

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: P243105

Luminaire Tested: **S121RDR-H305D940-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P243105
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-H305D940-X4F0-XX-UDD-A-W
Description: DEFINE 1 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 4000K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 872.7 lumens
Efficiency: N/A
Efficacy: 77.9 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

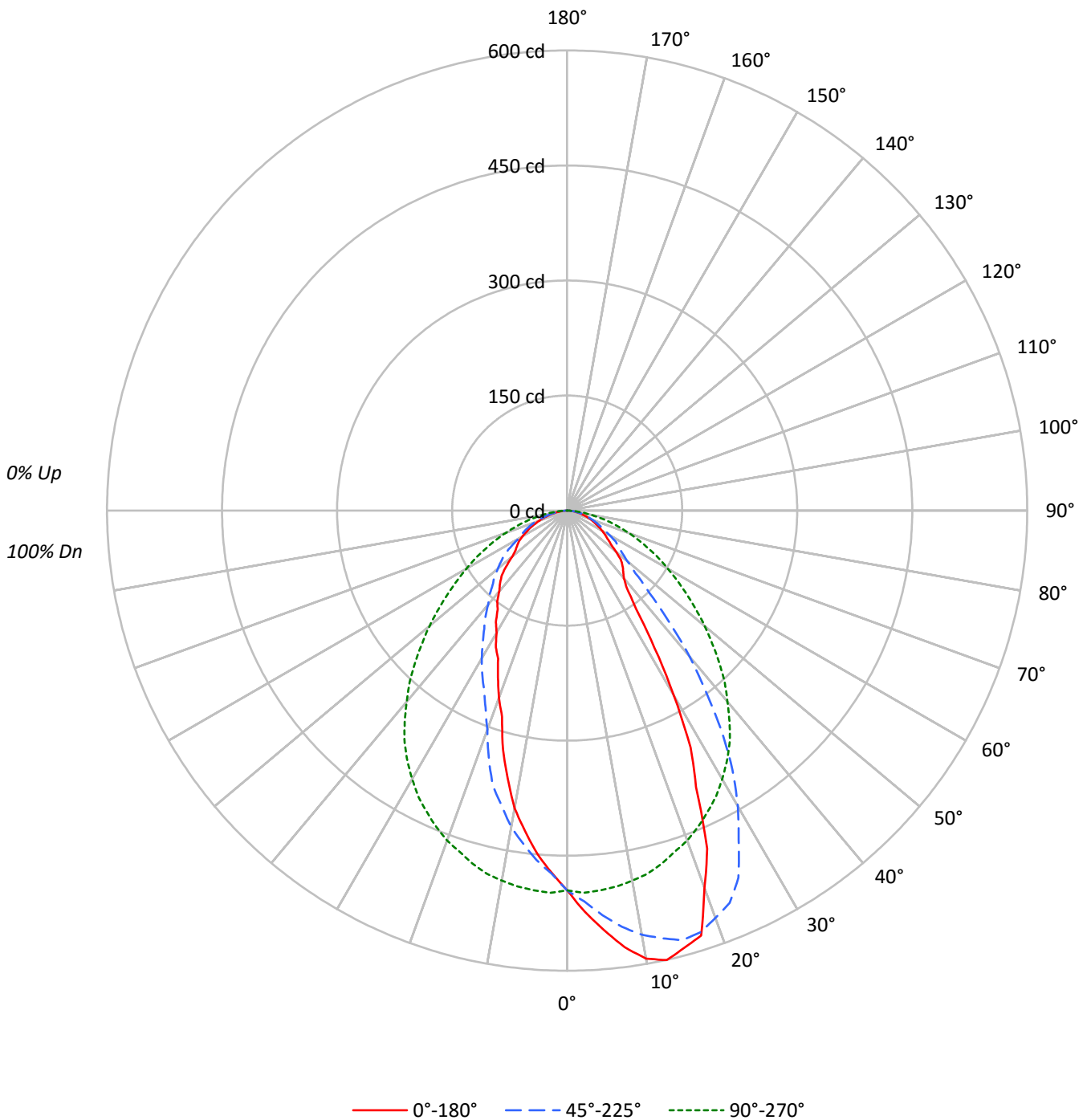
Input Watts (W): 11.2
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	0	
RCR																						
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100				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°	14667	14667	14667
5°	16323	14785	13358
10°	17847	14743	11860
15°	18104	14617	9905
20°	16503	14432	8192
25°	12999	14169	6970
30°	9504	13826	6285
35°	5672	13369	5711
40°	4448	12578	5330
45°	4287	11741	5070
50°	3821	10800	4301
55°	3337	9825	4107
60°	3117	8996	3982
65°	2903	8182	3688
70°	2746	7372	3361
75°	2519	6560	2988
80°	2286	5324	2611
85°	2142	4046	1904



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	47.3	5.4
10°-20°	131.8	15.1
20°-30°	175.3	20.1
30°-40°	167.2	19.2
40°-50°	138.8	15.9
50°-60°	103.2	11.8
60°-70°	66.8	7.7
70°-80°	34.0	3.9
80°-90°	8.3	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°	354.4	40.6
0°-40°	521.6	59.8
0°-60°	763.5	87.5
0°-90°	872.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	872.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	495	495	495	495	495	
5°	549	530	497	458	449	54
15°	590	580	476	373	323	164
25°	398	528	433	256	213	184
35°	157	351	370	188	158	107
45°	102	151	280	137	121	78
55°	65	82	190	99	80	59
65°	41	47	117	60	53	41
75°	22	24	57	30	26	23
85°	6	6	12	6	6	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°	495.0	495.0	495.0	495.0	495.0	495.0	495.0	495.0	495.0	495.0	495.0
2.5°	523.4	522.1	523.6	523.0	520.6	521.2	518.2	516.3	511.8	510.1	510.1
5°	548.8	550.6	549.5	549.9	547.5	546.0	542.8	539.3	533.7	529.6	528.1
7.5°	574.2	574.7	575.3	573.8	571.0	568.4	563.9	558.7	552.5	547.3	543.2
10°	593.2	594.5	593.8	591.5	589.5	585.6	580.7	575.1	568.4	561.5	556.4
12.5°	600.3	601.4	603.1	601.8	601.6	599.7	594.9	588.0	579.8	571.2	565.4
15°	590.2	589.5	594.0	592.8	592.5	591.7	593.0	591.5	587.2	579.8	572.7
17.5°	580.9	580.5	585.0	586.1	584.4	582.0	580.5	578.6	576.6	576.8	575.8
20°	523.4	534.8	537.0	543.0	555.7	564.1	572.5	572.1	566.1	565.2	564.8
22.5°	477.1	481.4	479.3	489.0	496.0	511.1	525.8	544.5	557.0	553.8	551.8
25°	397.6	411.0	417.2	429.3	446.9	466.1	474.5	494.3	513.5	528.4	539.8
27.5°	348.3	351.3	355.2	367.7	374.3	391.8	423.2	450.0	468.0	484.2	514.2
30°	277.8	279.1	292.7	299.6	318.8	336.0	363.2	384.9	420.9	445.0	468.1
32.5°	212.0	210.9	225.9	233.9	252.9	276.1	306.5	326.7	361.9	401.3	428.9
35°	156.8	156.6	164.6	170.2	191.1	208.9	247.5	273.8	312.5	351.1	386.8
37.5°	127.7	127.5	129.2	134.0	142.8	162.8	181.4	220.4	258.2	296.2	340.8
40°	115.0	115.9	116.3	118.5	121.5	127.5	138.9	166.1	203.1	248.4	293.2
42.5°	108.3	108.3	108.6	109.2	110.7	112.4	119.3	129.7	159.4	195.6	245.8
45°	102.3	102.5	102.8	103.2	102.8	103.8	107.0	111.2	122.8	151.4	199.9
47.5°	95.2	95.0	95.9	96.5	97.2	98.4	98.6	100.8	105.8	120.8	156.0
50°	82.9	83.1	84.0	86.2	88.7	90.7	92.0	93.5	95.2	102.3	121.0
52.5°	71.7	71.9	72.4	74.1	76.3	79.0	83.1	86.4	87.7	90.0	100.4
55°	64.6	64.6	65.3	66.3	66.8	68.7	71.5	75.2	80.1	81.9	86.4
57.5°	58.6	58.6	59.0	59.0	59.7	60.7	62.5	64.4	68.5	74.5	77.3
60°	52.6	52.6	53.0	53.0	53.9	54.3	55.6	56.7	59.0	63.1	68.7
62.5°	47.0	46.7	47.0	47.2	47.8	48.3	49.3	50.6	51.9	54.3	58.4
65°	41.4	41.3	41.6	42.0	42.4	43.1	43.7	44.6	45.7	47.0	49.1
67.5°	36.6	36.4	36.6	37.1	37.0	37.3	38.3	38.6	39.8	41.1	42.7
70°	31.7	31.4	31.7	31.7	31.9	32.5	32.5	33.4	34.3	35.1	36.6
72.5°	26.5	26.7	26.5	26.7	27.1	27.3	27.6	28.2	28.7	29.5	30.4
75°	22.0	22.0	22.2	22.4	22.8	22.8	23.0	23.3	23.7	24.1	25.2
77.5°	17.5	17.7	17.9	18.1	18.1	18.3	18.5	18.7	19.2	19.4	20.0
80°	13.4	13.6	13.6	13.6	14.0	13.6	14.0	14.4	14.4	14.6	14.9
82.5°	9.7	9.9	9.7	9.9	10.1	10.1	9.9	10.1	10.1	10.5	10.5
85°	6.3	6.0	6.0	6.0	6.0	6.0	6.2	6.3	6.2	6.2	6.3
87.5°	2.6	2.6	2.6	2.6	2.8	2.6	2.8	2.8	2.8	2.6	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°	495.0	495.0	495.0	495.0	495.0	495.0	495.0	495.0	495.0	495.0	495.0
2.5°	511.1	509.6	508.3	506.0	503.2	499.1	498.6	498.8	493.7	488.9	488.1
5°	524.9	522.5	518.4	513.5	509.0	502.1	499.1	497.1	489.4	482.9	480.3
7.5°	539.6	533.8	528.2	520.6	513.1	504.2	498.6	494.3	484.2	475.6	471.1
10°	551.2	544.1	536.1	526.4	516.1	505.1	496.7	490.0	477.8	467.2	461.6
12.5°	559.4	551.4	541.9	530.3	518.5	504.0	493.7	484.8	470.0	457.3	450.6
15°	563.7	555.1	543.4	530.7	518.5	503.2	489.6	476.5	462.0	446.1	437.7
17.5°	567.6	556.4	543.2	528.6	516.3	500.2	483.4	466.5	450.0	435.1	421.5
20°	564.8	555.3	540.6	525.4	511.6	493.0	475.2	457.7	437.2	419.8	406.2
22.5°	551.8	550.1	534.2	518.0	502.1	484.2	463.7	446.3	424.3	403.7	387.3
25°	536.5	534.4	525.8	508.5	490.5	471.9	453.4	433.4	408.0	386.8	367.9
27.5°	523.6	518.9	512.8	496.5	477.3	458.6	439.6	420.2	393.1	369.4	347.9
30°	497.4	501.9	495.0	483.8	461.6	443.5	425.2	404.1	377.2	350.0	328.0
32.5°	456.0	483.1	476.2	467.2	445.4	425.6	408.2	387.5	357.8	330.9	308.2
35°	419.4	442.8	458.4	447.6	428.4	405.4	387.7	369.6	338.6	311.2	289.3
37.5°	384.0	408.8	434.9	425.0	409.2	384.5	365.9	347.9	319.2	291.6	269.7
40°	337.5	373.7	398.9	402.8	386.6	361.7	343.6	325.2	299.8	272.3	249.0
42.5°	292.9	339.3	359.7	379.9	363.2	339.9	319.7	304.1	279.6	255.5	230.2
45°	246.2	299.0	329.1	344.6	338.6	317.3	295.3	280.2	259.6	237.2	213.2
47.5°	205.7	255.9	298.8	307.6	313.4	292.5	272.0	256.7	238.9	220.4	197.5
50°	163.1	215.2	261.1	277.0	288.0	269.0	247.5	234.3	219.3	202.7	182.4
52.5°	126.9	175.6	223.8	250.9	254.6	244.7	224.9	211.9	199.9	185.0	166.5
55°	100.8	138.5	186.7	218.2	221.8	219.3	201.6	190.2	181.4	168.9	153.4
57.5°	83.6	107.7	151.2	187.6	192.8	195.1	180.5	170.2	162.4	152.5	138.5
60°	72.2	84.9	118.2	153.8	168.2	172.1	159.2	151.8	145.2	136.3	123.2
62.5°	63.8	69.6	90.3	124.7	143.2	146.5	140.0	134.4	129.0	120.4	108.8
65°	53.2	59.4	69.6	96.3	119.1	120.8	122.1	116.7	112.4	105.3	95.0
67.5°	44.6	49.5	56.2	73.9	95.6	100.4	103.8	101.4	97.2	90.2	81.4
70°	37.9	40.7	45.5	55.4	73.0	83.4	87.0	85.1	83.1	75.4	67.9
72.5°	31.5	33.8	36.6	42.6	55.1	66.3	71.5	70.6	68.3	62.5	56.4
75°	26.1	27.1	29.3	32.7	39.9	50.4	56.6	57.3	54.7	49.3	44.4
77.5°	20.5	21.5	22.8	24.8	29.5	36.6	41.6	43.5	41.8	37.9	33.0
80°	15.7	16.2	17.2	18.1	20.0	24.8	30.1	31.2	30.2	27.1	24.1
82.5°	10.5	10.8	11.6	12.3	13.3	15.5	20.0	20.7	20.5	17.7	15.7
85°	6.3	6.3	6.5	7.1	7.5	8.4	10.8	11.9	11.4	9.5	8.6
87.5°	2.6	2.8	2.6	2.6	2.6	2.8	3.5	4.9	3.7	2.8	2.6
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°	495.0	495.0	495.0	495.0	495.0	495.0	495.0	495.0	495.0	495.0	495.0
2.5°	486.1	485.3	482.5	479.9	476.9	473.4	473.6	474.1	472.8	472.4	473.7
5°	476.5	473.9	469.6	465.3	462.0	457.5	454.9	456.2	455.3	453.6	452.5
7.5°	466.5	462.7	456.6	451.2	446.7	438.3	436.4	434.2	432.3	428.6	427.8
10°	454.5	449.1	441.3	433.6	425.4	418.9	412.7	410.1	405.1	401.7	400.8
12.5°	442.2	433.2	424.5	413.3	403.9	394.4	389.0	385.3	380.2	372.0	368.1
15°	429.5	415.9	404.1	391.8	385.5	372.6	362.3	350.7	344.6	330.8	322.7
17.5°	412.5	396.8	381.0	370.9	357.6	339.7	322.5	316.6	307.2	298.3	289.3
20°	389.6	375.2	360.1	344.9	324.8	304.1	297.5	287.3	277.0	271.6	266.9
22.5°	368.5	353.0	335.1	315.1	294.4	278.1	269.5	262.1	255.7	250.9	245.5
25°	348.5	332.4	306.9	286.5	268.4	256.5	252.2	242.5	235.8	232.2	227.5
27.5°	326.5	304.4	283.9	262.8	246.8	240.0	230.2	222.5	215.4	208.5	206.8
30°	305.6	281.1	260.8	243.6	231.8	222.5	212.4	203.5	198.8	196.2	191.9
32.5°	284.8	260.0	241.0	227.5	214.8	205.0	195.4	190.8	183.7	177.9	174.2
35°	262.6	241.0	225.9	210.2	198.0	188.3	183.5	172.8	168.9	167.2	163.3
37.5°	243.0	223.8	208.5	196.6	183.3	175.5	165.9	163.5	158.3	153.8	152.5
40°	226.8	208.7	194.3	178.8	170.6	160.3	155.7	149.1	147.3	145.6	142.6
42.5°	209.1	193.6	177.1	166.7	154.6	149.9	142.6	140.7	136.3	134.6	133.5
45°	193.9	179.6	163.9	151.2	144.3	137.4	134.6	129.9	127.9	125.8	123.8
47.5°	179.2	164.3	151.8	139.8	132.2	129.0	123.9	120.6	118.3	116.3	114.2
50°	165.6	150.4	136.4	127.9	122.4	118.0	114.8	112.0	108.8	104.3	99.7
52.5°	150.8	137.2	125.8	117.4	112.6	108.3	105.5	100.6	94.4	89.6	87.4
55°	136.1	123.2	113.3	106.6	103.2	99.1	92.8	85.7	81.8	81.0	80.5
57.5°	123.6	111.4	102.3	97.1	93.1	85.9	79.1	76.5	75.4	75.0	74.7
60°	109.6	98.7	92.2	86.6	80.1	73.2	71.1	70.7	69.6	69.1	68.7
62.5°	96.7	87.4	81.4	74.7	67.8	66.5	65.0	64.0	63.5	62.2	61.6
65°	84.2	76.7	70.2	63.1	60.7	59.7	58.4	57.1	55.6	54.7	53.9
67.5°	72.2	65.0	58.1	55.4	54.1	52.6	51.0	49.1	48.3	47.0	46.9
70°	60.5	53.8	50.0	48.3	45.9	44.6	42.7	42.0	40.7	40.1	39.6
72.5°	49.3	44.4	42.9	40.5	38.8	36.8	35.8	35.1	34.3	33.4	33.4
75°	38.5	37.1	34.3	32.5	30.8	29.7	29.3	28.0	27.8	27.3	26.9
77.5°	30.6	28.0	27.1	25.0	23.9	23.3	23.0	22.2	21.5	21.3	21.1
80°	21.7	20.3	19.2	18.3	17.4	17.0	16.6	16.4	16.1	15.7	15.5
82.5°	14.2	13.4	12.7	12.1	11.9	11.4	11.0	10.8	10.5	10.5	10.5
85°	7.7	7.5	7.1	6.7	6.3	6.3	6.2	6.0	6.0	5.4	5.4
87.5°	2.4	2.4	2.2	2.2	1.9	2.1	1.9	1.9	1.7	1.9	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



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CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	495.0	495.0	495.0	495.0
2.5°	472.2	472.2	471.5	472.2
5°	451.7	450.0	449.5	449.1
7.5°	425.6	424.1	422.6	421.1
10°	398.9	396.7	395.3	394.2
12.5°	364.2	361.4	356.1	357.6
15°	321.4	321.6	309.5	322.9
17.5°	286.5	287.5	282.6	281.9
20°	264.3	263.9	262.1	259.8
22.5°	241.5	239.9	239.1	235.6
25°	220.3	217.3	218.2	213.2
27.5°	204.8	202.3	201.6	201.2
30°	189.3	184.2	182.6	183.7
32.5°	173.6	173.2	172.7	172.8
35°	160.3	159.6	157.9	157.9
37.5°	151.2	151.4	150.4	149.7
40°	140.0	139.1	138.9	137.8
42.5°	132.0	130.1	129.4	129.5
45°	122.6	121.5	120.6	121.0
47.5°	111.6	110.5	108.4	107.9
50°	96.7	95.2	94.3	93.3
52.5°	85.5	85.3	84.9	84.7
55°	80.1	79.5	79.5	79.5
57.5°	74.5	74.1	73.9	74.3
60°	68.3	67.9	67.2	67.2
62.5°	60.7	60.3	60.1	59.4
65°	53.0	52.8	52.5	52.6
67.5°	45.9	45.7	45.7	45.2
70°	39.0	39.0	38.5	38.8
72.5°	32.7	32.5	32.5	32.5
75°	26.5	26.3	26.1	26.1
77.5°	20.9	20.9	20.5	20.5
80°	15.1	15.1	14.9	15.3
82.5°	10.1	10.5	10.1	10.1
85°	5.4	5.6	5.6	5.6
87.5°	1.7	1.5	1.5	1.5
90°	0.0	0.0	0.0	0.0

(END OF REPORT)