

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: P242284

Luminaire Tested: S122DRP-S290D927-X4F0-XX-UDD-A-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P242284
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-19)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S122DRP-S290D927-X4F0-XX-UDD-A-W
Description: DEFINE 2 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 2700K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

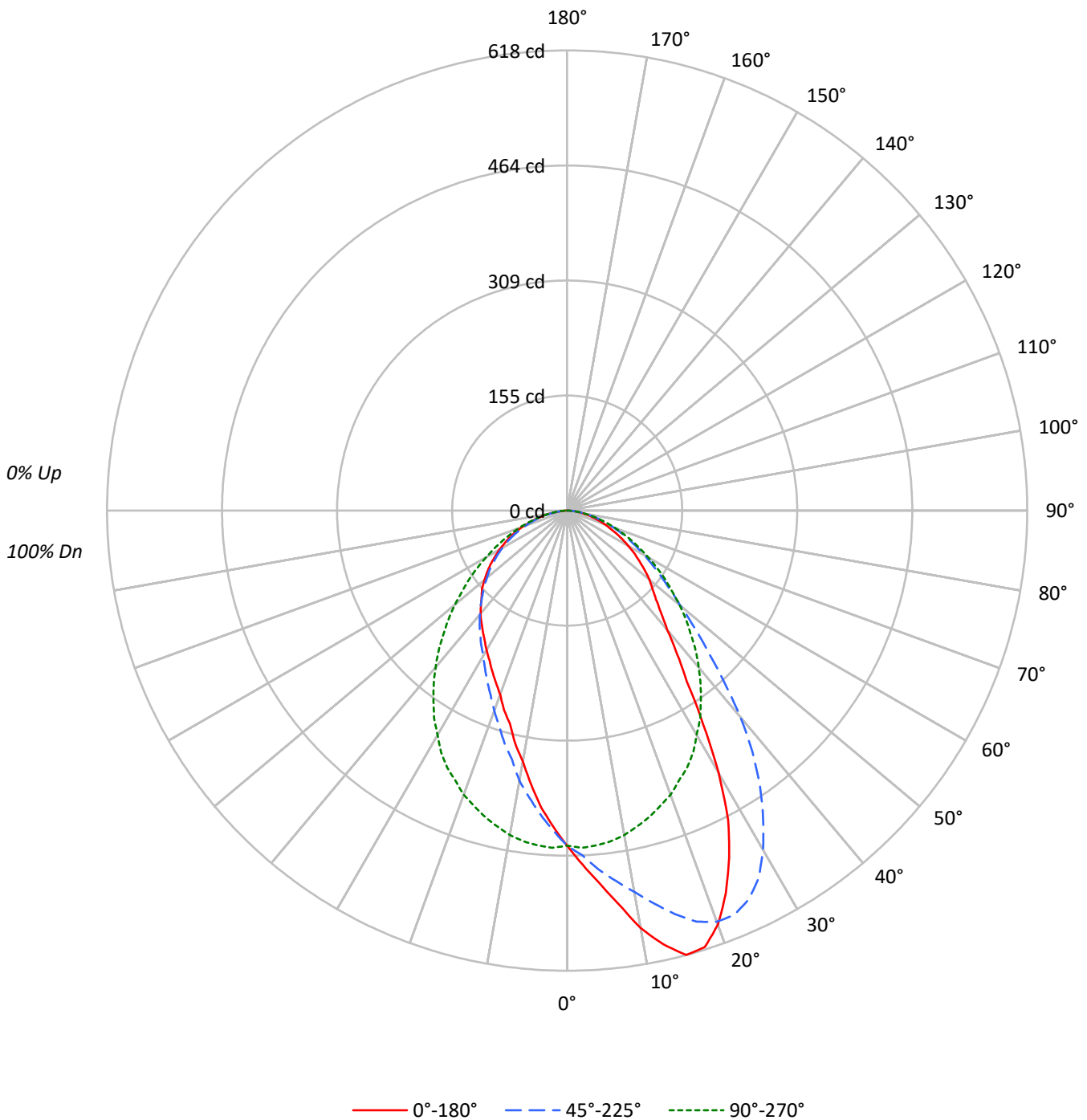
Lumens per Lamp: N/A
Luminaire Lumens: 992.8 lumens
Efficiency: N/A
Efficacy: 85.6 lumens/watt
Spacing Criteria (0/90/45): 1.09 / 1.16 / 1.23
Luminous Opening: Rectangular (W 3.88' x L: 0.15' x H: 0')
CIE Type: Direct

Input Watts (W): 11.6
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	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	110	106	102	98	107	103	100	97	99	96	94	95	93	91	92	90	88	86
2	101	94	87	82	98	92	86	81	88	83	79	85	81	78	82	79	76	74
3	93	83	76	70	90	82	75	69	79	73	68	76	71	67	74	69	66	64
4	86	75	66	60	83	73	66	60	71	64	59	69	63	58	66	62	58	55
5	79	67	59	53	77	66	58	52	64	57	52	62	56	51	60	55	51	49
6	74	61	53	47	72	60	52	46	58	51	46	57	51	46	55	50	45	43
7	69	56	48	42	67	55	47	42	54	46	41	52	46	41	51	45	41	39
8	64	51	43	38	63	51	43	38	49	42	37	48	42	37	47	41	37	35
9	60	47	39	34	59	47	39	34	46	39	34	45	38	34	44	38	34	32
10	56	44	36	31	55	43	36	31	42	36	31	41	35	31	41	35	31	29

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	8571	8571	8571	8571	8571
5°	9610	9250	8629	7837	7646
10°	11013	10056	8557	7129	6617
15°	12183	11069	8401	6389	5847
20°	11998	11913	8232	5799	5329
25°	10817	12112	8007	5326	5002
30°	8941	11569	7650	4958	4762
35°	6515	10496	7276	4730	4592
40°	5204	9001	6833	4533	4498
45°	4547	7198	6322	4334	4369
50°	4276	5873	5829	4166	4285
55°	3942	5107	5323	4015	4171
60°	3611	4545	4789	3836	3992
65°	3290	4110	4309	3601	3822
70°	2985	3670	3843	3325	3564
75°	2649	3246	3319	2981	3157
80°	2282	2753	2753	2446	2545
85°	2032	2229	2032	1705	1508

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 65°
 Vertical Angle: 45°
 Luminance: 11028 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	42.9	4.3
10°-20°	124.8	12.6
20°-30°	181.1	18.2
30°-40°	190.9	19.2
40°-50°	168.9	17.0
50°-60°	134.8	13.6
60°-70°	91.6	9.2
70°-80°	46.9	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°	348.7	35.1
0°-40°	539.6	54.3
0°-60°	843.3	84.9
0°-90°	992.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	992.8	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	450	450	450	450	450	
5°	503	484	451	410	400	50
15°	618	561	426	324	296	171
25°	515	576	381	253	238	233
35°	280	451	313	203	198	181
45°	169	267	235	161	162	132
55°	119	154	160	121	126	106
65°	73	91	96	80	85	72
75°	36	44	45	40	43	38
85°	9	10	9	8	7	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°	450.0	450.0	450.0	450.0	450.0	450.0	450.0	450.0	450.0	450.0	450.0
2.5°	476.0	476.2	476.5	473.7	473.4	473.4	471.0	468.9	466.5	463.2	463.5
5°	502.6	504.5	505.2	503.1	500.0	499.7	496.7	491.9	487.4	483.8	481.2
7.5°	533.4	534.1	532.7	530.3	528.2	524.2	519.4	514.7	507.8	501.6	497.1
10°	569.4	570.4	567.5	563.5	560.2	555.4	547.4	539.3	529.4	519.9	512.3
12.5°	596.7	599.7	595.7	596.0	589.8	582.7	572.9	569.7	554.9	540.7	532.4
15°	617.8	617.6	618.0	614.7	610.6	609.5	599.5	588.6	569.0	561.3	547.8
17.5°	614.7	617.1	618.5	617.5	616.8	615.2	610.9	602.8	592.0	578.9	562.8
20°	591.9	595.3	595.9	599.8	602.1	605.0	606.2	604.3	598.3	587.7	574.2
22.5°	556.6	556.9	558.8	565.6	571.1	579.6	584.1	592.6	591.2	587.4	576.7
25°	514.7	513.0	519.1	522.2	533.4	545.2	553.7	563.0	571.3	576.3	573.0
27.5°	468.4	464.7	473.9	482.0	490.0	501.4	514.2	529.4	541.0	556.8	560.6
30°	406.5	408.0	416.7	425.5	439.3	457.3	472.2	489.3	507.8	526.0	538.6
32.5°	339.7	346.8	351.5	366.2	377.9	398.5	422.0	444.5	468.7	490.0	511.3
35°	280.2	287.1	294.7	304.6	321.7	341.6	362.9	391.8	423.2	451.4	474.6
37.5°	242.5	241.3	246.0	253.2	267.9	285.0	310.3	339.7	377.4	408.7	439.8
40°	209.3	208.6	211.7	218.3	228.8	240.6	262.0	287.1	321.5	362.0	400.9
42.5°	186.5	187.1	188.5	192.7	199.1	208.2	222.9	243.4	274.1	311.7	354.2
45°	168.8	170.0	171.9	174.2	178.3	186.3	195.3	210.5	235.4	267.2	308.4
47.5°	155.0	155.3	157.4	159.5	161.9	166.7	174.7	184.4	203.4	230.6	267.4
50°	144.3	143.0	144.4	146.0	148.6	151.7	156.5	165.5	177.3	198.2	227.8
52.5°	131.1	131.5	132.7	133.0	135.3	138.4	142.7	148.2	158.6	173.8	196.8
55°	118.7	119.5	120.2	121.2	123.3	125.6	129.0	133.2	141.5	153.8	171.8
57.5°	106.9	107.2	107.8	110.0	111.2	113.3	116.7	120.6	126.1	135.6	149.8
60°	94.8	94.8	96.2	97.0	98.8	100.8	103.4	107.1	111.9	119.3	130.2
62.5°	83.7	83.5	83.9	85.4	86.7	88.6	91.2	94.1	98.6	105.0	113.5
65°	73.0	72.6	73.7	74.0	75.4	77.3	79.4	82.7	86.3	91.2	99.1
67.5°	62.3	62.8	63.5	64.2	64.9	67.1	68.5	70.9	74.0	78.2	83.7
70°	53.6	53.6	53.6	54.1	55.2	56.2	57.6	59.5	62.4	65.9	70.7
72.5°	43.9	44.6	45.3	44.8	46.2	46.7	48.4	49.3	52.1	54.0	58.1
75°	36.0	36.0	36.0	36.8	37.4	37.9	38.9	40.0	41.3	44.1	46.4
77.5°	28.4	28.2	28.4	28.5	29.2	29.9	30.3	31.1	32.5	33.9	36.0
80°	20.8	21.1	21.3	21.6	21.6	22.0	22.1	23.3	24.2	25.1	26.3
82.5°	14.9	14.9	14.9	14.9	15.0	15.2	15.7	15.9	16.1	16.8	17.6
85°	9.3	9.2	9.2	9.5	9.3	9.3	9.7	10.0	10.0	10.2	10.7
87.5°	4.5	4.5	4.7	4.5	4.5	4.7	4.7	4.5	4.7	4.8	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°	450.0	450.0	450.0	450.0	450.0	450.0	450.0	450.0	450.0	450.0	450.0
2.5°	464.7	463.4	462.5	459.4	456.6	453.9	453.0	453.3	449.5	445.9	444.3
5°	479.8	476.3	473.1	468.4	462.8	456.8	453.7	451.3	445.2	438.6	434.8
7.5°	493.5	489.0	483.1	474.8	467.2	458.2	452.6	448.0	439.5	430.7	425.3
10°	505.7	499.0	490.9	480.1	470.3	458.7	450.6	442.4	432.1	421.0	414.1
12.5°	516.3	506.6	498.6	484.1	472.0	456.8	446.8	434.5	423.4	409.7	403.0
15°	534.3	517.5	502.3	486.7	472.4	452.1	441.4	426.0	411.6	395.4	387.6
17.5°	547.6	529.4	505.9	487.1	471.1	449.5	434.1	415.8	399.5	381.6	371.2
20°	558.7	537.0	511.3	487.8	467.7	442.1	425.0	406.1	386.2	365.3	353.9
22.5°	565.2	542.2	516.8	485.2	460.8	436.0	413.4	392.3	372.0	349.0	336.9
25°	565.6	544.8	517.8	483.9	455.2	427.0	401.1	381.0	356.6	335.5	318.1
27.5°	559.9	543.4	517.3	481.5	448.8	416.5	388.3	366.3	340.6	317.7	300.3
30°	547.3	538.6	513.4	477.4	440.9	405.4	373.6	347.8	322.2	299.1	281.1
32.5°	527.7	527.5	506.1	471.5	432.4	391.4	358.2	332.1	303.0	280.4	263.4
35°	500.9	509.2	495.2	462.2	421.3	378.3	342.6	312.9	283.5	261.7	245.6
37.5°	466.8	486.0	480.5	449.7	407.2	364.3	325.5	294.4	266.2	243.7	228.0
40°	431.4	457.7	461.5	435.0	391.9	347.5	305.8	274.8	247.5	227.4	211.5
42.5°	393.3	425.1	437.2	417.4	375.3	329.8	288.2	255.8	228.8	209.5	195.8
45°	349.9	390.5	409.4	397.3	356.5	310.1	267.2	234.7	210.1	191.8	180.9
47.5°	310.6	354.7	378.8	373.1	336.2	290.2	247.9	216.2	191.8	176.9	166.7
50°	268.4	314.1	344.7	346.1	314.1	268.6	226.1	196.7	174.7	161.0	153.1
52.5°	231.8	274.8	308.9	317.7	289.4	246.1	206.5	177.3	158.6	146.3	139.4
55°	200.8	237.6	274.7	288.2	264.8	223.3	186.1	160.3	142.2	133.5	127.3
57.5°	171.4	203.7	238.9	253.0	238.2	201.7	165.7	143.0	127.6	119.9	115.0
60°	149.1	173.3	203.7	221.6	209.1	177.5	147.0	125.7	113.6	106.9	102.4
62.5°	128.3	149.1	173.7	189.6	184.2	154.8	128.3	110.2	100.1	93.9	91.0
65°	109.3	126.3	146.2	161.2	156.7	134.0	111.7	95.6	87.3	82.3	79.7
67.5°	93.1	106.0	120.2	134.0	130.2	113.5	94.6	81.6	75.2	70.7	69.2
70°	77.8	87.2	99.5	110.0	107.1	93.9	79.7	69.0	63.7	60.0	58.5
72.5°	63.3	70.6	79.2	87.3	85.6	75.2	64.0	56.6	52.8	49.5	48.3
75°	50.0	55.9	61.6	67.3	66.8	58.3	51.4	45.1	41.9	39.3	38.7
77.5°	39.1	42.7	46.9	50.5	49.6	44.1	38.4	34.6	32.0	30.3	30.1
80°	28.2	30.1	32.9	35.3	34.1	32.0	27.7	25.1	23.3	21.6	20.9
82.5°	18.5	20.4	21.8	22.8	22.0	20.1	17.8	16.3	15.4	14.4	14.2
85°	10.7	11.8	12.5	12.8	12.5	11.2	10.0	9.3	8.5	8.0	7.8
87.5°	5.2	5.2	5.2	5.5	5.0	5.0	4.3	3.8	3.6	3.5	3.1
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°	450.0	450.0	450.0	450.0	450.0	450.0	450.0	450.0	450.0	450.0	450.0
2.5°	442.6	441.6	437.9	436.0	432.9	430.0	428.1	428.9	429.6	429.3	428.8
5°	431.4	428.1	423.1	418.7	415.6	409.9	407.5	406.3	405.3	404.0	402.8
7.5°	418.9	414.2	407.2	401.6	396.1	388.8	385.2	383.1	380.9	378.3	375.8
10°	405.4	398.2	390.5	381.9	375.0	368.6	362.9	359.1	355.6	352.3	349.9
12.5°	391.2	382.6	372.7	360.1	352.3	342.5	342.8	335.4	329.5	327.8	324.8
15°	376.0	364.3	352.3	338.3	332.3	324.0	318.8	313.6	308.9	305.6	304.8
17.5°	359.4	343.7	332.1	321.7	311.9	303.4	298.9	294.7	290.7	285.9	285.7
20°	339.9	326.7	313.8	304.9	294.7	286.1	280.2	276.0	272.8	270.2	267.9
22.5°	321.4	306.7	295.1	285.2	275.2	268.6	264.3	260.3	257.7	254.8	252.7
25°	301.3	290.1	277.1	266.2	257.9	253.4	249.6	246.1	244.4	242.5	240.1
27.5°	284.2	271.7	258.9	250.4	242.8	238.9	235.9	233.3	231.8	230.6	229.0
30°	265.8	253.2	243.7	235.4	229.3	225.4	223.6	222.3	220.4	219.7	219.0
32.5°	248.2	237.1	229.3	222.4	216.7	214.5	212.9	211.7	210.3	209.6	208.1
35°	231.8	222.3	214.3	210.3	205.7	203.4	202.2	200.5	199.1	198.4	198.2
37.5°	216.0	207.4	202.0	196.7	194.4	193.2	191.5	190.3	189.7	189.6	189.4
40°	200.8	194.1	189.4	185.2	184.4	182.3	180.9	179.9	179.9	180.1	179.9
42.5°	187.0	181.1	177.1	173.7	172.6	171.6	170.2	170.4	170.7	171.4	170.7
45°	173.0	168.6	165.7	164.0	162.1	160.9	160.7	161.2	161.4	161.5	162.1
47.5°	159.8	157.0	154.3	152.2	151.3	151.2	150.8	151.7	152.6	152.7	153.6
50°	148.4	145.1	142.9	141.7	141.0	140.6	141.0	142.0	142.7	143.6	144.1
52.5°	135.6	133.5	132.1	131.3	131.1	131.5	131.5	132.7	133.9	134.0	134.2
55°	124.0	122.3	121.9	120.4	121.1	120.9	121.8	122.5	123.5	124.5	124.7
57.5°	112.3	110.7	109.7	109.8	110.0	110.7	111.4	112.6	113.8	115.0	115.0
60°	100.5	99.8	99.3	99.3	99.6	100.7	101.5	102.7	103.4	104.1	104.6
62.5°	89.8	89.1	88.6	88.9	89.9	90.5	91.5	92.0	92.7	93.4	93.6
65°	78.4	78.0	78.5	78.9	79.0	79.9	81.1	81.6	82.3	82.7	83.9
67.5°	68.0	68.0	67.8	68.3	69.4	69.5	70.7	72.1	72.1	72.8	73.7
70°	57.4	57.8	58.1	58.5	59.3	59.7	60.5	61.1	61.7	62.3	62.8
72.5°	47.7	47.7	48.1	47.9	48.6	49.5	50.2	50.7	51.4	52.1	52.6
75°	38.2	38.2	38.6	38.7	39.6	40.5	40.3	40.6	41.3	42.0	42.4
77.5°	29.6	29.2	29.6	29.7	30.1	30.8	31.0	31.5	32.3	32.2	32.5
80°	21.3	20.8	21.3	21.4	21.4	22.3	22.3	22.7	23.2	22.7	23.2
82.5°	13.7	13.5	13.8	13.8	14.2	14.0	14.4	14.4	14.9	14.7	14.9
85°	7.6	7.4	7.6	7.4	7.6	7.8	7.8	7.6	7.6	8.0	7.4
87.5°	2.9	2.8	2.6	2.6	2.4	2.2	2.1	2.1	2.1	1.7	1.7
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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CATALOG NUMBER: S122DRP-S290D927-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	450.0	450.0	450.0	450.0
2.5°	427.0	426.7	426.7	425.1
5°	400.4	399.9	399.0	399.9
7.5°	375.2	372.9	372.6	370.8
10°	347.0	345.6	345.4	342.1
12.5°	325.5	321.7	322.6	321.0
15°	300.1	300.1	299.4	296.5
17.5°	281.9	281.8	280.2	281.2
20°	266.0	265.0	262.9	262.9
22.5°	251.0	251.1	248.9	249.8
25°	239.9	238.5	237.5	238.0
27.5°	228.5	228.0	227.8	226.2
30°	218.8	217.1	217.4	216.5
32.5°	207.7	207.4	206.9	206.2
35°	197.9	198.0	197.2	197.5
37.5°	189.0	189.7	189.2	189.2
40°	180.4	180.4	180.4	180.9
42.5°	172.1	171.8	171.4	171.2
45°	162.4	162.9	163.1	162.2
47.5°	153.9	154.1	153.9	155.0
50°	144.9	144.6	144.9	144.6
52.5°	135.4	135.6	135.3	135.3
55°	125.4	125.7	125.6	125.6
57.5°	115.2	115.4	115.7	114.8
60°	104.5	105.3	105.2	104.8
62.5°	94.6	94.8	94.8	94.8
65°	84.4	84.8	84.2	84.8
67.5°	73.3	73.5	73.9	74.0
70°	63.1	63.0	63.5	64.0
72.5°	52.4	52.9	52.6	52.9
75°	42.0	42.5	42.4	42.9
77.5°	32.2	32.3	32.3	32.5
80°	23.2	22.8	22.5	23.2
82.5°	14.4	14.7	14.4	14.2
85°	7.4	7.3	6.9	6.9
87.5°	1.7	1.6	1.6	1.4
90°	0.0	0.0	0.0	0.0



TEST NUMBER: P242284
 CATALOG NUMBER: S122DRP-S290D927-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	15.76	17.28	16.13	17.59	17.91	19.02	20.53	19.38	20.85	21.16
	3H	17.17	18.53	17.55	18.86	19.22	20.02	21.39	20.40	21.71	22.08
	4H	17.67	18.95	18.07	19.30	19.68	20.34	21.62	20.74	21.97	22.35
	6H	18.03	19.21	18.44	19.57	19.96	20.54	21.72	20.95	22.08	22.48
	8H	18.14	19.26	18.56	19.65	20.05	20.58	21.71	21.01	22.10	22.50
	12H	18.21	19.29	18.64	19.67	20.10	20.60	21.68	21.03	22.06	22.49
4H	2H	16.62	17.90	17.02	18.25	18.62	19.23	20.50	19.63	20.85	21.23
	3H	18.18	19.24	18.59	19.64	20.04	20.57	21.63	20.98	22.03	22.43
	4H	18.77	19.72	19.20	20.14	20.58	21.07	22.03	21.51	22.44	22.88
	6H	19.21	20.04	19.67	20.49	20.95	21.41	22.24	21.86	22.68	23.14
	8H	19.35	20.13	19.82	20.57	21.04	21.48	22.26	21.95	22.70	23.17
	12H	19.46	20.15	19.94	20.63	21.10	21.52	22.22	22.01	22.69	23.16
8H	4H	19.20	19.98	19.66	20.42	20.89	21.20	21.98	21.66	22.42	22.89
	6H	19.73	20.37	20.23	20.86	21.34	21.64	22.28	22.14	22.77	23.25
	8H	19.93	20.50	20.44	21.01	21.50	21.77	22.35	22.29	22.86	23.34
	12H	20.09	20.59	20.60	21.08	21.65	21.86	22.37	22.37	22.86	23.43
12H	4H	19.26	19.95	19.74	20.43	20.90	21.20	21.89	21.68	22.37	22.84
	6H	19.81	20.38	20.32	20.89	21.38	21.64	22.21	22.15	22.72	23.21
	8H	20.05	20.56	20.56	21.05	21.62	21.82	22.32	22.33	22.82	23.38