

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: P243257

Luminaire Tested: S122RDRP-H290D835-X4F0-XX-UDD-A-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P243257
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-68)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S122RDRP-H290D835-X4F0-XX-UDD-A-W
Description: DEFINE 2 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 3500K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

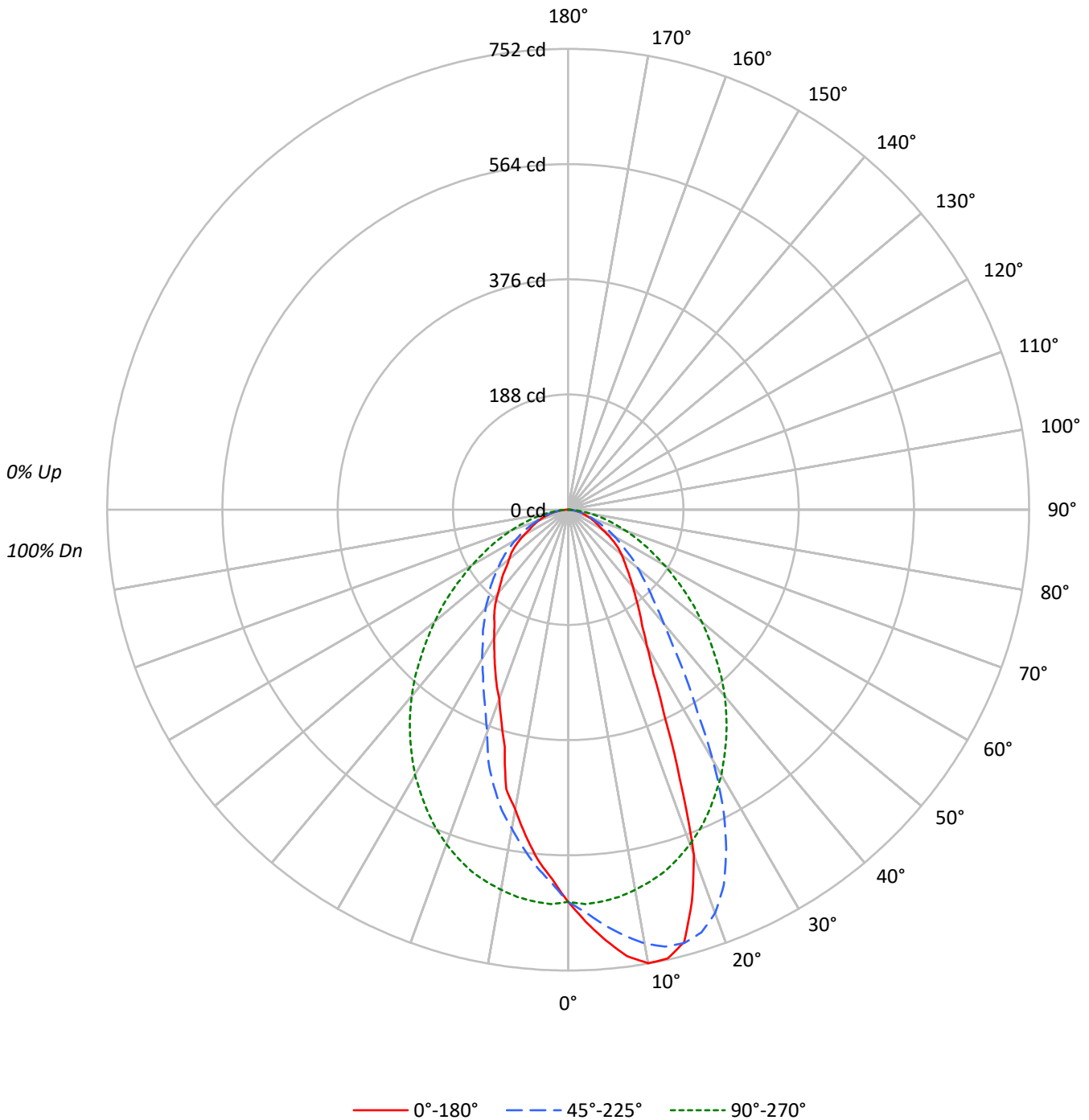
Lumens per Lamp: N/A
Luminaire Lumens: 1078.1 lumens
Efficiency: N/A
Efficacy: 96.3 lumens/watt
Spacing Criteria (0/90/45): 0.81 / 1.17 / 0.99
Luminous Opening: Rectangular (W 3.88' x L: 0.15' x H: 0')
CIE Type: Direct

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	0	
RCR																						
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100				100
1	110	106	103	100	108	104	101	98	100	97	95	96	94	92	93	91	89				87	
2	102	95	89	84	100	93	88	83	90	85	81	86	83	79	84	80	78				76	
3	94	85	78	72	92	84	77	72	81	75	70	78	73	69	76	72	68				66	
4	87	77	69	63	85	76	68	63	73	67	62	71	65	61	69	64	60				58	
5	81	70	62	56	79	69	61	56	67	60	55	65	59	54	63	58	54				52	
6	76	64	56	50	74	63	55	50	61	54	49	60	54	49	58	53	49				47	
7	71	59	51	45	69	58	50	45	56	50	45	55	49	44	54	48	44				42	
8	66	54	46	41	65	53	46	41	52	45	41	51	45	40	50	44	40				38	
9	62	50	43	38	61	50	42	37	48	42	37	47	41	37	46	41	37				35	
10	59	47	39	35	58	46	39	35	45	39	34	44	38	34	44	38	34				33	

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	12185	12185	12185	12185	12185
5°	13488	13015	12268	11195	10950
10°	14535	13903	12183	10222	9603
15°	14405	14435	12041	9221	7892
20°	12152	14205	11775	7832	6661
25°	7814	12820	11412	6854	5931
30°	5644	10397	10991	6174	5314
35°	4702	7783	10459	5637	4888
40°	4080	6032	9879	5199	4423
45°	3642	5053	9140	4838	4049
50°	3363	4398	8419	4442	3722
55°	3015	3796	7688	4144	3547
60°	2408	3341	6922	3764	3189
65°	2208	2839	6215	3452	2943
70°	2027	2345	5491	3069	2796
75°	1847	2097	4806	2914	2649
80°	1612	1832	3993	2666	2479
85°	1289	1508	3213	2426	2295

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 75°
 Vertical Angle: 45°
 Luminance: 12100 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	60.6	5.6
10°-20°	165.7	15.4
20°-30°	208.8	19.4
30°-40°	200.5	18.6
40°-50°	172.7	16.0
50°-60°	132.0	12.2
60°-70°	84.0	7.8
70°-80°	42.6	3.9
80°-90°	11.2	1.0
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°	435.1	40.4
0°-40°	635.6	59.0
0°-60°	940.3	87.2
0°-90°	1078.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1078.1	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	640	640	640	640	640	
5°	705	681	642	586	573	69
15°	730	732	611	468	400	198
25°	372	610	543	326	282	178
35°	202	335	450	242	210	127
45°	135	188	339	180	150	105
55°	91	114	232	125	107	80
65°	49	63	138	77	65	49
75°	25	28	65	40	36	27
85°	6	7	15	11	10	7
90°	0	0	0	0	0	



TEST NUMBER: P243257

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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	639.7	639.7	639.7	639.7	639.7	639.7	639.7	639.7	639.7	639.7	639.7
2.5°	673.6	674.4	674.9	673.8	671.5	671.7	669.6	666.1	661.7	657.7	660.0
5°	705.4	706.5	706.3	704.4	702.1	700.0	696.4	691.4	686.2	680.7	679.7
7.5°	734.7	737.0	736.4	732.8	731.2	728.2	722.2	716.5	708.6	700.8	697.7
10°	751.5	753.4	752.3	751.5	749.6	746.7	741.2	735.8	727.0	718.8	714.2
12.5°	750.2	751.9	752.7	753.6	752.9	751.9	749.6	745.0	737.9	730.3	724.5
15°	730.5	727.8	725.9	731.2	733.0	740.2	741.8	742.5	737.7	732.0	730.5
17.5°	670.7	671.5	686.0	683.6	686.8	704.2	711.1	720.5	724.5	723.2	725.7
20°	599.5	589.7	596.8	607.2	617.1	642.4	659.2	674.0	691.2	700.8	710.0
22.5°	475.6	475.8	493.0	510.1	532.3	559.7	585.3	613.7	644.3	662.9	684.5
25°	371.8	381.8	389.3	396.9	429.1	455.5	498.0	532.5	574.6	610.0	646.2
27.5°	300.6	311.1	312.3	329.3	348.3	369.7	397.5	451.9	495.0	547.0	591.8
30°	256.6	258.7	263.1	267.5	281.5	301.4	331.4	365.5	413.4	472.7	532.7
32.5°	224.8	224.4	228.8	235.7	243.4	256.8	273.8	302.1	345.4	392.5	462.6
35°	202.2	201.6	204.7	207.2	211.8	222.7	238.0	256.6	287.8	334.7	389.1
37.5°	180.9	182.1	184.0	186.7	192.8	199.7	210.0	225.4	250.1	281.1	333.2
40°	164.1	165.6	167.7	169.6	174.2	179.8	186.7	199.1	215.6	242.6	282.6
42.5°	149.0	149.7	151.3	154.1	157.4	162.4	169.1	178.6	192.4	211.2	246.2
45°	135.2	135.2	137.1	139.6	141.7	146.5	151.8	160.8	171.4	187.6	212.5
47.5°	123.5	123.7	124.8	125.2	127.5	131.9	137.5	144.6	153.4	165.8	189.0
50°	113.5	114.3	114.7	115.3	116.2	118.5	122.5	127.9	137.5	148.4	163.9
52.5°	103.0	104.0	104.9	106.1	107.4	107.6	110.5	114.1	120.8	132.1	144.6
55°	90.8	91.7	93.4	94.4	96.1	97.5	99.8	102.4	106.8	114.3	127.3
57.5°	77.0	77.2	78.9	80.0	83.3	86.7	88.8	91.5	94.6	99.8	109.7
60°	63.2	63.8	64.1	64.9	67.8	71.4	75.6	79.8	83.1	87.7	94.6
62.5°	55.7	55.9	56.5	57.4	57.6	59.2	60.5	65.5	71.4	76.0	80.6
65°	49.0	49.2	49.2	49.8	50.7	51.5	52.1	54.0	56.5	63.0	68.7
67.5°	42.7	42.5	42.9	43.5	43.7	44.4	45.4	46.5	48.1	50.0	55.9
70°	36.4	36.4	36.2	36.8	37.5	37.7	38.3	39.4	40.4	42.1	44.0
72.5°	30.1	30.6	30.6	31.0	31.2	32.0	32.4	32.9	34.3	35.2	36.6
75°	25.1	24.9	25.5	25.3	25.7	26.0	26.6	27.2	27.6	28.5	29.7
77.5°	20.1	19.7	20.1	19.9	20.3	20.7	20.7	21.4	21.8	22.6	23.2
80°	14.7	14.7	14.9	15.3	15.3	15.5	15.9	15.7	16.5	16.7	17.4
82.5°	10.0	10.3	10.3	10.5	10.5	10.5	10.9	10.9	11.1	11.5	11.7
85°	5.9	5.7	5.9	5.9	5.9	6.1	6.3	6.1	6.5	6.9	6.9
87.5°	1.7	1.7	1.9	2.1	2.1	2.3	2.3	2.3	2.5	2.5	2.7
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):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	639.7	639.7	639.7	639.7	639.7	639.7	639.7	639.7	639.7	639.7	639.7
2.5°	660.0	658.9	656.2	653.7	649.1	645.3	644.1	644.3	638.6	632.8	631.1
5°	678.2	674.4	669.0	663.3	656.4	649.5	645.1	641.6	632.8	624.0	619.0
7.5°	693.3	687.2	679.3	670.3	661.3	651.0	643.9	637.2	625.0	613.1	606.6
10°	707.1	698.5	687.6	675.9	664.0	650.6	640.3	629.9	614.6	601.2	590.1
12.5°	720.3	706.7	695.6	678.6	665.4	647.2	633.2	621.1	603.1	586.3	574.0
15°	721.5	711.9	697.0	679.5	659.4	642.4	624.8	610.6	590.1	571.5	550.3
17.5°	721.3	713.8	698.3	680.3	656.2	634.0	615.0	596.4	572.9	551.1	532.9
20°	713.8	708.6	695.2	673.8	649.5	624.0	602.9	580.9	553.5	531.1	511.2
22.5°	696.0	697.3	686.8	667.7	641.6	613.1	588.6	563.3	535.2	509.5	484.4
25°	665.9	679.3	676.1	658.3	630.5	599.3	571.5	543.0	512.8	485.4	462.2
27.5°	628.4	653.5	658.9	645.1	618.5	583.6	552.0	521.0	490.2	460.7	436.9
30°	584.0	621.5	635.3	627.8	603.3	566.6	530.0	499.7	466.0	434.6	409.4
32.5°	528.1	580.7	604.9	607.2	587.2	547.8	507.2	474.5	440.0	410.3	383.3
35°	465.7	530.2	569.8	580.5	566.0	527.1	484.4	449.8	413.0	383.1	355.8
37.5°	402.9	478.7	530.6	551.4	541.7	504.1	458.8	423.9	387.5	356.9	331.4
40°	345.2	417.2	484.6	517.0	514.1	479.1	433.5	397.3	360.2	332.0	303.9
42.5°	293.5	363.0	437.1	480.6	482.9	452.3	405.7	369.2	333.7	305.6	276.3
45°	252.7	313.8	387.2	439.2	449.2	424.1	376.8	339.3	306.9	280.5	251.2
47.5°	220.0	267.5	335.8	396.7	414.5	392.5	347.3	311.7	281.1	258.5	230.9
50°	191.7	236.3	294.3	350.6	376.8	360.2	318.0	284.1	256.4	234.7	210.4
52.5°	166.6	201.2	251.4	305.4	340.6	325.5	289.5	258.3	232.3	212.0	191.7
55°	145.9	174.8	219.2	267.3	299.8	291.4	259.4	231.5	208.7	189.4	172.9
57.5°	124.5	148.8	184.6	227.5	259.4	258.1	231.7	204.9	186.9	168.7	156.8
60°	105.9	125.6	154.7	191.1	223.1	223.3	202.8	181.7	166.2	150.5	139.2
62.5°	89.4	105.1	130.4	159.7	185.3	191.7	176.5	158.0	145.5	133.3	123.7
65°	75.1	86.9	105.9	132.5	152.6	161.4	151.3	137.9	127.5	116.6	108.0
67.5°	62.0	70.5	84.6	105.5	125.6	132.1	127.9	117.6	110.1	101.1	94.6
70°	48.8	56.1	65.9	81.6	98.2	107.2	105.9	98.6	92.3	85.8	79.8
72.5°	38.7	42.9	50.4	61.8	74.9	85.0	85.4	81.6	76.4	71.0	67.0
75°	31.2	33.1	36.6	45.4	55.9	64.3	67.2	65.3	61.1	57.8	55.1
77.5°	24.1	25.7	28.0	32.2	40.4	46.9	50.4	50.7	48.1	45.2	43.1
80°	18.0	18.6	20.3	22.4	26.6	32.2	36.4	36.4	35.0	33.5	32.2
82.5°	12.4	13.0	13.8	14.9	17.0	20.3	24.1	24.7	23.9	23.4	21.8
85°	6.9	7.5	8.0	8.6	9.4	11.1	13.8	14.7	14.9	13.6	12.8
87.5°	2.7	2.7	2.9	3.1	3.3	4.0	5.0	6.3	6.3	5.7	5.4
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°	639.7	639.7	639.7	639.7	639.7	639.7	639.7	639.7	639.7	639.7	639.7
2.5°	629.0	626.1	622.3	619.0	614.4	609.8	608.9	610.6	611.0	608.9	609.5
5°	614.2	608.7	604.1	596.6	591.8	585.5	581.3	581.3	581.3	578.2	575.2
7.5°	598.7	591.3	582.5	575.4	565.6	557.4	553.5	551.6	547.8	544.7	541.1
10°	580.7	570.4	559.5	548.4	539.8	528.5	521.8	517.7	511.2	508.4	503.2
12.5°	559.5	549.3	536.1	518.1	515.6	501.7	492.3	484.6	476.6	470.1	467.8
15°	542.6	524.8	507.2	494.4	475.8	467.6	453.8	452.6	446.1	427.0	412.2
17.5°	515.1	499.2	479.8	465.5	450.7	432.5	417.8	403.4	389.6	376.2	375.7
20°	490.9	472.2	453.8	438.3	412.4	386.4	377.4	364.2	356.1	345.4	342.2
22.5°	464.3	444.8	421.8	399.2	368.8	352.5	342.7	332.2	324.0	319.2	314.4
25°	437.5	418.0	387.5	359.6	338.9	326.1	317.8	306.4	300.6	296.4	290.1
27.5°	411.3	386.6	354.4	332.2	315.5	301.0	293.5	284.3	277.8	272.3	268.4
30°	385.4	351.5	324.0	306.9	289.7	280.7	270.9	264.0	259.1	254.1	247.6
32.5°	356.9	321.3	303.5	282.4	272.3	259.4	252.2	245.1	238.8	235.3	233.0
35°	323.8	295.1	279.2	263.7	251.0	242.4	232.3	228.0	224.6	217.7	214.8
37.5°	295.8	275.1	258.3	244.5	232.8	223.6	219.0	211.4	206.6	204.3	201.2
40°	272.5	254.1	239.7	225.7	215.8	209.1	201.0	197.0	190.7	188.4	185.9
42.5°	252.4	235.5	220.4	209.7	201.2	191.9	187.8	181.1	178.3	172.7	170.6
45°	232.1	217.1	203.9	193.4	185.3	179.6	172.1	167.9	163.1	160.1	154.5
47.5°	211.8	198.4	187.6	178.8	171.6	164.7	158.5	154.9	148.8	145.7	142.8
50°	196.1	183.2	172.9	164.1	156.8	149.9	145.9	140.0	134.6	131.0	130.0
52.5°	177.5	166.2	156.8	150.1	142.8	137.7	132.3	125.8	123.1	119.5	118.7
55°	161.0	151.8	143.8	136.7	130.4	124.8	118.5	113.9	111.8	110.1	108.8
57.5°	145.5	136.7	129.4	122.9	117.4	111.6	106.3	103.6	101.7	99.8	98.6
60°	130.2	122.2	115.5	110.1	104.5	98.8	95.0	92.7	91.3	88.5	87.7
62.5°	116.6	109.3	102.4	97.3	92.1	87.7	84.6	81.4	79.1	77.0	72.6
65°	101.7	95.2	90.0	85.0	80.0	76.6	73.1	69.5	66.6	66.6	66.6
67.5°	88.5	82.9	77.4	73.1	68.7	64.7	61.1	60.9	59.9	59.4	58.8
70°	75.1	71.2	66.1	61.3	56.9	55.1	54.4	53.4	52.1	51.9	51.1
72.5°	63.0	58.4	53.8	49.6	48.8	47.9	46.7	45.6	44.8	44.2	43.7
75°	51.5	46.9	43.1	42.1	41.0	39.6	38.5	37.7	37.3	37.3	37.1
77.5°	39.4	36.6	35.0	33.3	32.4	31.6	31.0	30.6	29.9	30.1	29.7
80°	28.9	28.0	26.6	25.5	25.1	24.3	23.9	23.7	23.2	23.2	23.0
82.5°	20.7	19.3	18.6	18.0	17.6	17.2	17.4	17.2	17.0	16.7	17.0
85°	11.9	11.7	11.3	11.3	11.3	11.1	11.1	11.1	10.9	10.7	10.7
87.5°	5.2	5.4	5.4	5.0	5.7	5.7	5.4	5.4	5.2	5.7	5.2
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: P243257

CATALOG NUMBER: S122RDRP-H290D835-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	639.7	639.7	639.7	639.7
2.5°	606.8	606.6	605.4	603.3
5°	574.0	573.1	571.0	572.7
7.5°	538.8	536.5	534.4	535.4
10°	501.1	500.3	499.0	496.5
12.5°	459.5	462.8	459.3	467.2
15°	397.7	412.6	393.9	400.2
17.5°	366.9	367.2	364.6	361.7
20°	338.1	330.7	333.5	328.6
22.5°	310.2	308.5	307.7	306.0
25°	285.3	282.2	281.1	282.2
27.5°	266.9	265.4	261.4	260.8
30°	243.9	243.2	242.0	241.6
32.5°	229.4	226.7	226.1	223.6
35°	213.3	211.8	210.8	210.2
37.5°	197.2	196.3	194.5	195.5
40°	184.0	179.8	178.1	177.9
42.5°	169.6	167.2	163.9	162.9
45°	152.8	151.8	150.7	150.3
47.5°	138.2	137.5	136.3	135.6
50°	127.7	126.0	125.8	125.6
52.5°	117.6	117.0	116.4	117.2
55°	108.2	107.4	106.8	106.8
57.5°	98.0	96.5	95.2	95.5
60°	86.0	85.2	84.1	83.7
62.5°	72.2	72.2	72.0	72.0
65°	65.7	65.3	65.1	65.3
67.5°	58.6	58.2	57.6	57.8
70°	50.4	50.2	50.4	50.2
72.5°	43.1	42.9	43.1	43.5
75°	36.4	36.2	36.0	36.0
77.5°	29.5	29.3	28.9	29.3
80°	23.0	22.8	22.6	22.6
82.5°	16.3	16.5	16.3	16.3
85°	10.7	10.9	10.7	10.5
87.5°	5.4	5.7	5.2	5.0
90°	0.0	0.0	0.0	0.0



TEST NUMBER: P243257
 CATALOG NUMBER: S122RDRP-H290D835-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	13.53	14.98	13.89	15.30	15.61	19.86	21.32	20.22	21.63	21.94
	3H	14.70	16.00	15.08	16.33	16.69	21.11	22.41	21.49	22.74	23.10
	4H	15.16	16.38	15.56	16.73	17.11	21.54	22.76	21.94	23.11	23.49
	6H	15.49	16.61	15.90	16.98	17.37	21.84	22.96	22.25	23.33	23.72
	8H	15.59	16.66	16.02	17.05	17.45	21.92	22.99	22.35	23.38	23.78
	12H	15.64	16.67	16.07	17.05	17.48	21.97	22.99	22.40	23.38	23.81
4H	2H	14.25	15.47	14.65	15.82	16.20	19.84	21.06	20.24	21.41	21.79
	3H	15.58	16.59	15.99	16.99	17.39	21.23	22.24	21.64	22.64	23.04
	4H	16.13	17.04	16.56	17.45	17.89	21.76	22.66	22.19	23.08	23.52
	6H	16.56	17.35	17.02	17.79	18.26	22.17	22.96	22.63	23.40	23.87
	8H	16.69	17.43	17.16	17.88	18.34	22.30	23.04	22.77	23.48	23.95
	12H	16.78	17.43	17.26	17.91	18.38	22.40	23.05	22.88	23.53	24.00
8H	4H	16.48	17.21	16.94	17.66	18.13	21.75	22.49	22.22	22.93	23.40
	6H	17.00	17.61	17.50	18.10	18.58	22.22	22.82	22.72	23.32	23.80
	8H	17.19	17.73	17.70	18.24	18.73	22.39	22.93	22.90	23.44	23.93
	12H	17.32	17.80	17.83	18.29	18.86	22.53	23.01	23.04	23.50	24.07
12H	4H	16.52	17.17	17.00	17.65	18.13	21.73	22.39	22.22	22.87	23.34
	6H	17.06	17.61	17.58	18.12	18.61	22.19	22.74	22.71	23.25	23.74
	8H	17.30	17.78	17.81	18.27	18.84	22.40	22.88	22.91	23.37	23.94