

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: P242245

Luminaire Tested: **S121RDR-S305D940-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P242245  
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-S305D940-X4F0-XX-UDD-A-W  
Description: DEFINE 1 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER  
STANDARD LIGHT ENGINE  
Light Source: (92) 4000K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 938.2 lumens  
Efficiency: N/A  
Efficacy: 80.9 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

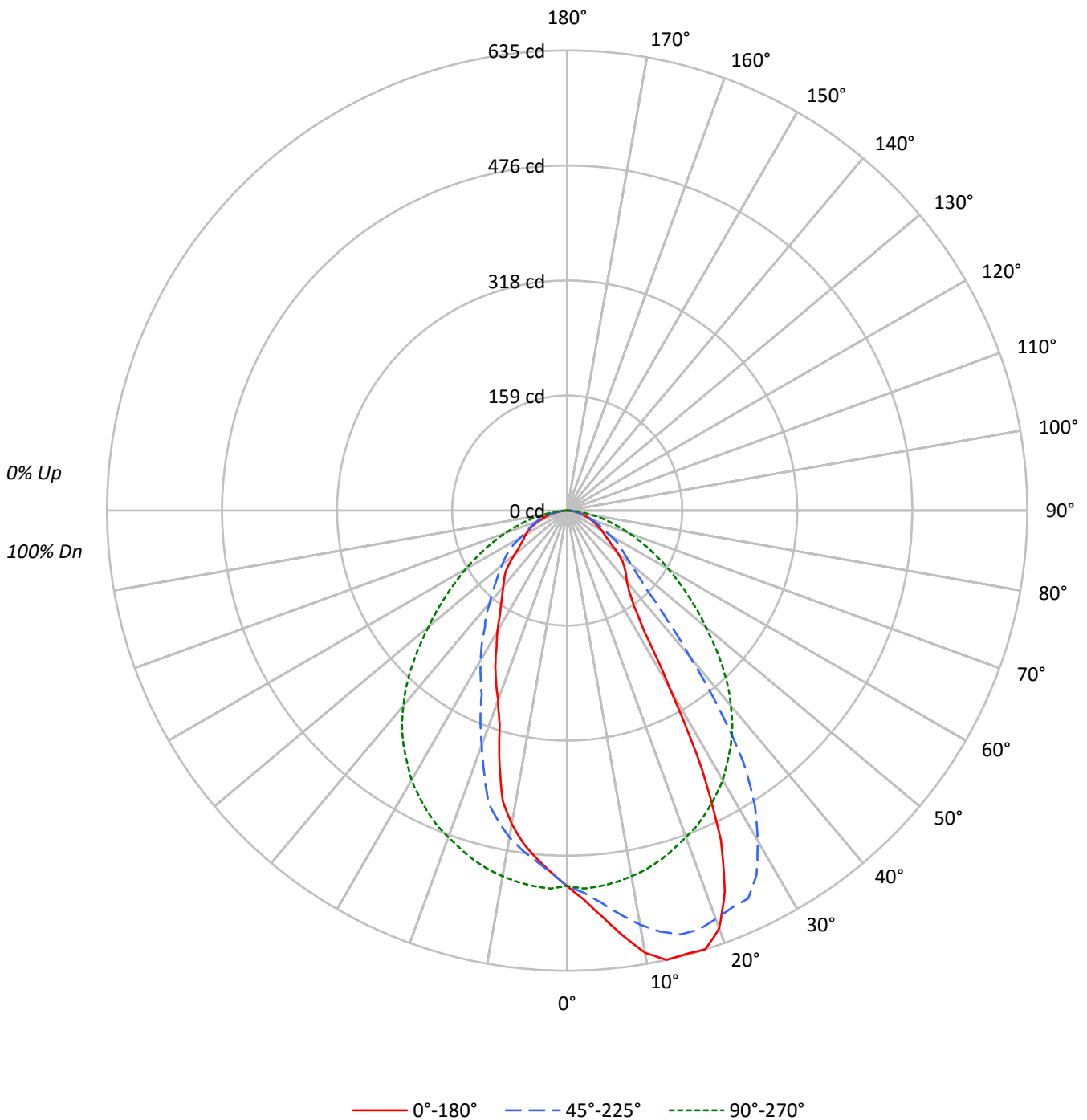
Input Watts (W): 11.6  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	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	100	100	100	100	100		
1	111	107	103	100	108	104	101	98	100	97	95	96	94	92	93	91	89	87	87	87	87	87	87	87		
2	102	95	89	84	100	93	88	83	90	85	82	87	83	80	84	81	78	76	76	76	76	76	76	76		
3	94	85	78	73	92	84	77	72	81	75	71	78	74	70	76	72	68	67	67	67	67	67	67	67		
4	88	77	69	64	85	76	69	63	73	67	62	71	66	61	69	65	61	59	59	59	59	59	59	59		
5	81	70	62	56	79	69	62	56	67	60	55	65	59	55	63	58	54	52	52	52	52	52	52	52		
6	76	64	56	50	74	63	56	50	61	55	50	60	54	49	58	53	49	47	47	47	47	47	47	47		
7	71	59	51	45	69	58	51	45	57	50	45	55	49	45	54	48	44	43	43	43	43	43	43	43		
8	67	54	47	41	65	54	46	41	52	46	41	51	45	41	50	45	40	39	39	39	39	39	39	39		
9	63	50	43	38	61	50	43	38	49	42	37	48	42	37	47	41	37	35	35	35	35	35	35	35		
10	59	47	40	35	58	46	39	35	45	39	35	44	39	34	44	38	34	33	33	33	33	33	33	33		

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

	0°	90°	180°
0°	15345	15345	15345
5°	16745	15478	14336
10°	18639	15416	13214
15°	19433	15301	11061
20°	19348	15119	8778
25°	16408	14950	7663
30°	9658	14695	6579
35°	5802	14244	5748
40°	4970	13599	5303
45°	4697	12676	5041
50°	4199	11515	4361
55°	3497	10507	3941
60°	3253	9576	3923
65°	3001	8722	3793
70°	2833	7857	3578
75°	2679	6949	3251
80°	2389	5819	2850
85°	2244	4556	2244



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	49.6	5.3
10°-20°	141.4	15.1
20°-30°	193.2	20.6
30°-40°	180.0	19.2
40°-50°	148.8	15.9
50°-60°	109.7	11.7
60°-70°	70.1	7.5
70°-80°	36.1	3.8
80°-90°	9.3	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°	384.3	41.0
0°-40°	564.2	60.1
0°-60°	822.7	87.7
0°-90°	938.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	938.2	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	518	518	518	518	518	
5°	563	543	520	486	482	56
15°	634	606	499	418	361	179
25°	502	591	457	279	234	218
35°	160	424	394	198	159	109
45°	112	158	302	139	120	86
55°	68	91	203	99	76	62
65°	43	49	124	58	54	43
75°	23	26	61	32	28	24
85°	7	7	13	8	7	7
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°	517.9	517.9	517.9	517.9	517.9	517.9	517.9	517.9	517.9	517.9	517.9
2.5°	537.7	537.3	537.9	537.5	537.1	536.2	535.4	533.0	529.5	527.6	529.5
5°	563.0	564.6	564.0	563.2	561.5	559.9	556.4	554.3	548.0	543.2	544.5
7.5°	591.8	593.8	591.2	589.5	588.5	584.0	580.2	574.1	567.3	561.9	558.7
10°	619.5	620.1	619.3	617.7	614.4	609.5	603.9	597.1	588.5	580.2	574.5
12.5°	635.1	636.0	637.2	634.5	631.9	628.0	622.2	615.4	604.9	595.1	588.7
15°	633.5	634.3	636.4	635.4	634.3	632.5	629.2	623.6	616.2	605.5	596.3
17.5°	634.7	635.2	636.2	632.7	630.8	628.6	624.3	620.5	614.2	605.9	599.0
20°	613.6	623.2	622.0	626.7	628.6	628.4	624.3	616.9	608.4	599.8	596.7
22.5°	568.5	576.1	577.0	584.2	593.2	600.4	609.4	612.7	606.0	593.2	588.9
25°	501.9	507.3	512.8	523.1	532.6	552.7	571.0	584.8	592.4	590.7	582.3
27.5°	403.4	397.5	419.2	431.0	457.7	486.9	512.6	537.9	550.0	566.1	574.3
30°	282.3	281.7	298.1	318.7	358.6	385.5	433.6	474.2	506.0	525.8	548.0
32.5°	198.2	201.1	213.2	225.8	247.8	291.6	328.4	384.5	438.6	482.0	509.3
35°	160.4	160.8	163.5	171.1	184.6	208.9	237.5	292.0	365.4	424.4	465.1
37.5°	140.6	141.7	142.5	146.8	151.7	162.0	180.1	217.8	278.6	344.4	415.1
40°	128.5	129.5	130.2	131.6	134.5	139.4	151.3	169.4	204.4	265.0	343.6
42.5°	120.3	119.9	121.7	122.3	123.8	126.5	131.8	141.5	161.8	202.9	270.6
45°	112.1	112.7	112.7	113.5	114.9	116.4	118.6	124.6	134.9	158.3	211.4
47.5°	103.6	103.4	104.5	105.1	106.5	107.9	109.4	112.5	118.6	132.2	162.9
50°	91.1	91.5	93.6	95.6	97.5	99.3	101.2	103.2	107.1	114.5	133.4
52.5°	77.9	77.9	80.2	81.6	84.3	88.6	91.9	94.8	97.3	101.0	112.3
55°	67.7	67.9	68.7	69.9	71.8	74.0	78.3	83.3	87.6	90.7	97.0
57.5°	60.7	60.9	61.1	62.1	63.1	63.9	66.4	70.3	75.9	81.6	85.3
60°	54.9	54.7	54.7	55.3	56.1	57.0	58.4	60.0	63.1	69.1	75.7
62.5°	48.3	48.7	48.7	49.3	49.8	50.8	51.4	53.0	54.7	57.4	64.2
65°	42.8	43.2	42.8	43.4	43.8	44.4	45.4	46.1	47.7	49.4	52.2
67.5°	37.4	37.6	38.0	38.2	38.5	38.7	39.5	40.5	41.5	42.6	44.8
70°	32.7	32.7	32.7	33.1	33.5	33.5	34.1	34.5	35.4	36.6	37.8
72.5°	27.6	27.8	27.8	27.6	28.4	28.6	28.8	29.2	30.0	31.0	31.9
75°	23.4	23.0	23.0	23.2	23.8	23.8	23.9	24.1	24.7	25.5	26.1
77.5°	18.3	18.3	18.5	18.7	18.9	18.9	19.3	19.3	20.1	20.4	20.8
80°	14.0	14.4	14.6	14.4	14.4	14.6	14.6	15.0	15.2	15.4	15.8
82.5°	10.5	10.7	10.3	10.3	10.5	10.5	10.7	10.7	10.9	11.1	11.1
85°	6.6	6.6	6.8	6.6	6.8	6.6	6.6	7.0	6.8	6.8	7.0
87.5°	3.1	3.3	3.1	3.3	3.1	3.3	3.3	3.3	3.3	3.3	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):**

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	517.9	517.9	517.9	517.9	517.9	517.9	517.9	517.9	517.9	517.9	517.9
2.5°	529.0	528.8	527.8	525.6	524.1	521.2	521.2	522.1	517.1	513.6	513.4
5°	541.2	539.3	536.0	531.9	528.2	523.1	521.2	520.4	513.6	508.3	506.6
7.5°	554.3	549.4	543.7	537.1	530.9	523.7	520.0	517.1	508.3	501.9	498.0
10°	567.9	560.1	551.3	541.8	533.2	523.5	517.5	512.4	502.3	493.3	488.8
12.5°	580.0	569.1	558.0	545.5	533.8	521.6	513.2	506.6	494.7	484.0	478.5
15°	585.6	573.9	564.8	547.6	531.9	519.4	508.7	498.8	486.1	474.2	465.9
17.5°	590.5	577.6	565.6	549.4	531.1	514.9	502.1	489.4	475.8	463.3	453.0
20°	589.1	578.2	563.4	546.3	529.0	510.3	495.7	479.5	462.6	449.9	439.0
22.5°	581.3	572.4	557.0	540.6	523.9	503.8	487.3	469.8	448.9	435.1	422.8
25°	571.4	562.8	547.6	530.7	514.2	494.7	475.2	457.3	434.9	418.4	402.6
27.5°	563.6	550.8	535.6	516.7	500.7	482.2	461.8	443.7	419.5	401.2	382.9
30°	554.6	540.0	521.4	501.3	484.4	467.4	447.6	429.5	402.8	382.0	359.2
32.5°	529.0	529.1	507.0	484.6	466.5	448.4	430.6	411.4	384.9	360.4	337.0
35°	495.5	508.5	492.2	466.5	444.1	427.3	412.7	393.8	364.4	339.1	312.7
37.5°	450.7	473.7	475.6	448.9	424.2	404.5	390.1	374.4	344.8	317.5	291.2
40°	405.9	436.3	448.4	429.9	403.0	380.4	366.0	351.6	323.8	294.4	270.0
42.5°	351.0	400.3	415.3	409.8	381.0	356.7	341.5	328.4	301.4	272.6	248.4
45°	289.1	355.7	377.5	383.1	358.8	332.7	315.2	302.5	278.8	253.5	228.4
47.5°	232.3	305.5	341.5	347.3	334.5	309.2	289.1	275.9	257.0	235.2	210.3
50°	177.2	252.1	303.7	312.7	309.5	283.8	265.4	249.8	235.4	215.9	192.5
52.5°	140.9	201.5	262.8	279.6	280.5	260.3	240.8	226.6	212.6	197.2	176.0
55°	112.5	155.7	217.8	246.3	249.0	235.0	217.1	203.4	192.9	178.5	160.6
57.5°	94.8	120.5	174.4	212.8	214.0	210.1	192.9	181.6	172.9	160.4	144.6
60°	81.0	95.6	134.5	179.3	185.1	185.1	171.5	161.6	153.2	143.9	128.9
62.5°	70.1	78.1	102.0	142.5	157.5	159.8	151.3	142.5	136.3	126.9	113.1
65°	59.0	65.0	79.0	110.2	130.8	135.1	130.8	124.4	119.5	109.8	98.9
67.5°	48.5	54.3	63.1	83.5	106.1	111.4	110.6	107.3	102.2	95.0	83.5
70°	40.1	43.6	50.0	61.9	83.3	91.3	93.6	90.7	86.2	78.5	70.1
72.5°	33.1	35.8	38.9	47.5	62.3	72.8	76.7	75.1	71.8	64.4	57.4
75°	27.1	28.8	31.0	35.0	44.8	56.7	61.1	60.7	57.4	51.2	45.6
77.5°	21.8	22.4	23.9	26.5	31.3	42.1	45.6	46.7	44.2	38.9	34.5
80°	16.4	17.1	17.9	19.3	21.6	27.8	32.3	34.1	31.9	28.8	24.3
82.5°	11.5	11.7	12.5	13.2	14.4	16.9	21.6	23.6	21.6	18.3	16.9
85°	7.2	7.0	7.2	7.4	8.6	9.2	12.1	13.4	13.0	11.1	9.5
87.5°	3.3	3.3	3.1	3.3	3.1	3.7	4.3	6.2	4.7	4.1	3.7
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):**

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	517.9	517.9	517.9	517.9	517.9	517.9	517.9	517.9	517.9	517.9	517.9
2.5°	511.8	511.2	509.3	506.6	504.2	500.3	500.3	501.3	501.1	501.5	501.1
5°	503.6	500.9	498.0	494.3	490.8	485.7	485.1	485.5	485.3	485.1	484.0
7.5°	493.1	490.0	486.3	481.6	477.7	472.9	471.5	471.1	469.6	469.0	467.4
10°	483.0	479.3	474.4	468.8	463.5	457.9	454.4	452.4	449.9	447.2	444.8
12.5°	471.7	466.8	460.6	453.8	445.0	438.8	433.6	430.2	426.7	422.1	418.8
15°	459.6	449.7	442.3	431.2	420.5	418.4	410.4	399.9	399.1	376.3	368.3
17.5°	443.5	435.3	421.5	407.1	392.5	380.6	380.8	352.4	343.6	343.4	329.4
20°	426.7	415.5	399.5	384.9	369.5	345.0	325.5	316.2	302.0	296.5	288.5
22.5°	407.1	392.3	373.6	353.7	332.3	312.5	293.4	284.4	277.2	271.2	267.9
25°	383.7	368.7	346.3	321.6	297.7	279.2	268.7	264.6	252.3	248.0	243.9
27.5°	360.2	343.8	314.6	290.9	271.2	258.5	247.6	240.8	235.0	224.1	219.2
30°	337.8	311.5	287.4	265.5	250.8	238.9	230.9	217.1	208.9	203.8	201.7
32.5°	313.4	285.4	263.6	244.7	229.5	219.2	207.3	198.0	194.3	187.7	178.1
35°	288.5	263.0	240.2	225.1	212.0	198.0	190.6	181.6	172.3	167.2	166.5
37.5°	264.4	240.2	223.9	207.9	192.2	184.0	173.1	163.5	160.2	155.6	150.5
40°	242.6	221.9	206.8	188.5	178.9	166.3	157.9	153.0	145.0	143.3	141.7
42.5°	224.7	206.9	189.8	173.5	162.4	152.2	144.8	139.2	136.7	132.4	131.0
45°	206.6	190.2	172.7	159.8	147.2	138.6	133.6	128.7	125.8	124.6	122.3
47.5°	190.2	174.2	158.1	142.3	133.7	128.1	122.5	119.9	118.2	115.6	114.3
50°	174.6	156.9	141.7	131.8	122.6	117.6	113.9	111.6	108.8	106.1	102.2
52.5°	158.9	143.7	129.1	118.6	111.7	108.4	104.9	102.4	97.0	91.7	88.4
55°	142.9	127.3	115.4	107.5	102.6	99.1	95.0	87.6	82.5	79.6	78.1
57.5°	128.5	114.5	104.0	97.3	93.8	88.0	80.8	76.1	73.6	72.4	71.6
60°	113.1	101.0	92.3	87.2	81.8	74.0	70.1	67.7	67.0	66.6	66.0
62.5°	99.9	89.2	82.4	76.7	68.9	64.8	62.7	61.5	61.5	60.9	60.5
65°	85.9	77.5	71.6	63.5	59.4	57.6	56.8	56.3	55.7	55.5	54.7
67.5°	74.4	67.0	59.4	55.1	52.6	51.6	50.8	50.6	49.8	49.3	48.7
70°	62.7	55.5	49.3	47.3	45.9	45.6	44.8	44.0	43.4	42.6	42.2
72.5°	51.0	44.2	42.1	41.1	39.7	39.1	38.2	37.6	36.6	36.2	35.8
75°	38.9	36.2	35.0	34.3	33.3	31.9	31.5	31.0	30.6	30.0	29.4
77.5°	31.0	29.4	28.0	27.1	26.3	25.3	24.5	24.3	23.9	23.4	23.2
80°	23.2	22.0	21.4	20.4	19.5	18.9	18.5	18.3	17.7	17.5	17.3
82.5°	16.0	15.0	14.6	13.4	13.0	13.0	12.8	12.5	12.1	11.9	11.7
85°	9.0	8.6	8.0	8.2	7.6	7.6	7.4	7.2	7.0	6.8	6.6
87.5°	3.5	3.3	3.1	2.9	2.9	2.3	2.3	2.3	2.5	2.3	2.1
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: P242245

CATALOG NUMBER: S121RDR-S305D940-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	517.9	517.9	517.9	517.9
2.5°	501.7	502.1	500.7	499.9
5°	484.0	483.4	482.6	482.0
7.5°	465.9	465.3	465.3	463.0
10°	443.9	442.3	441.1	439.2
12.5°	415.8	413.5	412.7	410.4
15°	362.9	358.0	354.7	360.6
17.5°	326.1	313.4	314.4	309.5
20°	288.3	283.3	285.8	278.4
22.5°	263.8	260.7	257.8	256.2
25°	241.0	237.3	232.8	234.4
27.5°	212.4	212.4	209.5	210.6
30°	197.8	196.2	191.4	192.3
32.5°	175.0	173.1	172.5	172.9
35°	164.1	161.0	160.0	158.9
37.5°	148.9	147.8	148.0	147.2
40°	138.8	137.8	136.7	137.1
42.5°	130.0	129.5	128.3	128.5
45°	121.5	120.9	120.3	120.3
47.5°	111.9	110.8	109.8	108.6
50°	99.5	97.1	95.4	94.6
52.5°	86.0	84.9	83.7	83.7
55°	77.5	76.9	76.5	76.3
57.5°	71.4	71.1	71.1	70.5
60°	66.0	66.0	65.8	66.2
62.5°	60.7	60.2	60.4	60.4
65°	54.7	54.5	54.3	54.1
67.5°	48.3	48.1	48.3	47.9
70°	41.9	41.9	41.7	41.3
72.5°	35.2	35.6	35.2	35.0
75°	29.0	28.8	29.0	28.4
77.5°	23.2	22.4	22.8	23.0
80°	17.1	17.1	16.9	16.7
82.5°	11.5	11.7	11.3	11.3
85°	6.6	6.6	6.2	6.6
87.5°	1.9	1.9	1.9	2.3
90°	0.0	0.0	0.0	0.0

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