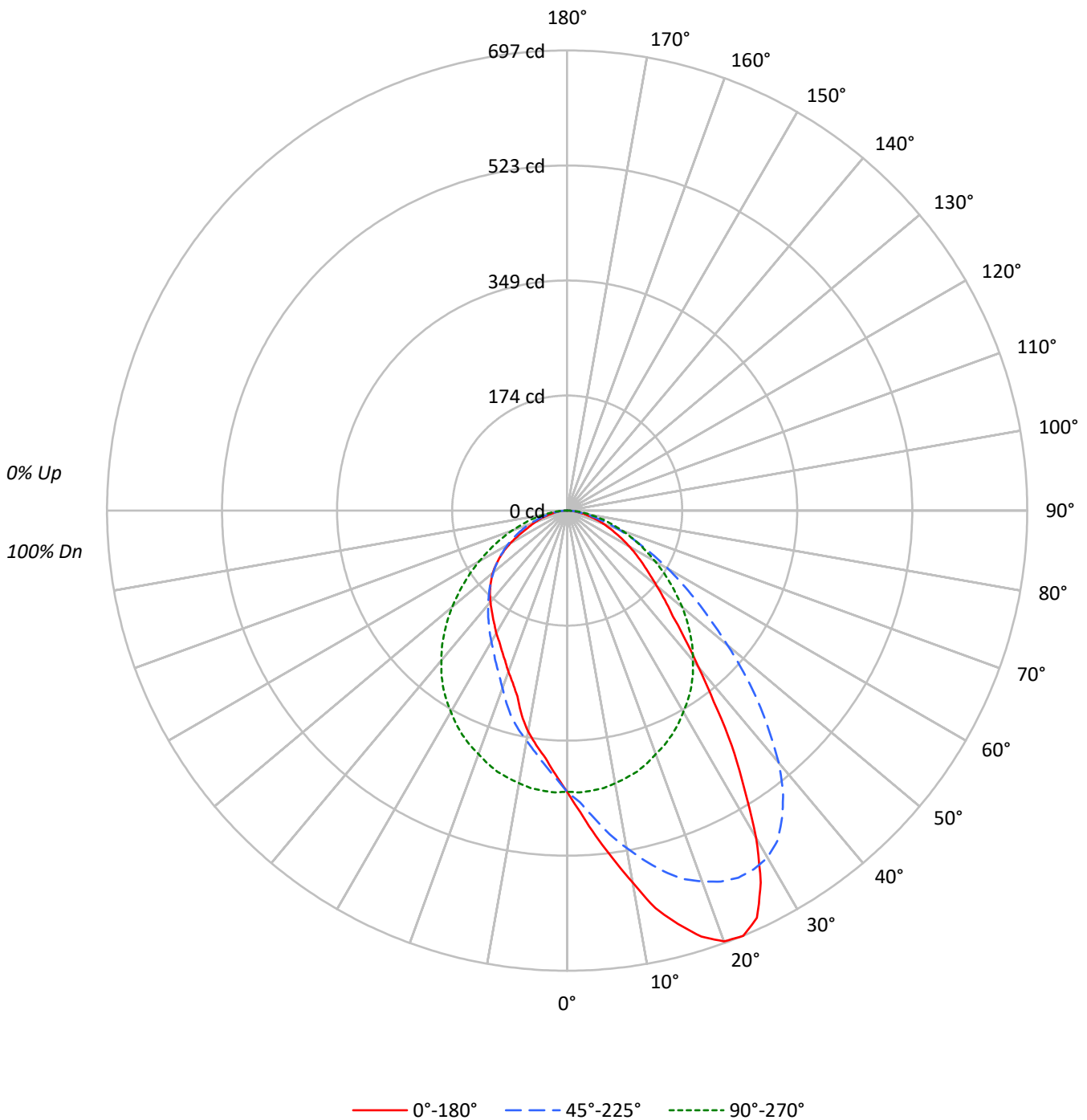
Lumens per Lamp: N/A
Luminaire Lumens: 1099.0 lumens
Efficiency: N/A
Efficacy: 98.1 lumens/watt
Spacing Criteria (0/90/45): 1.27 / 1.23 / 1.39
Luminous Opening: Rectangular (W 3.88' x L: 0.31' x H: 0')
CIE Type: Direct

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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CATALOG NUMBER: S124RDRP-H350D927-X4F0-XX-UDD-A-W

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	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°	3785	3785	3785	3785	3785
5°	4409	4171	3801	3450	3356
10°	5164	4683	3785	3193	3068
15°	5966	5207	3766	2983	2680
20°	6569	5655	3713	2709	2457
25°	6674	6016	3679	2500	2296
30°	5875	6229	3613	2353	2203
35°	4714	6159	3552	2247	2130
40°	3587	5786	3438	2157	2097
45°	2847	5140	3312	2083	2072
50°	2445	4382	3149	2016	2036
55°	2159	3721	2944	1945	1937
60°	1934	3145	2732	1858	1774
65°	1702	2587	2526	1729	1493
70°	1518	2134	2292	1585	1344
75°	1322	1673	2085	1394	1195
80°	1121	1280	1792	1177	1106
85°	979	1050	1540	1152	1112

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 55°
 Vertical Angle: 45°
 Luminance: 5532 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	41.3	3.8
10°-20°	125.3	11.4
20°-30°	195.5	17.8
30°-40°	218.1	19.8
40°-50°	196.0	17.8
50°-60°	154.9	14.1
60°-70°	102.9	9.4
70°-80°	51.6	4.7
80°-90°	13.4	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°	362.2	33.0
0°-40°	580.2	52.8
0°-60°	931.1	84.7
0°-90°	1099.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1099.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	426	426	426	426	426	
5°	494	467	426	387	376	49
15°	648	566	409	324	291	184
25°	680	613	375	255	234	305
35°	434	568	327	207	196	270
45°	226	409	264	166	165	179
55°	139	240	190	126	125	126
65°	81	123	120	82	71	81
75°	38	49	61	41	35	41
85°	10	10	15	11	11	11
90°	0	0	0	0	0	



TEST NUMBER: P243591

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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	425.8	425.8	425.8	425.8	425.8	425.8	425.8	425.8	425.8	425.8	425.8
2.5°	457.3	455.7	455.5	453.3	453.2	451.0	450.4	448.5	444.9	442.1	442.2
5°	494.1	492.8	492.6	490.5	489.8	487.2	483.0	478.0	472.2	467.4	464.3
7.5°	531.9	534.3	531.8	531.8	527.0	523.8	515.7	511.5	501.6	494.6	487.3
10°	572.1	574.2	573.2	571.2	564.9	558.5	550.0	541.9	529.8	518.8	511.5
12.5°	616.8	610.4	614.5	608.4	603.2	593.0	584.8	568.6	559.0	543.0	528.8
15°	648.3	645.9	645.7	641.5	635.9	624.6	615.8	598.9	582.5	565.8	549.7
17.5°	676.5	676.9	674.5	667.9	660.6	649.7	637.7	622.6	603.9	585.3	566.3
20°	694.4	694.6	692.9	689.5	681.5	671.6	659.3	639.6	618.3	597.8	578.7
22.5°	697.1	697.6	697.1	694.9	689.5	681.3	670.1	653.3	631.9	608.4	585.7
25°	680.5	682.2	682.3	685.3	682.5	679.3	671.1	657.0	637.2	613.4	588.6
27.5°	635.1	639.7	644.0	649.3	654.1	658.5	659.1	651.7	634.7	612.5	589.0
30°	572.4	577.9	586.5	592.1	607.1	616.5	629.3	632.1	624.0	606.9	584.2
32.5°	499.4	505.2	508.6	527.1	548.5	563.9	585.2	597.8	600.9	592.8	574.2
35°	434.4	435.4	437.9	459.0	480.2	503.6	529.9	551.8	566.8	567.6	558.5
37.5°	364.8	366.0	375.7	391.8	410.2	435.9	466.3	497.4	524.8	537.4	534.8
40°	309.1	308.7	319.2	333.1	351.0	377.7	409.1	443.1	472.2	498.6	504.9
42.5°	264.0	265.1	274.1	282.2	299.5	318.2	351.7	387.0	424.5	453.3	472.6
45°	226.5	229.5	235.6	243.3	256.2	273.4	300.8	335.9	374.2	408.9	432.0
47.5°	200.6	201.5	204.6	214.1	222.7	236.6	260.0	289.8	323.8	362.6	393.0
50°	176.8	178.7	179.9	185.5	194.0	207.3	225.3	247.6	281.2	316.9	354.8
52.5°	156.2	157.4	159.5	164.7	171.3	180.6	194.8	214.4	242.4	275.4	311.2
55°	139.3	139.5	141.6	145.3	150.4	157.5	171.1	185.2	210.1	240.1	272.6
57.5°	124.0	123.0	125.0	127.2	132.2	138.3	147.1	161.5	180.9	206.4	235.8
60°	108.8	109.6	109.4	111.9	114.6	120.7	128.2	137.6	153.5	176.9	201.8
62.5°	94.5	94.3	96.0	97.5	99.3	104.3	110.4	118.2	130.7	147.9	172.0
65°	80.9	81.2	82.6	83.7	85.7	88.9	93.5	99.8	109.8	123.0	143.3
67.5°	68.6	69.8	70.5	70.8	72.6	74.9	78.9	84.1	90.9	101.5	118.4
70°	58.4	58.7	59.0	60.2	61.0	62.3	65.3	68.2	74.3	82.1	94.3
72.5°	48.7	48.4	49.4	49.7	50.1	51.4	53.2	54.7	58.7	65.3	73.0
75°	38.5	38.6	38.8	39.3	40.6	40.8	41.6	43.3	46.1	48.7	53.9
77.5°	28.9	29.3	29.2	29.7	30.2	30.7	31.0	32.5	34.5	36.6	39.1
80°	21.9	21.9	21.9	22.2	21.9	23.0	23.0	23.5	24.0	25.0	26.9
82.5°	14.9	15.3	15.4	15.6	15.8	15.8	15.9	16.2	16.9	17.2	17.7
85°	9.6	9.3	9.5	9.5	9.5	9.5	9.8	10.1	10.1	10.3	10.8
87.5°	4.3	4.3	4.3	4.3	4.1	4.3	4.5	4.5	4.6	4.6	5.0
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°	425.8	425.8	425.8	425.8	425.8	425.8	425.8	425.8	425.8	425.8	425.8
2.5°	441.2	440.7	438.3	435.6	433.1	430.6	429.8	427.3	424.3	421.7	418.7
5°	461.0	457.0	451.5	445.9	440.1	434.8	430.6	426.0	420.7	414.4	409.4
7.5°	480.9	473.6	464.6	456.3	446.4	438.4	430.5	423.8	416.2	407.2	400.4
10°	500.3	488.2	477.2	464.1	451.5	440.6	430.5	419.3	409.2	399.6	390.2
12.5°	515.7	503.6	487.8	471.7	455.5	441.2	427.6	414.5	401.9	390.3	379.9
15°	533.3	515.9	496.5	478.7	456.5	438.9	423.3	409.2	394.8	380.7	369.3
17.5°	546.2	525.6	501.6	481.2	459.8	437.9	419.2	401.4	384.9	370.1	358.3
20°	556.1	531.8	507.7	481.9	456.3	433.9	412.9	392.5	375.7	359.7	347.2
22.5°	560.5	534.8	508.1	480.0	452.8	427.5	405.6	384.5	365.6	349.0	334.6
25°	562.3	534.1	506.4	474.6	447.0	421.2	396.8	375.1	355.7	336.9	322.7
27.5°	560.8	530.6	498.8	468.8	437.6	412.2	386.4	364.3	344.1	326.0	310.1
30°	556.8	522.7	491.0	457.3	427.3	400.6	375.4	352.0	331.6	313.2	297.5
32.5°	546.5	513.7	477.7	444.9	412.6	386.2	363.3	340.3	319.5	300.3	285.0
35°	533.8	501.6	464.0	429.6	397.6	370.9	347.9	327.3	306.9	286.5	270.9
37.5°	517.7	485.0	448.7	411.7	380.4	354.5	333.5	312.7	292.5	273.8	256.4
40°	496.0	466.1	429.6	392.5	361.0	336.1	315.4	296.3	278.4	260.0	241.3
42.5°	468.9	446.2	408.6	371.9	341.1	316.4	298.0	280.9	263.6	244.7	227.8
45°	440.1	420.7	386.5	349.5	320.2	296.1	278.6	263.5	247.2	230.5	212.7
47.5°	407.6	393.1	363.6	327.0	296.1	275.6	259.3	245.6	230.8	215.9	198.6
50°	370.9	362.1	336.9	303.6	274.3	253.4	239.9	227.7	215.1	200.1	185.4
52.5°	334.3	332.6	309.1	279.7	252.0	232.6	219.5	208.3	198.0	183.9	171.5
55°	295.8	300.8	281.2	254.2	229.5	210.8	199.1	190.0	181.1	169.1	157.2
57.5°	261.7	267.3	253.9	229.0	205.9	190.0	180.1	171.8	164.0	153.0	145.1
60°	223.9	234.1	227.0	204.3	183.9	169.6	160.3	153.7	147.2	137.8	130.8
62.5°	194.0	201.1	197.0	180.1	162.0	150.4	142.1	136.0	130.8	123.5	116.7
65°	162.0	171.0	168.8	157.7	141.8	131.2	124.9	120.1	114.7	108.9	103.3
67.5°	133.2	142.4	141.9	134.3	122.5	113.7	107.8	104.3	100.0	94.3	90.9
70°	107.1	115.7	116.1	112.3	104.0	95.7	91.4	88.2	84.9	80.8	78.3
72.5°	83.2	91.0	92.4	90.5	85.2	79.8	75.9	73.8	71.0	67.5	65.3
75°	62.2	67.8	71.0	70.1	68.0	64.3	62.2	60.7	57.9	55.4	53.6
77.5°	44.3	48.7	51.9	53.2	52.2	50.7	48.7	47.6	44.6	43.4	42.4
80°	29.7	33.7	36.5	37.3	37.8	37.5	35.7	35.0	33.5	33.0	32.0
82.5°	18.2	20.4	22.4	24.5	25.5	25.5	24.5	24.7	23.4	22.7	22.4
85°	11.1	11.6	11.9	13.6	14.9	15.4	14.9	15.1	14.6	14.1	13.6
87.5°	5.1	5.1	5.3	5.6	6.0	7.0	7.3	7.8	7.1	7.1	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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CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	425.8	425.8	425.8	425.8	425.8	425.8	425.8	425.8	425.8	425.8	425.8
2.5°	416.9	414.7	413.0	410.4	408.2	404.8	403.6	403.6	404.3	403.4	404.3
5°	405.9	401.9	397.6	393.8	389.7	386.7	383.7	383.0	382.7	380.7	380.9
7.5°	395.0	389.7	384.2	379.2	374.1	369.4	366.3	365.0	363.8	362.5	361.0
10°	383.2	377.1	370.6	365.0	360.0	353.7	350.5	349.5	346.2	345.6	343.2
12.5°	370.8	364.5	358.0	350.7	345.9	339.8	335.1	333.0	329.8	327.5	324.0
15°	361.0	353.0	344.4	337.3	331.0	324.2	317.9	313.7	309.6	303.1	300.0
17.5°	348.9	339.8	332.3	324.7	315.5	305.6	298.1	292.0	287.5	282.2	279.1
20°	335.8	327.3	318.0	307.3	297.6	286.4	279.6	274.4	270.9	267.8	266.1
22.5°	324.2	314.4	301.6	291.3	277.9	269.0	263.5	260.2	256.8	253.5	251.9
25°	311.6	300.1	284.5	271.9	261.8	254.9	249.6	246.4	242.9	240.9	238.4
27.5°	299.1	284.4	268.8	257.3	249.4	241.3	236.8	234.3	231.6	228.8	226.8
30°	284.0	267.3	254.4	243.9	236.0	229.2	225.8	222.2	219.9	218.2	217.1
32.5°	268.3	252.2	240.4	231.5	223.7	218.5	214.4	212.1	210.1	208.3	206.9
35°	253.5	237.9	228.0	219.4	212.9	207.1	204.0	201.8	200.1	198.6	198.0
37.5°	238.9	225.7	214.9	208.1	201.3	196.7	193.7	191.7	190.7	189.2	189.4
40°	224.5	212.6	204.0	196.2	189.9	185.9	183.6	182.7	181.2	180.7	181.2
42.5°	211.6	200.6	192.3	185.1	179.6	175.8	173.9	172.8	172.3	172.1	172.3
45°	199.0	188.7	180.7	174.8	169.1	165.7	164.2	163.3	162.8	163.7	163.8
47.5°	186.4	177.1	170.0	163.0	158.4	155.9	154.4	153.7	154.2	154.5	155.7
50°	173.9	165.3	157.9	151.7	148.1	145.8	145.3	144.1	144.9	145.4	146.2
52.5°	161.3	153.5	146.9	141.1	137.3	135.8	134.6	134.1	135.3	135.3	136.1
55°	148.6	141.8	135.6	130.3	127.3	125.5	124.7	124.0	124.7	124.9	124.7
57.5°	136.6	130.2	123.7	119.2	116.7	114.7	113.9	113.6	113.4	114.1	113.9
60°	124.0	117.9	112.8	108.1	105.6	104.5	102.6	103.0	103.0	103.0	101.3
62.5°	111.4	105.3	100.8	97.7	94.7	92.7	92.4	91.9	90.9	90.7	88.5
65°	98.5	93.9	90.0	86.9	83.9	82.2	81.7	80.3	79.1	76.9	75.4
67.5°	86.6	83.2	78.8	76.1	73.6	71.6	69.8	68.6	66.3	64.2	62.8
70°	74.6	71.1	68.2	65.3	62.8	61.0	58.9	56.7	55.2	53.9	52.9
72.5°	62.7	59.7	57.2	54.6	51.9	50.1	48.4	46.8	46.1	45.4	44.9
75°	51.6	48.7	46.4	44.3	42.8	40.6	39.8	39.1	38.5	37.6	36.6
77.5°	40.8	38.6	36.8	35.0	33.7	32.5	31.8	29.8	28.2	27.9	27.5
80°	30.3	28.7	27.5	26.2	24.7	23.0	22.6	21.9	21.6	21.6	21.7
82.5°	21.2	20.2	18.9	17.7	17.2	16.6	16.6	16.4	16.2	16.4	16.4
85°	12.9	11.6	11.3	11.1	11.3	11.3	11.3	11.3	11.1	11.3	10.9
87.5°	5.6	6.1	6.3	5.8	6.0	5.6	5.8	5.8	5.8	6.0	5.8
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: P243591

CATALOG NUMBER: S124RDRP-H350D927-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	425.8	425.8	425.8	425.8
2.5°	403.3	403.3	401.6	400.3
5°	380.5	378.4	378.1	376.1
7.5°	359.3	359.0	358.2	358.2
10°	342.4	341.2	340.1	339.9
12.5°	318.5	320.2	318.2	317.7
15°	297.6	296.3	294.7	291.2
17.5°	278.2	275.8	275.1	273.6
20°	263.0	261.2	260.5	259.7
22.5°	248.6	248.2	246.2	245.7
25°	237.9	236.3	235.0	234.1
27.5°	226.3	225.2	224.5	223.2
30°	215.7	215.4	214.6	214.6
32.5°	206.1	205.1	205.1	204.9
35°	197.3	197.7	196.7	196.3
37.5°	189.0	188.5	188.7	188.4
40°	180.9	180.6	180.6	180.7
42.5°	172.6	172.8	173.1	173.1
45°	164.3	164.5	164.8	164.8
47.5°	156.5	156.2	156.5	156.2
50°	146.6	147.6	147.4	147.2
52.5°	136.5	136.1	136.8	136.6
55°	125.5	125.0	125.7	125.0
57.5°	113.3	113.4	113.4	113.1
60°	101.0	100.5	99.8	99.8
62.5°	86.7	85.2	84.2	84.9
65°	73.0	71.8	71.5	71.0
67.5°	62.0	60.7	60.2	60.0
70°	52.6	51.9	51.7	51.7
72.5°	44.6	44.6	44.1	43.8
75°	36.3	35.7	34.8	34.8
77.5°	27.2	27.0	26.9	26.9
80°	21.2	21.2	21.4	21.6
82.5°	15.9	16.1	16.2	16.2
85°	10.8	10.8	10.9	10.9
87.5°	5.8	5.8	5.8	5.6
90°	0.0	0.0	0.0	0.0



TEST NUMBER: P243591
 CATALOG NUMBER: S124RDRP-H350D927-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	13.97	15.50	14.33	15.81	16.13	15.66	17.19	16.03	17.51	17.82
	3H	15.20	16.58	15.58	16.90	17.27	17.14	18.52	17.52	18.85	19.21
	4H	15.63	16.92	16.03	17.27	17.65	17.69	18.98	18.08	19.33	19.70
	6H	15.91	17.10	16.32	17.47	17.86	18.07	19.27	18.48	19.63	20.02
	8H	15.99	17.13	16.42	17.52	17.92	18.19	19.33	18.62	19.72	20.12
	12H	16.05	17.14	16.48	17.52	17.95	18.27	19.36	18.70	19.74	20.17
4H	2H	15.17	16.47	15.57	16.81	17.19	16.19	17.48	16.59	17.83	18.21
	3H	16.44	17.52	16.85	17.92	18.32	17.97	19.04	18.38	19.44	19.84
	4H	16.91	17.88	17.35	18.29	18.73	18.62	19.59	19.06	20.00	20.44
	6H	17.25	18.09	17.70	18.53	18.99	19.12	19.96	19.58	20.40	20.86
	8H	17.35	18.13	17.81	18.58	19.04	19.28	20.06	19.74	20.51	20.97
	12H	17.42	18.13	17.91	18.60	19.08	19.39	20.09	19.87	20.57	21.04
8H	4H	17.32	18.11	17.79	18.55	19.02	18.75	19.54	19.21	19.98	20.45
	6H	17.72	18.37	18.22	18.86	19.34	19.35	20.00	19.84	20.49	20.97
	8H	17.87	18.45	18.38	18.96	19.45	19.57	20.15	20.08	20.66	21.15
	12H	17.99	18.51	18.50	19.00	19.56	19.75	20.26	20.26	20.75	21.32
12H	4H	17.37	18.07	17.85	18.55	19.02	18.74	19.44	19.22	19.92	20.39
	6H	17.78	18.36	18.29	18.87	19.36	19.34	19.93	19.85	20.43	20.92
	8H	17.97	18.48	18.48	18.98	19.54	19.60	20.12	20.11	20.61	21.17