

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: P243075

Luminaire Tested: **S121RDR-H305D927-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P243075
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-67)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S121RDR-H305D927-X4F0-XX-UDD-A-W
Description: DEFINE 1 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 2700K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 775.3 lumens
Efficiency: N/A
Efficacy: 69.2 lumens/watt
Spacing Criteria (0/90/45): 0.89 / 1.21 / 1.07
Luminous Opening: Rectangular (W 3.88' x L: 0.09' x H: 0')
CIE Type: Direct

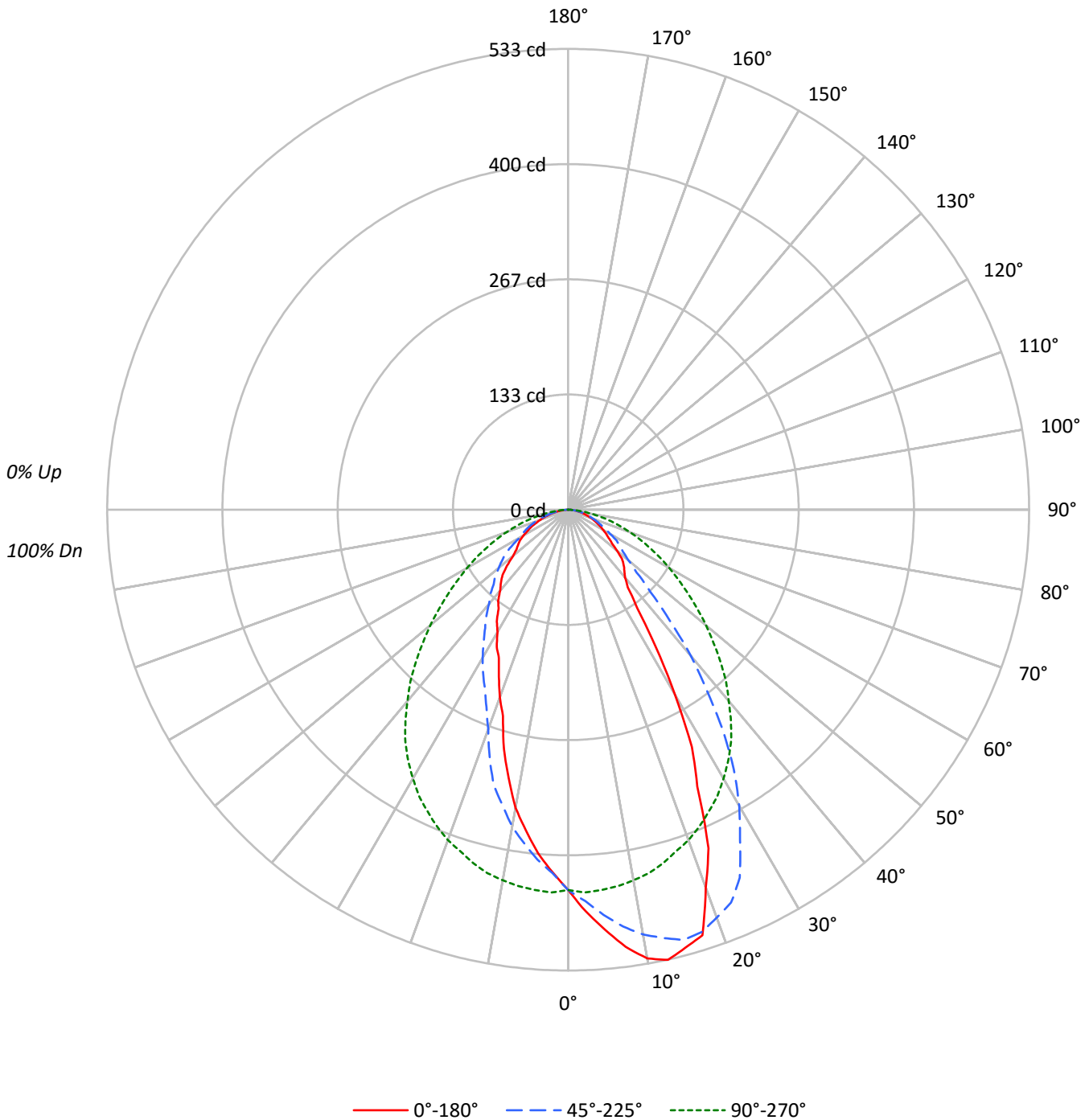
Input Watts (W): 11.2
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P243075

CATALOG NUMBER: S121RDR-H305D927-X4F0-XX-UDD-A-W

Luminous Intensity Polar Plot





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CATALOG NUMBER: S121RDR-H305D927-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	81	87	83	80	84	81	78	76
3	94	85	78	73	92	84	77	72	81	75	71	78	73	70	76	72	68	66
4	87	77	69	63	85	76	69	63	73	67	62	71	66	61	69	64	61	59
5	81	70	62	56	79	69	61	56	67	60	55	65	59	55	63	58	54	52
6	76	64	56	50	74	63	55	50	61	55	50	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	46	41	51	45	41	50	44	40	39
9	62	50	43	38	61	50	42	38	49	42	37	48	42	37	47	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°	90°	180°
0°	13031	13031	13031
5°	14500	13134	11867
10°	15856	13097	10536
15°	16083	12988	8801
20°	14662	12821	7277
25°	11547	12587	6192
30°	8440	12283	5584
35°	5039	11875	5075
40°	3949	11174	4734
45°	3809	10430	4505
50°	3393	9593	3821
55°	2965	8730	3647
60°	2773	7988	3538
65°	2580	7263	3281
70°	2443	6549	2989
75°	2244	5827	2656
80°	2031	4726	2321
85°	1904	3604	1700



TEST NUMBER: P243075

CATALOG NUMBER: S121RDR-H305D927-X4F0-XX-UDD-A-W

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	42.0	5.4
10°-20°	117.1	15.1
20°-30°	155.7	20.1
30°-40°	148.6	19.2
40°-50°	123.3	15.9
50°-60°	91.7	11.8
60°-70°	59.4	7.7
70°-80°	30.2	3.9
80°-90°	7.4	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°	314.8	40.6
0°-40°	463.4	59.8
0°-60°	678.3	87.5
0°-90°	775.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	775.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	440	440	440	440	440	
5°	488	470	442	406	399	48
15°	524	515	423	331	287	146
25°	353	470	385	228	189	164
35°	139	312	328	167	140	95
45°	91	134	249	122	108	69
55°	57	73	169	88	71	52
65°	37	42	104	53	47	37
75°	20	21	51	26	23	21
85°	6	6	11	6	5	6
90°	0	0	0	0	0	



TEST NUMBER: P243075

CATALOG NUMBER: S121RDR-H305D927-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	439.8	439.8	439.8	439.8	439.8	439.8	439.8	439.8	439.8	439.8	439.8
2.5°	465.0	463.8	465.1	464.6	462.5	463.0	460.3	458.7	454.7	453.2	453.2
5°	487.5	489.2	488.2	488.5	486.4	485.0	482.2	479.1	474.1	470.4	469.1
7.5°	510.1	510.6	511.1	509.7	507.3	504.9	501.0	496.3	490.8	486.2	482.6
10°	527.0	528.2	527.5	525.5	523.7	520.2	515.9	510.9	504.9	498.8	494.3
12.5°	533.3	534.3	535.8	534.6	534.5	532.8	528.5	522.4	515.1	507.4	502.3
15°	524.3	523.7	527.7	526.7	526.3	525.7	526.8	525.5	521.7	515.1	508.8
17.5°	516.1	515.7	519.7	520.7	519.2	517.0	515.7	514.1	512.2	512.4	511.6
20°	465.0	475.1	477.1	482.4	493.7	501.1	508.6	508.3	502.9	502.1	501.8
22.5°	423.9	427.7	425.8	434.5	440.6	454.0	467.1	483.7	494.8	492.0	490.2
25°	353.2	365.1	370.6	381.4	397.0	414.1	421.5	439.1	456.2	469.5	479.6
27.5°	309.4	312.1	315.6	326.7	332.5	348.1	375.9	399.8	415.7	430.2	456.9
30°	246.7	247.9	260.0	266.2	283.2	298.5	322.7	341.9	373.9	395.3	415.9
32.5°	188.4	187.4	200.6	207.8	224.7	245.3	272.3	290.2	321.5	356.5	381.1
35°	139.3	139.1	146.3	151.2	169.8	185.6	219.9	243.3	277.6	311.9	343.6
37.5°	113.4	113.3	114.8	119.1	126.9	144.6	161.2	195.8	229.3	263.2	302.8
40°	102.1	103.0	103.3	105.3	108.0	113.3	123.4	147.6	180.4	220.7	260.5
42.5°	96.2	96.2	96.5	97.0	98.3	99.8	106.0	115.2	141.6	173.8	218.4
45°	90.9	91.0	91.4	91.7	91.4	92.2	95.0	98.8	109.1	134.5	177.6
47.5°	84.6	84.4	85.2	85.7	86.4	87.4	87.6	89.5	94.0	107.3	138.6
50°	73.6	73.8	74.6	76.6	78.8	80.6	81.8	83.1	84.6	90.9	107.5
52.5°	63.7	63.8	64.3	65.8	67.8	70.1	73.8	76.8	77.9	79.9	89.2
55°	57.4	57.4	58.0	58.9	59.4	61.0	63.5	66.8	71.1	72.8	76.8
57.5°	52.1	52.1	52.4	52.4	53.1	53.9	55.6	57.2	60.9	66.2	68.7
60°	46.8	46.8	47.1	47.1	47.9	48.3	49.4	50.4	52.4	56.0	61.0
62.5°	41.8	41.5	41.8	42.0	42.5	42.9	43.8	44.9	46.1	48.3	51.9
65°	36.8	36.6	37.0	37.3	37.6	38.3	38.8	39.6	40.6	41.8	43.6
67.5°	32.5	32.3	32.5	33.0	32.8	33.2	34.0	34.3	35.3	36.5	38.0
70°	28.2	27.9	28.2	28.2	28.4	28.9	28.9	29.7	30.5	31.2	32.5
72.5°	23.5	23.7	23.5	23.7	24.0	24.2	24.5	25.0	25.5	26.2	27.0
75°	19.6	19.6	19.7	19.9	20.2	20.2	20.4	20.7	21.1	21.4	22.4
77.5°	15.6	15.8	15.9	16.1	16.1	16.3	16.4	16.6	17.1	17.2	17.7
80°	11.9	12.1	12.1	12.1	12.4	12.1	12.4	12.8	12.8	12.9	13.3
82.5°	8.6	8.8	8.6	8.8	9.0	9.0	8.8	9.0	9.0	9.3	9.3
85°	5.6	5.3	5.3	5.3	5.3	5.3	5.5	5.6	5.5	5.5	5.6
87.5°	2.3	2.3	2.3	2.3	2.5	2.3	2.5	2.5	2.5	2.3	2.5
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: P243075

CATALOG NUMBER: S121RDR-H305D927-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	439.8	439.8	439.8	439.8	439.8	439.8	439.8	439.8	439.8	439.8	439.8
2.5°	454.0	452.7	451.5	449.6	447.1	443.4	442.9	443.1	438.6	434.3	433.6
5°	466.3	464.1	460.5	456.2	452.2	446.1	443.4	441.6	434.8	429.0	426.7
7.5°	479.4	474.3	469.3	462.5	455.9	447.9	442.9	439.1	430.2	422.5	418.5
10°	489.7	483.4	476.3	467.6	458.5	448.7	441.3	435.3	424.5	415.1	410.1
12.5°	497.0	489.8	481.4	471.1	460.7	447.7	438.6	430.6	417.5	406.3	400.3
15°	500.8	493.2	482.7	471.4	460.7	447.1	435.0	423.4	410.4	396.3	388.9
17.5°	504.3	494.3	482.6	469.6	458.7	444.4	429.5	414.4	399.8	386.5	374.4
20°	501.8	493.3	480.2	466.8	454.5	437.9	422.2	406.6	388.4	372.9	360.8
22.5°	490.2	488.7	474.6	460.2	446.1	430.2	411.9	396.5	376.9	358.7	344.1
25°	476.6	474.8	467.1	451.7	435.8	419.2	402.8	385.0	362.5	343.6	326.8
27.5°	465.1	461.0	455.5	441.1	424.0	407.4	390.5	373.3	349.2	328.2	309.1
30°	441.9	445.9	439.8	429.8	410.1	394.0	377.8	359.0	335.1	310.9	291.4
32.5°	405.1	429.2	423.0	415.1	395.7	378.1	362.7	344.3	317.9	294.0	273.8
35°	372.6	393.3	407.3	397.7	380.6	360.2	344.4	328.3	300.8	276.4	257.0
37.5°	341.1	363.2	386.4	377.6	363.5	341.6	325.0	309.1	283.6	259.0	239.6
40°	299.8	332.0	354.4	357.9	343.4	321.4	305.3	288.9	266.3	241.9	221.2
42.5°	260.2	301.5	319.5	337.5	322.7	302.0	284.1	270.1	248.4	227.0	204.5
45°	218.7	265.7	292.4	306.1	300.8	281.9	262.3	248.9	230.7	210.8	189.4
47.5°	182.7	227.3	265.5	273.3	278.4	259.8	241.6	228.0	212.3	195.8	175.4
50°	144.9	191.2	232.0	246.1	255.9	239.0	219.9	208.1	194.8	180.1	162.0
52.5°	112.8	156.0	198.8	222.9	226.2	217.4	199.8	188.2	177.6	164.3	147.9
55°	89.5	123.0	165.8	193.9	197.0	194.8	179.1	169.0	161.2	150.1	136.3
57.5°	74.3	95.7	134.3	166.7	171.3	173.3	160.4	151.2	144.3	135.5	123.0
60°	64.2	75.5	105.0	136.6	149.4	152.9	141.4	134.8	129.0	121.1	109.4
62.5°	56.7	61.9	80.3	110.8	127.2	130.2	124.4	119.4	114.6	107.0	96.7
65°	47.3	52.7	61.9	85.6	105.8	107.3	108.5	103.6	99.8	93.5	84.4
67.5°	39.6	43.9	49.9	65.7	84.9	89.2	92.2	90.0	86.4	80.1	72.3
70°	33.7	36.2	40.5	49.3	64.8	74.1	77.3	75.6	73.8	67.0	60.4
72.5°	28.0	30.0	32.5	37.8	48.9	58.9	63.5	62.7	60.7	55.6	50.1
75°	23.2	24.0	26.0	29.0	35.5	44.8	50.2	50.9	48.6	43.8	39.5
77.5°	18.2	19.1	20.2	22.1	26.2	32.5	37.0	38.6	37.1	33.7	29.4
80°	13.9	14.4	15.3	16.1	17.7	22.1	26.7	27.7	26.9	24.0	21.4
82.5°	9.3	9.6	10.3	10.9	11.8	13.8	17.7	18.4	18.2	15.8	13.9
85°	5.6	5.6	5.8	6.3	6.6	7.5	9.6	10.6	10.1	8.5	7.6
87.5°	2.3	2.5	2.3	2.3	2.3	2.5	3.2	4.3	3.3	2.5	2.3
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: P243075

CATALOG NUMBER: S121RDR-H305D927-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	439.8	439.8	439.8	439.8	439.8	439.8	439.8	439.8	439.8	439.8	439.8
2.5°	431.8	431.1	428.7	426.3	423.7	420.5	420.7	421.2	420.0	419.7	420.9
5°	423.4	421.0	417.2	413.4	410.4	406.4	404.1	405.3	404.4	403.0	402.0
7.5°	414.4	411.1	405.6	400.8	396.8	389.4	387.7	385.7	384.1	380.7	380.1
10°	403.8	399.0	392.0	385.2	377.9	372.1	366.6	364.3	359.8	356.9	356.0
12.5°	392.8	384.9	377.1	367.1	358.8	350.4	345.6	342.3	337.8	330.5	327.0
15°	381.6	369.5	359.0	348.1	342.4	331.0	321.9	311.6	306.1	293.8	286.7
17.5°	366.5	352.5	338.5	329.5	317.7	301.8	286.5	281.2	272.9	265.0	257.0
20°	346.1	333.3	319.9	306.4	288.5	270.1	264.3	255.2	246.1	241.3	237.1
22.5°	327.3	313.6	297.7	279.9	261.5	247.1	239.5	232.8	227.2	222.9	218.1
25°	309.6	295.3	272.6	254.5	238.5	227.8	224.0	215.4	209.4	206.3	202.1
27.5°	290.0	270.5	252.2	233.5	219.2	213.3	204.5	197.7	191.4	185.2	183.7
30°	271.5	249.7	231.7	216.4	206.0	197.7	188.7	180.8	176.6	174.3	170.5
32.5°	253.1	231.0	214.1	202.1	190.9	182.1	173.6	169.5	163.2	158.0	154.7
35°	233.3	214.1	200.6	186.7	175.9	167.3	163.0	153.6	150.1	148.6	145.1
37.5°	215.9	198.8	185.2	174.6	162.8	155.9	147.4	145.3	140.6	136.6	135.5
40°	201.5	185.4	172.6	158.9	151.6	142.4	138.3	132.5	130.8	129.3	126.7
42.5°	185.7	172.0	157.4	148.1	137.3	133.2	126.7	125.0	121.1	119.6	118.6
45°	172.3	159.5	145.6	134.3	128.2	122.0	119.6	115.4	113.6	111.8	109.9
47.5°	159.2	145.9	134.8	124.2	117.4	114.6	110.1	107.1	105.1	103.3	101.5
50°	147.1	133.7	121.2	113.6	108.8	104.8	102.0	99.5	96.7	92.7	88.6
52.5°	134.0	121.9	111.8	104.3	100.0	96.2	93.7	89.4	83.9	79.6	77.6
55°	120.9	109.4	100.7	94.7	91.7	88.1	82.4	76.1	72.6	72.0	71.5
57.5°	109.8	99.0	90.9	86.2	82.7	76.3	70.3	68.0	67.0	66.7	66.3
60°	97.3	87.7	81.9	76.9	71.1	65.0	63.2	62.8	61.9	61.4	61.0
62.5°	85.9	77.6	72.3	66.3	60.2	59.0	57.7	56.9	56.4	55.2	54.7
65°	74.8	68.2	62.4	56.0	53.9	53.1	51.9	50.7	49.4	48.6	47.9
67.5°	64.2	57.7	51.6	49.3	48.1	46.8	45.3	43.6	42.9	41.8	41.6
70°	53.7	47.8	44.4	42.9	40.8	39.6	38.0	37.3	36.2	35.7	35.2
72.5°	43.8	39.5	38.1	36.0	34.5	32.7	31.8	31.2	30.5	29.7	29.7
75°	34.2	33.0	30.5	28.9	27.4	26.4	26.0	24.9	24.7	24.2	23.9
77.5°	27.2	24.9	24.0	22.2	21.2	20.7	20.4	19.7	19.1	18.9	18.7
80°	19.2	18.1	17.1	16.3	15.4	15.1	14.8	14.6	14.3	13.9	13.8
82.5°	12.6	11.9	11.3	10.8	10.6	10.1	9.8	9.6	9.3	9.3	9.3
85°	6.8	6.6	6.3	6.0	5.6	5.6	5.5	5.3	5.3	4.8	4.8
87.5°	2.2	2.2	2.0	2.0	1.7	1.8	1.7	1.7	1.5	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



TEST NUMBER: P243075

CATALOG NUMBER: S121RDR-H305D927-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	439.8	439.8	439.8	439.8
2.5°	419.5	419.5	418.9	419.5
5°	401.3	399.8	399.3	399.0
7.5°	378.1	376.8	375.4	374.1
10°	354.4	352.4	351.2	350.2
12.5°	323.5	321.0	316.4	317.7
15°	285.6	285.7	274.9	286.9
17.5°	254.5	255.4	251.1	250.4
20°	234.8	234.5	232.8	230.8
22.5°	214.6	213.1	212.4	209.3
25°	195.7	193.0	193.9	189.4
27.5°	181.9	179.8	179.1	178.8
30°	168.1	163.7	162.2	163.2
32.5°	154.2	153.9	153.4	153.6
35°	142.4	141.8	140.3	140.3
37.5°	134.3	134.5	133.7	133.0
40°	124.4	123.5	123.4	122.4
42.5°	117.2	115.6	114.9	115.1
45°	108.9	108.0	107.1	107.5
47.5°	99.2	98.2	96.3	95.8
50°	85.9	84.6	83.7	82.9
52.5°	75.9	75.8	75.5	75.3
55°	71.1	70.6	70.6	70.6
57.5°	66.2	65.8	65.7	66.0
60°	60.7	60.4	59.7	59.7
62.5°	53.9	53.6	53.4	52.7
65°	47.1	46.9	46.6	46.8
67.5°	40.8	40.6	40.6	40.1
70°	34.7	34.7	34.2	34.5
72.5°	29.0	28.9	28.9	28.9
75°	23.5	23.4	23.2	23.2
77.5°	18.6	18.6	18.2	18.2
80°	13.4	13.4	13.3	13.6
82.5°	9.0	9.3	9.0	9.0
85°	4.8	5.0	5.0	5.0
87.5°	1.5	1.3	1.3	1.3
90°	0.0	0.0	0.0	0.0

(END OF REPORT)