

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: P242235

Luminaire Tested: **S121RDR-S305D930-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P242235
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-S305D930-X4F0-XX-UDD-A-W
Description: DEFINE 1 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 3000K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 857.8 lumens
Efficiency: N/A
Efficacy: 74.0 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

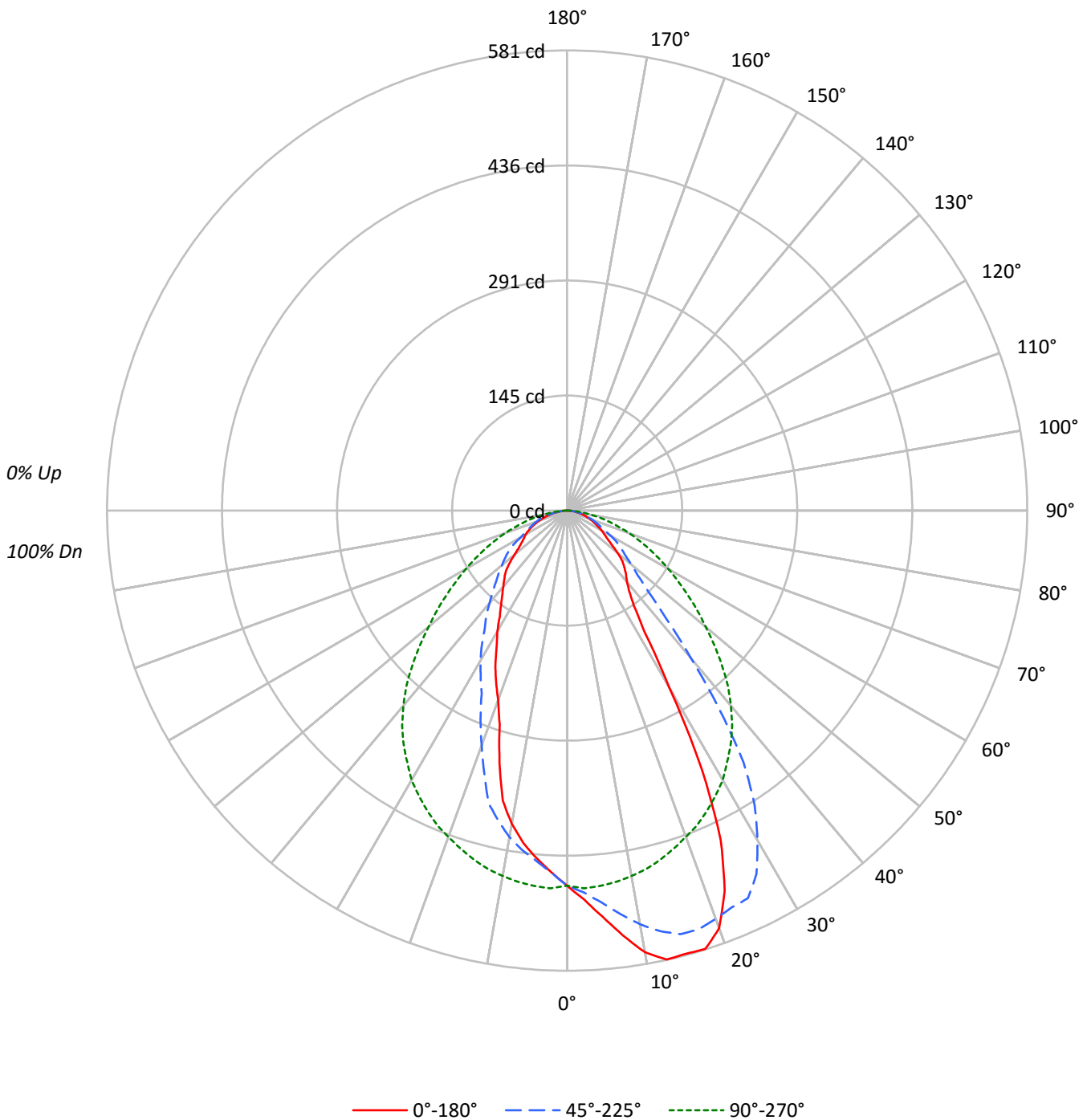
Input Watts (W): 11.6
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





TEST NUMBER: P242235

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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	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°	14030	14030	14030
5°	15312	14152	13108
10°	17041	14096	12083
15°	17767	13988	10114
20°	17692	13823	8025
25°	15003	13669	7006
30°	8830	13436	6018
35°	5306	13025	5252
40°	4545	12435	4846
45°	4295	11590	4609
50°	3840	10528	3987
55°	3198	9608	3606
60°	2975	8753	3585
65°	2748	7971	3470
70°	2590	7182	3266
75°	2450	6354	2976
80°	2184	5307	2611
85°	2074	4182	2074



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	45.4	5.3
10°-20°	129.3	15.1
20°-30°	176.6	20.6
30°-40°	164.6	19.2
40°-50°	136.0	15.9
50°-60°	100.3	11.7
60°-70°	64.1	7.5
70°-80°	33.0	3.8
80°-90°	8.5	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°	351.3	41.0
0°-40°	515.9	60.1
0°-60°	752.2	87.7
0°-90°	857.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	857.8	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	474	474	474	474	474	
5°	515	497	476	444	441	51
15°	579	554	456	382	330	163
25°	459	540	418	255	214	199
35°	147	388	360	181	145	100
45°	102	145	277	127	110	79
55°	62	83	186	91	70	57
65°	39	45	114	53	50	39
75°	21	23	56	29	26	22
85°	6	6	12	7	6	7
90°	0	0	0	0	0	



TEST NUMBER: P242235

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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	473.5	473.5	473.5	473.5	473.5	473.5	473.5	473.5	473.5	473.5	473.5
2.5°	491.6	491.3	491.8	491.5	491.1	490.2	489.5	487.4	484.2	482.4	484.2
5°	514.8	516.2	515.7	515.0	513.4	511.9	508.7	506.8	501.1	496.6	497.9
7.5°	541.1	542.9	540.6	539.0	538.1	534.0	530.4	524.9	518.7	513.7	510.9
10°	566.4	566.9	566.2	564.8	561.8	557.3	552.2	545.9	538.1	530.4	525.3
12.5°	580.6	581.5	582.6	580.1	577.8	574.2	568.9	562.7	553.0	544.1	538.3
15°	579.2	579.9	581.9	581.0	579.9	578.3	575.3	570.1	563.4	553.6	545.2
17.5°	580.3	580.8	581.7	578.5	576.7	574.8	570.8	567.3	561.6	553.9	547.7
20°	561.1	569.8	568.7	573.0	574.8	574.6	570.8	564.1	556.2	548.4	545.6
22.5°	519.8	526.7	527.6	534.2	542.4	549.0	557.1	560.2	554.1	542.4	538.4
25°	458.9	463.9	468.9	478.3	487.0	505.3	522.1	534.7	541.7	540.1	532.4
27.5°	368.8	363.5	383.2	394.1	418.5	445.2	468.7	491.8	502.8	517.6	525.1
30°	258.1	257.6	272.5	291.4	327.9	352.4	396.4	433.6	462.6	480.8	501.1
32.5°	181.2	183.9	194.9	206.5	226.6	266.6	300.3	351.5	401.0	440.7	465.6
35°	146.7	147.0	149.5	156.5	168.7	191.0	217.2	267.0	334.1	388.0	425.2
37.5°	128.5	129.6	130.3	134.2	138.7	148.1	164.6	199.2	254.7	314.9	379.5
40°	117.5	118.4	119.1	120.3	123.0	127.4	138.3	154.9	186.9	242.3	314.2
42.5°	110.0	109.6	111.2	111.8	113.2	115.7	120.5	129.4	147.9	185.5	247.4
45°	102.5	103.1	103.1	103.8	105.0	106.4	108.4	113.9	123.4	144.7	193.3
47.5°	94.7	94.5	95.6	96.1	97.4	98.6	100.0	102.9	108.4	120.9	149.0
50°	83.3	83.7	85.6	87.4	89.2	90.8	92.6	94.3	97.9	104.7	121.9
52.5°	71.2	71.2	73.3	74.6	77.1	81.0	84.0	86.7	89.0	92.4	102.7
55°	61.9	62.1	62.8	63.9	65.7	67.6	71.6	76.2	80.1	82.9	88.6
57.5°	55.5	55.7	55.9	56.8	57.7	58.4	60.7	64.3	69.4	74.6	78.0
60°	50.2	50.0	50.0	50.6	51.3	52.2	53.4	54.8	57.7	63.2	69.2
62.5°	44.1	44.5	44.5	45.0	45.6	46.5	47.0	48.4	50.0	52.5	58.7
65°	39.2	39.5	39.2	39.7	40.0	40.6	41.5	42.2	43.6	45.2	47.7
67.5°	34.2	34.4	34.7	34.9	35.2	35.4	36.1	37.0	37.9	39.0	40.9
70°	29.9	29.9	29.9	30.3	30.6	30.6	31.1	31.5	32.4	33.5	34.5
72.5°	25.3	25.5	25.5	25.3	26.0	26.2	26.3	26.7	27.4	28.3	29.2
75°	21.4	21.0	21.0	21.2	21.7	21.7	21.9	22.1	22.6	23.3	23.9
77.5°	16.7	16.7	16.9	17.1	17.3	17.3	17.6	17.6	18.3	18.7	19.0
80°	12.8	13.2	13.3	13.2	13.2	13.3	13.3	13.7	13.9	14.1	14.4
82.5°	9.6	9.8	9.4	9.4	9.6	9.6	9.8	9.8	10.0	10.1	10.1
85°	6.1	6.1	6.2	6.1	6.2	6.1	6.1	6.4	6.2	6.2	6.4
87.5°	2.8	3.0	2.8	3.0	2.8	3.0	3.0	3.0	3.0	3.0	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



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	473.5	473.5	473.5	473.5	473.5	473.5	473.5	473.5	473.5	473.5	473.5
2.5°	483.6	483.4	482.6	480.6	479.2	476.5	476.5	477.4	472.8	469.6	469.4
5°	494.8	493.1	490.0	486.3	482.9	478.3	476.5	475.8	469.6	464.8	463.2
7.5°	506.8	502.3	497.2	491.1	485.4	478.8	475.4	472.8	464.8	458.9	455.3
10°	519.2	512.1	504.1	495.4	487.5	478.6	473.1	468.5	459.2	451.1	447.0
12.5°	530.3	520.3	510.1	498.8	488.1	476.9	469.2	463.2	452.3	442.5	437.5
15°	535.4	524.7	516.4	500.7	486.3	474.9	465.1	456.0	444.5	433.6	426.0
17.5°	539.9	528.1	517.1	502.3	485.6	470.8	459.1	447.5	435.0	423.6	414.2
20°	538.6	528.7	515.1	499.5	483.6	466.5	453.2	438.4	422.9	411.4	401.4
22.5°	531.5	523.3	509.3	494.3	479.0	460.7	445.5	429.5	410.5	397.8	386.6
25°	522.4	514.6	500.7	485.2	470.1	452.3	434.5	418.1	397.7	382.5	368.1
27.5°	515.3	503.6	489.7	472.4	457.8	440.9	422.2	405.7	383.6	366.9	350.1
30°	507.1	493.8	476.7	458.3	442.9	427.4	409.2	392.7	368.3	349.2	328.4
32.5°	483.6	483.8	463.5	443.0	426.5	409.9	393.7	376.1	351.9	329.5	308.1
35°	453.0	464.9	450.0	426.5	406.0	390.7	377.4	360.1	333.2	310.1	285.9
37.5°	412.1	433.1	434.9	410.5	387.9	369.9	356.7	342.3	315.2	290.3	266.3
40°	371.1	398.9	409.9	393.0	368.5	347.8	334.6	321.5	296.0	269.1	246.9
42.5°	320.9	366.0	379.7	374.7	348.3	326.1	312.2	300.3	275.5	249.2	227.1
45°	264.3	325.2	345.1	350.3	328.1	304.2	288.2	276.6	254.9	231.8	208.8
47.5°	212.4	279.3	312.2	317.6	305.8	282.7	264.3	252.2	235.0	215.0	192.2
50°	162.0	230.5	277.7	285.9	283.0	259.5	242.6	228.4	215.2	197.4	176.0
52.5°	128.9	184.2	240.3	255.6	256.5	238.0	220.2	207.2	194.4	180.3	160.9
55°	102.9	142.4	199.2	225.2	227.7	214.8	198.5	186.0	176.4	163.2	146.8
57.5°	86.7	110.2	159.5	194.6	195.6	192.1	176.4	166.1	158.1	146.7	132.3
60°	74.0	87.4	123.0	163.9	169.3	169.3	156.8	147.7	140.1	131.5	117.8
62.5°	64.1	71.4	93.3	130.3	144.0	146.1	138.3	130.3	124.6	116.1	103.4
65°	53.9	59.5	72.3	100.7	119.6	123.5	119.6	113.7	109.3	100.4	90.4
67.5°	44.3	49.7	57.7	76.4	97.0	101.8	101.1	98.1	93.4	86.9	76.4
70°	36.7	39.9	45.7	56.6	76.2	83.5	85.6	82.9	78.9	71.7	64.1
72.5°	30.3	32.8	35.6	43.4	57.0	66.6	70.1	68.7	65.7	58.9	52.5
75°	24.7	26.3	28.3	32.0	40.9	51.8	55.9	55.5	52.5	46.8	41.7
77.5°	19.9	20.5	21.9	24.2	28.7	38.4	41.7	42.7	40.4	35.6	31.5
80°	15.0	15.7	16.4	17.6	19.8	25.5	29.5	31.1	29.2	26.3	22.2
82.5°	10.5	10.7	11.4	12.1	13.2	15.5	19.8	21.5	19.8	16.7	15.5
85°	6.6	6.4	6.6	6.8	7.8	8.4	11.0	12.3	11.9	10.1	8.7
87.5°	3.0	3.0	2.8	3.0	2.8	3.4	3.9	5.7	4.3	3.7	3.4
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°	473.5	473.5	473.5	473.5	473.5	473.5	473.5	473.5	473.5	473.5	473.5
2.5°	468.0	467.4	465.6	463.2	461.0	457.5	457.5	458.3	458.2	458.5	458.2
5°	460.5	458.0	455.3	451.9	448.7	444.1	443.6	443.9	443.8	443.6	442.5
7.5°	450.9	448.0	444.6	440.4	436.8	432.4	431.1	430.8	429.3	428.8	427.4
10°	441.6	438.2	433.8	428.6	423.8	418.7	415.5	413.7	411.4	408.9	406.7
12.5°	431.3	426.8	421.1	414.9	406.9	401.2	396.4	393.4	390.2	385.9	382.9
15°	420.3	411.2	404.4	394.3	384.5	382.5	375.2	365.6	364.9	344.1	336.8
17.5°	405.5	398.0	385.4	372.2	358.8	348.0	348.2	322.2	314.2	314.0	301.2
20°	390.2	379.9	365.3	351.9	337.8	315.4	297.6	289.1	276.1	271.1	263.8
22.5°	372.2	358.7	341.6	323.4	303.8	285.7	268.2	260.1	253.5	248.0	244.9
25°	350.8	337.1	316.7	294.1	272.2	255.3	245.6	241.9	230.7	226.8	223.0
27.5°	329.3	314.3	287.6	265.9	248.0	236.4	226.4	220.2	214.8	204.9	200.4
30°	308.8	284.8	262.7	242.8	229.3	218.4	211.1	198.5	191.0	186.4	184.4
32.5°	286.6	260.9	241.0	223.7	209.9	200.4	189.6	181.0	177.6	171.6	162.9
35°	263.8	240.5	219.7	205.8	193.8	181.0	174.3	166.1	157.5	152.9	152.2
37.5°	241.7	219.7	204.7	190.1	175.7	168.2	158.2	149.5	146.5	142.2	137.6
40°	221.8	202.9	189.0	172.3	163.6	152.0	144.4	139.9	132.6	131.0	129.6
42.5°	205.4	189.2	173.5	158.6	148.5	139.2	132.4	127.3	125.0	121.0	119.8
45°	188.9	173.9	157.9	146.1	134.6	126.7	122.1	117.7	115.0	113.9	111.8
47.5°	173.9	159.3	144.5	130.1	122.3	117.1	112.0	109.6	108.0	105.7	104.5
50°	159.7	143.5	129.6	120.5	112.1	107.5	104.1	102.0	99.5	97.0	93.4
52.5°	145.2	131.4	118.0	108.4	102.2	99.1	95.9	93.6	88.6	83.8	80.8
55°	130.7	116.4	105.6	98.3	93.8	90.6	86.9	80.1	75.5	72.8	71.4
57.5°	117.5	104.7	95.1	89.0	85.8	80.5	73.9	69.6	67.3	66.2	65.5
60°	103.4	92.4	84.4	79.7	74.8	67.6	64.1	61.9	61.2	60.9	60.3
62.5°	91.3	81.5	75.3	70.1	63.0	59.3	57.3	56.2	56.2	55.7	55.4
65°	78.5	70.8	65.5	58.0	54.3	52.7	52.0	51.4	50.9	50.7	50.0
67.5°	68.0	61.2	54.3	50.4	48.1	47.2	46.5	46.3	45.6	45.0	44.5
70°	57.3	50.7	45.0	43.3	42.0	41.7	40.9	40.2	39.7	39.0	38.6
72.5°	46.6	40.4	38.4	37.6	36.3	35.8	34.9	34.4	33.5	33.1	32.8
75°	35.6	33.1	32.0	31.3	30.4	29.2	28.8	28.3	27.9	27.4	26.9
77.5°	28.3	26.9	25.6	24.7	24.0	23.1	22.4	22.2	21.9	21.4	21.2
80°	21.2	20.1	19.6	18.7	17.8	17.3	16.9	16.7	16.2	16.0	15.8
82.5°	14.6	13.7	13.3	12.3	11.9	11.9	11.7	11.4	11.0	10.9	10.7
85°	8.2	7.8	7.3	7.5	6.9	6.9	6.8	6.6	6.4	6.2	6.1
87.5°	3.2	3.0	2.8	2.7	2.7	2.1	2.1	2.1	2.3	2.1	2.0
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: P242235

CATALOG NUMBER: S121RDR-S305D930-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	473.5	473.5	473.5	473.5
2.5°	458.7	459.1	457.8	457.1
5°	442.5	442.0	441.3	440.7
7.5°	426.0	425.4	425.4	423.3
10°	405.8	404.4	403.3	401.6
12.5°	380.2	378.1	377.4	375.2
15°	331.8	327.3	324.3	329.7
17.5°	298.1	286.6	287.5	283.0
20°	263.6	259.0	261.3	254.5
22.5°	241.2	238.3	235.7	234.2
25°	220.4	217.0	212.9	214.3
27.5°	194.2	194.2	191.5	192.6
30°	180.8	179.4	175.0	175.9
32.5°	160.0	158.2	157.7	158.1
35°	150.1	147.2	146.3	145.2
37.5°	136.2	135.1	135.3	134.6
40°	126.9	126.0	125.0	125.3
42.5°	118.9	118.4	117.3	117.5
45°	111.1	110.5	110.0	110.0
47.5°	102.3	101.3	100.4	99.3
50°	91.0	88.8	87.2	86.5
52.5°	78.7	77.6	76.5	76.5
55°	70.8	70.3	70.0	69.8
57.5°	65.3	65.0	65.0	64.4
60°	60.3	60.3	60.2	60.5
62.5°	55.5	55.0	55.2	55.2
65°	50.0	49.8	49.7	49.5
67.5°	44.1	44.0	44.1	43.8
70°	38.3	38.3	38.1	37.7
72.5°	32.2	32.6	32.2	32.0
75°	26.5	26.3	26.5	26.0
77.5°	21.2	20.5	20.8	21.0
80°	15.7	15.7	15.5	15.3
82.5°	10.5	10.7	10.3	10.3
85°	6.1	6.1	5.7	6.1
87.5°	1.8	1.8	1.8	2.1
90°	0.0	0.0	0.0	0.0

(END OF REPORT)