

Scaled data based on original data using  
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State  
Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: NEO-RAY

Report Number: P242215

Luminaire Tested: **S121RDR-S305D927-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P242215  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-28)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S121RDR-S305D927-X4F0-XX-UDD-A-W  
Description: DEFINE 1 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER  
STANDARD LIGHT ENGINE  
Light Source: (92) 2700K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 833.5 lumens  
Efficiency: N/A  
Efficacy: 71.9 lumens/watt  
Spacing Criteria (0/90/45): 0.96 / 1.23 / 1.1  
Luminous Opening: Rectangular (W 3.88' x L: 0.09' x H: 0')  
CIE Type: Direct

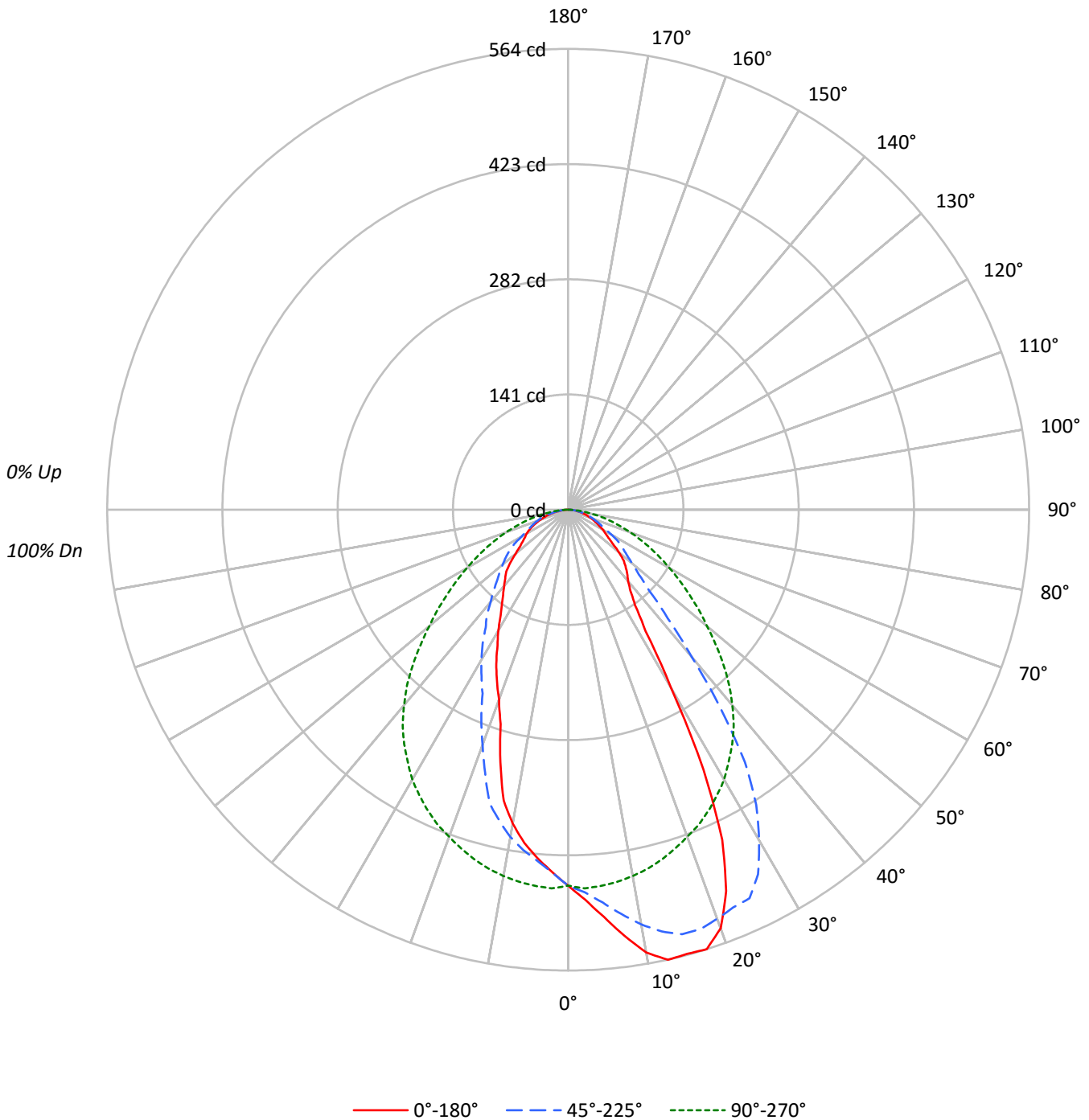
Input Watts (W): 11.6  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P242215

CATALOG NUMBER: S121RDR-S305D927-X4F0-XX-UDD-A-W

### Luminous Intensity Polar Plot





TEST NUMBER: P242215

CATALOG NUMBER: S121RDR-S305D927-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	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	111	107	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	82	87	83	80	84	81	78	76
3	94	85	78	73	92	84	77	72	81	75	71	78	74	70	76	72	68	67
4	88	77	69	64	85	76	69	63	73	67	62	71	66	61	69	65	61	59
5	81	70	62	56	79	69	62	56	67	60	55	65	59	55	63	58	54	52
6	76	64	56	50	74	63	56	50	61	55	50	60	54	49	58	53	49	47
7	71	59	51	45	69	58	51	45	57	50	45	55	49	45	54	48	44	43
8	67	54	47	41	65	54	46	41	52	46	41	51	45	41	50	45	40	39
9	63	50	43	38	61	50	43	38	49	42	37	48	42	37	47	41	37	35
10	59	47	40	35	58	46	39	35	45	39	35	44	39	34	44	38	34	33

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°
0°	13633	13633	13633
5°	14877	13750	12736
10°	16557	13696	11740
15°	17264	13592	9825
20°	17188	13432	7798
25°	14578	13283	6807
30°	8581	13052	5847
35°	5154	12656	5104
40°	4413	12083	4711
45°	4174	11263	4479
50°	3729	10229	3877
55°	3110	9335	3502
60°	2892	8510	3484
65°	2664	7747	3372
70°	2521	6982	3179
75°	2381	6182	2896
80°	2133	5170	2542
85°	2006	4046	2006



TEST NUMBER: P242215

CATALOG NUMBER: S121RDR-S305D927-X4F0-XX-UDD-A-W

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	44.1	5.3
10°-20°	125.6	15.1
20°-30°	171.6	20.6
30°-40°	159.9	19.2
40°-50°	132.2	15.9
50°-60°	97.5	11.7
60°-70°	62.3	7.5
70°-80°	32.1	3.8
80°-90°	8.2	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°	341.4	41.0
0°-40°	501.3	60.1
0°-60°	730.9	87.7
0°-90°	833.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	833.5	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	460	460	460	460	460	
5°	500	482	462	432	428	49
15°	563	538	443	372	320	159
25°	446	525	406	248	208	194
35°	142	377	350	176	141	97
45°	100	141	269	123	107	76
55°	60	81	181	88	68	55
65°	38	44	110	51	48	38
75°	21	23	54	28	25	22
85°	6	6	12	7	6	7
90°	0	0	0	0	0	



TEST NUMBER: P242215

CATALOG NUMBER: S121RDR-S305D927-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	460.1	460.1	460.1	460.1	460.1	460.1	460.1	460.1	460.1	460.1	460.1
2.5°	477.7	477.3	477.9	477.5	477.2	476.3	475.6	473.5	470.4	468.7	470.4
5°	500.2	501.6	501.0	500.4	498.8	497.4	494.3	492.4	486.9	482.5	483.7
7.5°	525.8	527.5	525.3	523.7	522.8	518.9	515.4	510.0	504.0	499.1	496.4
10°	550.3	550.9	550.2	548.8	545.8	541.5	536.5	530.4	522.8	515.4	510.4
12.5°	564.2	565.0	566.1	563.7	561.4	557.9	552.8	546.7	537.4	528.7	523.0
15°	562.8	563.5	565.4	564.5	563.5	561.9	559.0	554.0	547.4	537.9	529.8
17.5°	563.8	564.3	565.2	562.1	560.4	558.5	554.7	551.2	545.7	538.2	532.2
20°	545.1	553.6	552.6	556.7	558.5	558.3	554.7	548.1	540.5	532.9	530.1
22.5°	505.0	511.8	512.6	519.0	527.0	533.4	541.3	544.3	538.4	527.0	523.2
25°	445.9	450.7	455.6	464.7	473.2	491.0	507.3	519.5	526.3	524.7	517.3
27.5°	358.4	353.2	372.4	382.9	406.6	432.6	455.4	477.9	488.6	502.9	510.2
30°	250.8	250.3	264.8	283.1	318.6	342.4	385.2	421.3	449.5	467.1	486.9
32.5°	176.1	178.7	189.4	200.6	220.2	259.1	291.8	341.6	389.7	428.2	452.4
35°	142.5	142.9	145.3	152.0	164.0	185.6	211.0	259.4	324.6	377.0	413.2
37.5°	124.9	125.9	126.6	130.4	134.7	143.9	160.0	193.5	247.5	306.0	368.7
40°	114.1	115.0	115.7	116.9	119.5	123.8	134.4	150.5	181.6	235.4	305.3
42.5°	106.9	106.5	108.1	108.6	110.0	112.4	117.1	125.7	143.7	180.2	240.4
45°	99.6	100.1	100.1	100.8	102.0	103.4	105.3	110.7	119.9	140.6	187.8
47.5°	92.0	91.8	92.9	93.4	94.6	95.8	97.2	100.0	105.3	117.4	144.8
50°	80.9	81.3	83.2	84.9	86.6	88.2	89.9	91.7	95.1	101.7	118.5
52.5°	69.2	69.2	71.3	72.5	74.9	78.7	81.6	84.2	86.5	89.8	99.8
55°	60.2	60.4	61.1	62.1	63.8	65.7	69.5	74.0	77.8	80.6	86.1
57.5°	54.0	54.1	54.3	55.2	56.0	56.7	59.0	62.4	67.5	72.5	75.8
60°	48.8	48.6	48.6	49.1	49.8	50.7	51.9	53.3	56.0	61.4	67.3
62.5°	42.9	43.2	43.2	43.8	44.3	45.1	45.7	47.0	48.6	51.0	57.1
65°	38.0	38.4	38.0	38.6	38.9	39.4	40.3	41.0	42.4	43.9	46.4
67.5°	33.2	33.4	33.7	33.9	34.2	34.4	35.1	36.0	36.8	37.9	39.8
70°	29.1	29.1	29.1	29.4	29.7	29.7	30.3	30.6	31.5	32.5	33.6
72.5°	24.6	24.7	24.7	24.6	25.3	25.4	25.6	25.9	26.6	27.5	28.4
75°	20.8	20.4	20.4	20.6	21.1	21.1	21.3	21.4	22.0	22.7	23.2
77.5°	16.3	16.3	16.4	16.6	16.8	16.8	17.1	17.1	17.8	18.2	18.5
80°	12.5	12.8	13.0	12.8	12.8	13.0	13.0	13.3	13.5	13.7	14.0
82.5°	9.3	9.5	9.2	9.2	9.3	9.3	9.5	9.5	9.7	9.9	9.9
85°	5.9	5.9	6.1	5.9	6.1	5.9	5.9	6.2	6.1	6.1	6.2
87.5°	2.8	2.9	2.8	2.9	2.8	2.9	2.9	2.9	2.9	2.9	2.8
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: P242215

CATALOG NUMBER: S121RDR-S305D927-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	460.1	460.1	460.1	460.1	460.1	460.1	460.1	460.1	460.1	460.1	460.1
2.5°	469.9	469.7	468.9	467.0	465.6	463.0	463.0	463.9	459.4	456.2	456.1
5°	480.8	479.1	476.1	472.5	469.2	464.7	463.0	462.3	456.2	451.6	450.0
7.5°	492.4	488.1	483.1	477.2	471.6	465.2	462.0	459.4	451.6	445.9	442.4
10°	504.5	497.6	489.8	481.3	473.7	465.1	459.7	455.2	446.2	438.3	434.3
12.5°	515.2	505.5	495.7	484.6	474.2	463.3	455.9	450.0	439.5	430.0	425.1
15°	520.2	509.9	501.7	486.5	472.5	461.4	451.9	443.1	431.9	421.3	413.9
17.5°	524.6	513.1	502.4	488.1	471.8	457.5	446.0	434.8	422.7	411.6	402.5
20°	523.4	513.7	500.5	485.3	469.9	453.3	440.3	426.0	410.9	399.7	390.0
22.5°	516.4	508.5	494.8	480.3	465.4	447.6	432.9	417.3	398.8	386.5	375.7
25°	507.6	500.0	486.5	471.5	456.8	439.5	422.2	406.3	386.4	371.7	357.7
27.5°	500.7	489.3	475.8	459.0	444.8	428.4	410.2	394.2	372.7	356.5	340.2
30°	492.7	479.8	463.2	445.4	430.3	415.3	397.6	381.5	357.8	339.3	319.1
32.5°	469.9	470.1	450.4	430.5	414.4	398.3	382.6	365.4	341.9	320.1	299.4
35°	440.2	451.8	437.2	414.4	394.5	379.6	366.7	349.9	323.8	301.3	277.8
37.5°	400.4	420.8	422.5	398.8	376.9	359.4	346.6	332.6	306.3	282.1	258.7
40°	360.6	387.6	398.3	381.9	358.0	337.9	325.2	312.4	287.6	261.5	239.9
42.5°	311.8	355.6	368.9	364.1	338.5	316.8	303.4	291.8	267.7	242.1	220.7
45°	256.8	316.0	335.4	340.4	318.8	295.6	280.0	268.8	247.7	225.2	202.9
47.5°	206.3	271.4	303.4	308.5	297.1	274.6	256.8	245.1	228.3	208.9	186.8
50°	157.4	224.0	269.8	277.8	275.0	252.2	235.7	221.9	209.1	191.8	171.0
52.5°	125.2	179.0	233.5	248.4	249.2	231.2	213.9	201.3	188.9	175.2	156.3
55°	100.0	138.4	193.5	218.8	221.2	208.8	192.8	180.7	171.4	158.6	142.7
57.5°	84.2	107.1	155.0	189.0	190.1	186.6	171.4	161.4	153.6	142.5	128.5
60°	71.9	84.9	119.5	159.3	164.5	164.5	152.4	143.6	136.1	127.8	114.5
62.5°	62.3	69.4	90.6	126.6	139.9	142.0	134.4	126.6	121.1	112.8	100.5
65°	52.4	57.8	70.2	97.9	116.2	120.0	116.2	110.5	106.2	97.5	87.9
67.5°	43.1	48.3	56.0	74.2	94.3	98.9	98.2	95.3	90.8	84.4	74.2
70°	35.6	38.7	44.4	55.0	74.0	81.1	83.2	80.6	76.6	69.7	62.3
72.5°	29.4	31.8	34.6	42.2	55.3	64.7	68.1	66.8	63.8	57.2	51.0
75°	24.0	25.6	27.5	31.1	39.8	50.3	54.3	54.0	51.0	45.5	40.5
77.5°	19.4	19.9	21.3	23.5	27.8	37.4	40.5	41.5	39.3	34.6	30.6
80°	14.5	15.2	15.9	17.1	19.2	24.7	28.7	30.3	28.4	25.6	21.6
82.5°	10.2	10.4	11.1	11.8	12.8	15.0	19.2	20.9	19.2	16.3	15.0
85°	6.4	6.2	6.4	6.6	7.6	8.1	10.7	11.9	11.6	9.9	8.5
87.5°	2.9	2.9	2.8	2.9	2.8	3.3	3.8	5.5	4.2	3.6	3.3
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: P242215

CATALOG NUMBER: S121RDR-S305D927-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	460.1	460.1	460.1	460.1	460.1	460.1	460.1	460.1	460.1	460.1	460.1
2.5°	454.7	454.2	452.4	450.0	447.9	444.5	444.5	445.4	445.2	445.5	445.2
5°	447.4	445.0	442.4	439.1	436.0	431.5	431.0	431.3	431.2	431.0	430.0
7.5°	438.1	435.3	432.0	427.9	424.4	420.1	418.9	418.5	417.2	416.6	415.3
10°	429.1	425.8	421.5	416.5	411.8	406.8	403.7	401.9	399.7	397.3	395.2
12.5°	419.1	414.7	409.2	403.2	395.4	389.8	385.2	382.2	379.1	375.0	372.0
15°	408.3	399.5	392.9	383.1	373.6	371.7	364.6	355.2	354.6	334.3	327.2
17.5°	394.0	386.7	374.4	361.6	348.7	338.1	338.3	313.0	305.3	305.1	292.6
20°	379.1	369.1	354.9	341.9	328.3	306.5	289.2	280.9	268.2	263.4	256.3
22.5°	361.6	348.5	331.9	314.3	295.2	277.6	260.6	252.7	246.3	240.9	238.0
25°	340.9	327.6	307.7	285.7	264.4	248.0	238.7	235.0	224.1	220.3	216.7
27.5°	320.0	305.4	279.5	258.4	240.9	229.7	220.0	213.9	208.8	199.1	194.7
30°	300.1	276.7	255.3	235.9	222.8	212.2	205.1	192.8	185.6	181.1	179.2
32.5°	278.5	253.5	234.2	217.4	203.9	194.7	184.2	175.9	172.6	166.7	158.3
35°	256.3	233.7	213.4	199.9	188.3	175.9	169.3	161.4	153.1	148.6	147.9
37.5°	234.9	213.4	198.9	184.7	170.7	163.4	153.8	145.3	142.3	138.2	133.7
40°	215.5	197.2	183.7	167.4	158.9	147.7	140.3	135.9	128.8	127.3	125.9
42.5°	199.6	183.8	168.6	154.1	144.2	135.2	128.7	123.7	121.4	117.6	116.4
45°	183.5	169.0	153.4	142.0	130.8	123.1	118.6	114.3	111.7	110.7	108.6
47.5°	169.0	154.8	140.4	126.4	118.8	113.8	108.8	106.5	105.0	102.7	101.5
50°	155.1	139.4	125.9	117.1	109.0	104.5	101.2	99.1	96.7	94.3	90.8
52.5°	141.1	127.6	114.7	105.3	99.3	96.3	93.2	91.0	86.1	81.5	78.5
55°	126.9	113.1	102.6	95.5	91.1	88.0	84.4	77.8	73.3	70.7	69.4
57.5°	114.1	101.7	92.4	86.5	83.4	78.2	71.8	67.6	65.4	64.3	63.6
60°	100.5	89.8	82.0	77.5	72.6	65.7	62.3	60.2	59.5	59.1	58.6
62.5°	88.7	79.2	73.2	68.1	61.2	57.6	55.7	54.7	54.7	54.1	53.8
65°	76.3	68.8	63.6	56.4	52.8	51.2	50.5	50.0	49.5	49.3	48.6
67.5°	66.1	59.5	52.8	48.9	46.7	45.8	45.1	45.0	44.3	43.8	43.2
70°	55.7	49.3	43.8	42.0	40.8	40.5	39.8	39.1	38.6	37.9	37.5
72.5°	45.3	39.3	37.4	36.5	35.3	34.8	33.9	33.4	32.5	32.2	31.8
75°	34.6	32.2	31.1	30.4	29.6	28.4	28.0	27.5	27.2	26.6	26.1
77.5°	27.5	26.1	24.9	24.0	23.3	22.5	21.8	21.6	21.3	20.8	20.6
80°	20.6	19.5	19.0	18.2	17.3	16.8	16.4	16.3	15.7	15.6	15.4
82.5°	14.2	13.3	13.0	11.9	11.6	11.6	11.4	11.1	10.7	10.6	10.4
85°	8.0	7.6	7.1	7.3	6.7	6.7	6.6	6.4	6.2	6.1	5.9
87.5°	3.1	2.9	2.8	2.6	2.6	2.1	2.1	2.1	2.2	2.1	1.9
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: P242215

CATALOG NUMBER: S121RDR-S305D927-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	460.1	460.1	460.1	460.1
2.5°	445.7	446.0	444.8	444.1
5°	430.0	429.4	428.7	428.2
7.5°	413.9	413.4	413.4	411.3
10°	394.3	392.9	391.9	390.2
12.5°	369.4	367.4	366.7	364.6
15°	322.4	318.1	315.1	320.3
17.5°	289.7	278.5	279.3	275.0
20°	256.1	251.6	253.9	247.3
22.5°	234.4	231.6	229.0	227.6
25°	214.1	210.8	206.9	208.2
27.5°	188.7	188.7	186.1	187.1
30°	175.7	174.3	170.0	170.9
32.5°	155.5	153.8	153.2	153.6
35°	145.8	143.0	142.2	141.1
37.5°	132.3	131.3	131.4	130.8
40°	123.3	122.5	121.4	121.8
42.5°	115.5	115.0	114.0	114.1
45°	107.9	107.4	106.9	106.9
47.5°	99.4	98.4	97.5	96.5
50°	88.4	86.3	84.7	84.1
52.5°	76.4	75.4	74.4	74.4
55°	68.8	68.3	68.0	67.8
57.5°	63.5	63.1	63.1	62.6
60°	58.6	58.6	58.5	58.8
62.5°	54.0	53.4	53.6	53.6
65°	48.6	48.4	48.3	48.1
67.5°	42.9	42.7	42.9	42.5
70°	37.2	37.2	37.0	36.7
72.5°	31.3	31.7	31.3	31.1
75°	25.8	25.6	25.8	25.3
77.5°	20.6	19.9	20.2	20.4
80°	15.2	15.2	15.0	14.9
82.5°	10.2	10.4	10.0	10.0
85°	5.9	5.9	5.5	5.9
87.5°	1.7	1.7	1.7	2.1
90°	0.0	0.0	0.0	0.0

(END OF REPORT)