

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: P243144

Luminaire Tested: S122DRP-H290D927-X4F0-XX-UDD-A-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P243144
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-58)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S122DRP-H290D927-X4F0-XX-UDD-A-W
Description: DEFINE 2 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 2700K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

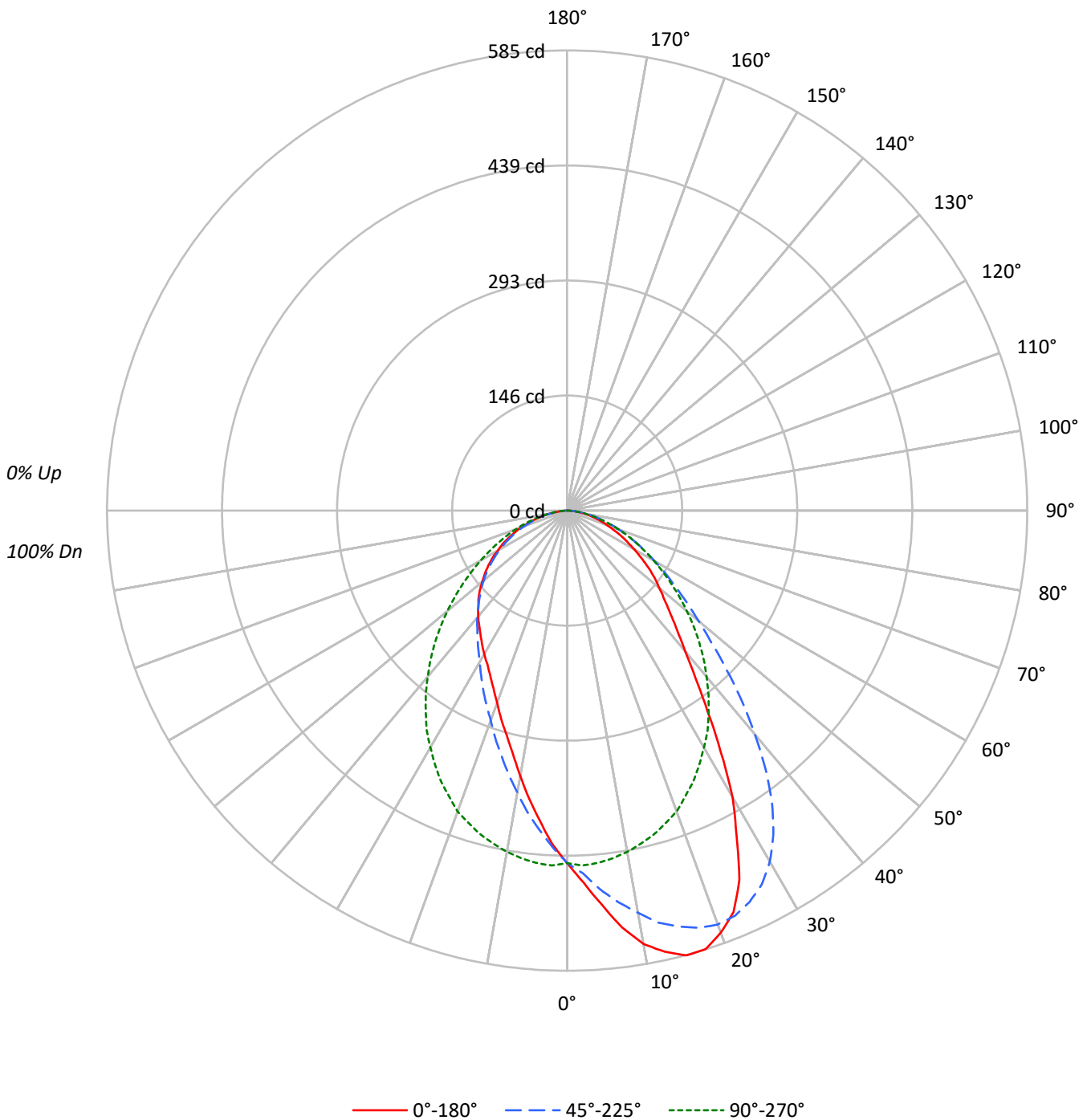
Lumens per Lamp: N/A
Luminaire Lumens: 994.3 lumens
Efficiency: N/A
Efficacy: 88.8 lumens/watt
Spacing Criteria (0/90/45): 1.09 / 1.16 / 1.24
Luminous Opening: Rectangular (W 3.88' x L: 0.15' x H: 0')
CIE Type: Direct

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

TEST NUMBER: P243144

CATALOG NUMBER: S122DRP-H290D927-X4F0-XX-UDD-A-W

Luminous Intensity Polar Plot



TEST NUMBER: P243144

CATALOG NUMBER: S122DRP-H290D927-X4F0-XX-UDD-A-W

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	106	102	98	107	103	100	97	99	96	94	95	93	91	92	90	88	86					86			
2	101	93	87	82	98	92	86	81	88	83	79	85	81	77	82	79	76	74					74			
3	93	83	76	70	90	82	75	69	79	73	68	76	71	67	73	69	66	63					63			
4	86	74	66	60	83	73	66	60	71	64	59	68	63	58	66	61	57	55					55			
5	79	67	59	52	77	66	58	52	64	57	52	62	56	51	60	55	51	49					49			
6	73	61	52	46	72	60	52	46	58	51	46	57	50	45	55	49	45	43					43			
7	68	56	47	41	67	55	47	41	53	46	41	52	46	41	51	45	40	39					39			
8	64	51	43	37	62	50	43	37	49	42	37	48	41	37	47	41	37	35					35			
9	60	47	39	34	58	46	39	34	45	38	34	44	38	34	43	38	33	32					32			
10	56	44	36	31	55	43	36	31	42	35	31	41	35	31	40	35	31	29					29			

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	8535	8535	8535	8535	8535
5°	9614	9247	8597	7784	7572
10°	10822	10042	8520	7046	6626
15°	11544	10795	8405	6362	5841
20°	11576	11351	8252	5751	5270
25°	10889	11534	7978	5298	4859
30°	9242	11336	7645	4887	4639
35°	7227	10559	7287	4616	4465
40°	5806	9232	6850	4428	4379
45°	4994	7736	6398	4243	4297
50°	4531	6451	5888	4104	4178
55°	4174	5546	5363	3942	4065
60°	3752	4891	4834	3760	3878
65°	3380	4372	4345	3520	3691
70°	3013	3882	3859	3225	3453
75°	2708	3378	3319	2855	3025
80°	2369	2797	2676	2325	2369
85°	2032	2317	1989	1552	1311

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 65°
 Vertical Angle: 45°
 Luminance: 10700 cd/sqm



TEST NUMBER: P243144

CATALOG NUMBER: S122DRP-H290D927-X4F0-XX-UDD-A-W

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	42.7	4.3
10°-20°	122.7	12.3
20°-30°	178.4	17.9
30°-40°	191.4	19.3
40°-50°	171.6	17.3
50°-60°	136.8	13.8
60°-70°	92.5	9.3
70°-80°	47.2	4.7
80°-90°	11.1	1.1
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°	343.8	34.6
0°-40°	535.2	53.8
0°-60°	843.6	84.8
0°-90°	994.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	994.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	448	448	448	448	448	
5°	503	484	450	407	396	50
15°	585	547	426	323	296	164
25°	518	549	380	252	231	233
35°	311	454	313	198	192	197
45°	185	287	238	158	160	145
55°	126	167	162	119	122	112
65°	75	97	96	78	82	74
75°	37	46	45	39	41	39
85°	9	11	9	7	6	11
90°	0	0	0	0	0	



TEST NUMBER: P243144

CATALOG NUMBER: S122DRP-H290D927-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	448.1	448.1	448.1	448.1	448.1	448.1	448.1	448.1	448.1	448.1	448.1
2.5°	473.0	474.5	473.1	472.6	471.6	471.3	468.7	466.5	465.2	461.5	461.9
5°	502.8	506.1	504.3	504.1	500.5	498.2	495.9	492.5	487.6	483.6	480.4
7.5°	534.3	532.7	532.2	530.4	527.7	524.4	519.2	514.4	508.1	502.3	498.0
10°	559.5	559.0	559.9	555.2	553.6	548.4	543.9	536.5	528.4	519.2	513.6
12.5°	574.5	576.0	577.1	575.3	571.3	569.8	562.4	551.9	549.1	536.7	529.9
15°	585.4	586.1	586.2	584.2	582.3	578.4	574.0	567.3	558.2	547.4	542.3
17.5°	584.7	584.6	585.6	584.4	583.3	582.1	578.6	573.5	566.3	556.2	547.6
20°	571.1	574.1	576.5	577.0	576.8	577.4	575.8	572.5	567.3	560.0	550.3
22.5°	552.6	551.4	556.4	556.1	558.2	563.2	565.3	564.0	562.0	557.4	549.6
25°	518.1	519.2	522.7	526.4	534.8	537.8	544.3	549.3	549.9	548.8	543.9
27.5°	466.3	474.6	476.5	481.3	493.0	502.8	515.9	523.7	534.8	535.8	533.7
30°	420.2	419.9	422.7	431.3	442.1	456.9	473.8	493.9	506.6	515.4	518.6
32.5°	363.5	364.8	372.1	382.8	393.7	408.5	428.0	452.6	469.7	487.9	498.2
35°	310.8	314.9	321.9	329.2	341.1	361.4	383.1	403.5	429.7	454.1	470.6
37.5°	267.3	273.0	278.3	285.2	296.9	312.4	332.0	359.0	385.1	414.4	438.8
40°	233.5	235.7	239.3	246.1	253.9	269.5	289.2	309.5	337.6	371.3	403.3
42.5°	207.0	206.5	210.4	214.8	221.9	233.5	250.7	271.0	299.0	328.9	361.2
45°	185.4	185.6	187.2	191.7	197.3	204.0	217.2	236.3	257.5	287.2	321.6
47.5°	167.8	168.3	170.8	174.0	177.3	183.4	192.2	204.6	224.5	249.4	281.6
50°	152.9	153.7	155.4	157.7	160.2	164.5	171.1	180.9	196.7	217.7	246.9
52.5°	139.6	140.0	140.5	142.6	144.6	148.6	153.6	161.2	173.6	191.2	213.9
55°	125.7	125.4	126.5	128.4	130.2	133.0	138.1	144.3	153.1	167.0	185.7
57.5°	111.4	111.9	112.8	113.8	117.1	120.1	123.9	129.5	136.5	147.4	163.0
60°	98.5	98.5	99.5	100.8	103.0	105.0	108.6	113.8	119.9	128.4	141.5
62.5°	85.9	86.6	87.6	88.2	90.2	92.7	95.5	99.5	105.1	111.9	121.7
65°	75.0	74.6	75.6	76.9	78.4	80.1	83.3	86.6	90.9	97.0	105.1
67.5°	63.7	64.7	65.0	65.7	66.8	69.0	70.5	74.0	77.4	82.9	89.7
70°	54.1	54.7	55.2	56.1	57.0	58.0	59.5	62.4	65.8	69.7	74.5
72.5°	45.4	45.9	45.4	46.3	46.8	47.8	49.8	51.1	53.7	57.0	61.4
75°	36.8	37.1	37.0	37.8	38.0	39.0	40.0	41.1	44.1	45.9	48.9
77.5°	28.9	29.2	29.4	29.7	30.0	30.5	31.0	32.2	33.8	35.5	37.8
80°	21.6	21.6	22.1	22.2	22.4	22.7	23.5	23.9	25.0	25.5	27.4
82.5°	14.9	15.1	15.3	15.3	15.4	15.8	15.9	16.6	16.9	17.7	18.6
85°	9.3	9.5	9.5	9.5	10.0	9.8	9.8	10.1	10.6	10.6	10.9
87.5°	4.6	4.8	4.8	4.8	5.0	5.0	5.0	5.0	5.0	5.3	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



TEST NUMBER: P243144

CATALOG NUMBER: S122DRP-H290D927-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	448.1	448.1	448.1	448.1	448.1	448.1	448.1	448.1	448.1	448.1	448.1
2.5°	461.7	461.5	460.9	457.9	455.6	452.6	452.1	451.6	447.4	443.0	441.6
5°	477.9	475.0	470.8	465.8	460.9	455.4	452.2	449.6	443.3	436.3	432.3
7.5°	493.9	488.1	481.6	473.8	465.5	456.7	451.1	445.8	437.1	428.0	422.6
10°	507.5	499.7	490.7	480.4	469.0	457.1	448.8	440.5	429.5	418.4	411.1
12.5°	518.7	508.8	497.0	483.1	472.6	456.2	444.6	433.7	421.6	407.1	399.2
15°	527.4	517.6	501.7	487.6	473.8	451.9	437.8	426.2	410.0	395.9	383.3
17.5°	537.8	523.9	508.1	487.9	472.6	447.6	431.7	416.6	399.0	382.4	368.5
20°	542.5	527.9	510.9	488.4	469.0	443.0	421.7	407.1	385.9	366.8	351.1
22.5°	543.1	529.2	510.8	486.9	462.7	436.2	411.8	392.7	371.5	351.2	333.5
25°	540.3	527.0	508.0	484.2	455.7	428.9	401.7	379.6	355.1	334.2	316.1
27.5°	532.7	521.9	503.8	478.4	448.6	417.6	387.9	363.8	339.6	315.9	298.7
30°	520.4	513.3	497.7	470.8	439.5	405.3	375.6	347.6	321.4	299.2	280.6
32.5°	504.6	501.2	488.2	461.7	430.2	391.9	360.9	332.0	303.5	282.4	263.4
35°	484.6	486.4	475.5	451.4	418.4	378.3	343.6	313.4	285.6	263.2	245.6
37.5°	458.5	467.5	460.5	438.0	403.3	364.5	325.5	295.2	266.0	244.4	229.0
40°	429.4	445.1	441.8	422.9	387.1	348.4	308.1	275.5	246.9	226.5	211.8
42.5°	395.0	417.9	421.6	404.5	371.0	328.4	288.6	257.0	229.5	209.5	195.4
45°	356.6	384.9	397.2	383.7	352.2	309.0	268.5	237.5	210.3	193.2	181.4
47.5°	317.9	352.1	368.7	362.2	330.3	288.2	248.6	218.2	192.5	177.6	166.5
50°	279.8	316.4	340.6	336.3	308.8	268.5	228.5	198.7	175.1	161.4	151.9
52.5°	246.3	280.9	307.3	309.5	284.7	245.9	207.3	179.6	159.5	147.1	139.1
55°	213.3	245.4	274.3	279.6	259.5	222.2	187.7	161.5	143.3	133.0	126.5
57.5°	183.7	212.9	241.6	250.9	234.7	201.0	166.7	143.6	127.9	119.9	114.3
60°	158.7	185.1	209.8	219.2	208.1	177.4	147.4	126.9	113.8	106.6	102.2
62.5°	136.8	157.2	179.1	189.6	182.1	155.4	129.2	110.9	100.3	94.2	90.7
65°	117.1	132.8	150.1	162.2	153.9	134.0	112.1	96.4	87.4	81.8	79.3
67.5°	98.8	111.9	125.7	135.3	131.2	113.1	94.7	82.4	75.0	70.6	68.3
70°	82.3	92.0	103.2	110.6	107.6	93.7	79.1	69.3	63.0	60.0	58.0
72.5°	67.5	73.8	82.3	88.4	85.2	75.5	65.0	57.2	52.6	49.1	47.6
75°	53.6	59.0	65.0	69.2	66.7	59.4	51.1	45.1	42.0	39.8	38.8
77.5°	40.6	44.9	49.1	51.1	49.9	44.6	39.0	34.3	31.7	30.3	29.2
80°	29.2	31.7	34.5	36.3	35.7	32.0	28.0	24.4	23.2	21.6	21.2
82.5°	19.6	21.6	22.2	23.1	22.6	20.9	18.1	15.9	14.9	14.1	13.9
85°	11.6	12.1	12.9	12.9	12.4	11.3	9.8	9.1	8.1	8.0	7.5
87.5°	5.1	5.1	5.1	5.1	5.1	4.8	4.1	3.8	3.5	3.3	3.2
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: P243144

CATALOG NUMBER: S122DRP-H290D927-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	448.1	448.1	448.1	448.1	448.1	448.1	448.1	448.1	448.1	448.1	448.1
2.5°	440.5	438.8	436.5	433.8	431.5	427.9	426.7	426.7	427.5	426.5	425.7
5°	429.0	425.7	422.4	417.2	412.9	407.1	405.5	403.8	403.7	402.0	399.8
7.5°	416.8	411.8	405.0	397.7	393.0	386.7	383.3	382.3	379.1	376.1	372.6
10°	402.5	394.9	386.7	379.8	372.5	364.3	360.2	357.4	354.2	350.6	348.1
12.5°	385.2	376.6	369.2	361.0	354.9	343.5	342.1	338.5	332.2	326.7	324.7
15°	374.6	359.5	351.1	343.6	334.3	322.6	318.2	314.3	308.3	304.8	302.0
17.5°	355.9	342.3	331.7	321.7	312.8	303.6	297.2	293.9	289.1	286.1	283.3
20°	338.8	324.0	312.9	301.3	292.0	283.7	278.3	274.1	271.6	268.7	265.8
22.5°	321.6	306.1	295.5	283.7	272.8	267.8	261.4	257.9	254.6	252.2	249.3
25°	301.5	289.2	276.0	266.8	257.2	252.1	245.9	242.6	240.0	237.3	235.8
27.5°	283.6	271.1	258.9	249.8	241.6	236.7	232.8	229.7	226.4	224.4	223.2
30°	265.0	253.6	242.8	234.0	227.7	222.2	219.9	216.9	214.4	213.6	211.8
32.5°	248.4	235.7	227.0	219.1	213.8	210.0	208.3	205.1	204.6	203.8	202.8
35°	231.8	220.9	212.6	205.8	201.3	198.5	196.4	195.5	194.7	193.9	193.0
37.5°	215.4	206.8	199.0	193.5	189.9	187.7	187.2	185.6	185.4	184.2	184.2
40°	200.7	191.9	186.4	182.1	179.1	178.1	176.8	176.5	176.0	175.6	176.3
42.5°	185.9	179.9	175.3	170.8	168.5	167.7	167.3	166.8	166.5	167.5	167.8
45°	172.1	167.0	163.0	159.9	158.5	157.5	157.5	158.0	157.9	158.4	158.4
47.5°	159.4	154.7	151.4	150.2	148.6	148.3	148.4	148.3	149.1	149.8	150.4
50°	147.3	143.1	140.5	139.3	139.0	138.5	139.1	139.5	140.0	140.6	141.0
52.5°	133.8	131.8	130.2	129.0	128.9	129.0	128.9	130.0	130.5	131.5	131.3
55°	122.4	120.9	119.7	118.4	118.2	118.7	119.1	120.1	120.7	121.6	121.4
57.5°	111.6	110.4	109.1	108.8	108.6	108.8	110.3	110.1	111.1	111.8	112.1
60°	99.8	99.0	97.8	97.8	98.3	98.7	99.2	100.0	101.0	100.8	102.0
62.5°	89.1	88.1	87.7	88.2	88.1	88.9	89.4	89.4	90.7	91.2	91.5
65°	78.3	77.9	77.4	77.4	77.9	78.1	78.9	79.4	79.9	80.9	81.8
67.5°	68.2	67.3	67.3	67.0	67.7	68.2	68.7	69.3	69.7	70.8	71.3
70°	57.5	57.2	57.0	57.4	57.4	57.9	58.7	59.5	60.2	60.4	61.4
72.5°	47.3	47.3	47.3	47.8	48.1	48.6	48.8	49.4	50.4	50.6	51.1
75°	38.0	38.1	38.0	38.1	38.3	38.8	39.1	39.8	40.5	40.6	41.0
77.5°	29.4	29.0	28.7	29.2	29.5	30.5	30.3	30.7	31.3	31.0	31.3
80°	20.6	21.1	20.4	21.4	21.4	21.2	21.6	22.1	21.9	22.2	21.9
82.5°	13.9	13.4	13.4	13.9	14.1	13.6	13.9	14.1	14.3	13.9	13.8
85°	7.6	7.5	7.8	7.3	7.5	7.1	7.1	6.8	7.1	6.8	6.5
87.5°	2.8	2.7	2.8	2.3	2.2	2.0	1.8	1.8	1.5	1.5	1.5
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: P243144

CATALOG NUMBER: S122DRP-H290D927-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	448.1	448.1	448.1	448.1
2.5°	426.9	425.0	424.2	424.9
5°	397.5	398.0	395.0	396.0
7.5°	372.1	370.0	370.6	369.5
10°	345.3	344.1	342.3	342.6
12.5°	327.2	319.4	318.9	317.4
15°	301.8	297.5	296.5	296.2
17.5°	281.6	277.9	279.3	278.3
20°	263.4	263.5	261.4	260.0
22.5°	247.3	246.9	246.1	244.8
25°	233.7	233.7	231.7	231.2
27.5°	221.2	221.6	219.9	219.9
30°	211.9	210.8	210.6	210.9
32.5°	202.7	201.3	201.5	201.3
35°	192.7	193.0	192.5	192.0
37.5°	184.2	184.2	184.2	183.7
40°	176.0	176.3	175.8	176.1
42.5°	167.7	167.8	167.8	167.2
45°	159.4	159.2	158.9	159.5
47.5°	150.7	150.7	150.6	150.9
50°	141.3	141.6	141.1	141.0
52.5°	131.7	131.8	131.7	132.0
55°	121.9	121.9	122.1	122.4
57.5°	111.8	112.9	112.1	112.8
60°	101.8	102.0	102.2	101.8
62.5°	92.4	92.2	92.4	92.9
65°	82.1	82.4	82.3	81.9
67.5°	72.0	71.6	72.1	71.6
70°	61.2	61.9	61.4	62.0
72.5°	51.4	51.2	51.6	50.7
75°	41.1	41.1	41.3	41.1
77.5°	31.5	31.2	31.0	30.5
80°	21.7	21.7	21.1	21.6
82.5°	13.3	13.4	13.6	12.6
85°	6.3	6.3	6.1	6.0
87.5°	1.3	1.3	1.5	1.7
90°	0.0	0.0	0.0	0.0



TEST NUMBER: P243144
 CATALOG NUMBER: S122DRP-H290D927-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	16.10	17.62	16.46	17.94	18.25	18.94	20.46	19.30	20.77	21.09
	3H	17.45	18.82	17.83	19.15	19.51	19.96	21.32	20.33	21.65	22.01
	4H	17.94	19.22	18.34	19.57	19.94	20.28	21.56	20.68	21.91	22.29
	6H	18.29	19.47	18.70	19.84	20.23	20.48	21.66	20.89	22.03	22.42
	8H	18.39	19.52	18.82	19.91	20.31	20.52	21.65	20.95	22.04	22.44
	12H	18.46	19.54	18.89	19.92	20.35	20.54	21.62	20.97	22.00	22.43
4H	2H	16.98	18.26	17.38	18.61	18.99	19.18	20.46	19.58	20.81	21.19
	3H	18.48	19.54	18.89	19.94	20.34	20.55	21.61	20.96	22.01	22.41
	4H	19.05	20.00	19.48	20.42	20.86	21.06	22.02	21.49	22.43	22.87
	6H	19.48	20.32	19.94	20.76	21.22	21.39	22.23	21.85	22.67	23.13
	8H	19.62	20.40	20.08	20.84	21.31	21.47	22.25	21.93	22.69	23.16
	12H	19.72	20.41	20.20	20.89	21.36	21.51	22.20	21.99	22.68	23.15
8H	4H	19.48	20.26	19.95	20.70	21.17	21.20	21.98	21.66	22.42	22.89
	6H	20.01	20.65	20.50	21.14	21.62	21.64	22.28	22.14	22.77	23.25
	8H	20.19	20.77	20.71	21.28	21.77	21.77	22.35	22.29	22.86	23.35
	12H	20.35	20.86	20.86	21.35	21.91	21.86	22.37	22.37	22.86	23.43
12H	4H	19.54	20.23	20.02	20.71	21.18	21.19	21.89	21.67	22.37	22.84
	6H	20.08	20.66	20.60	21.17	21.66	21.64	22.22	22.16	22.73	23.22
	8H	20.32	20.83	20.83	21.32	21.89	21.82	22.33	22.33	22.82	23.39