

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: P242132

Luminaire Tested: **S121DR-S305D930-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P242132  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-18)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S121DR-S305D930-X4F0-XX-UDD-A-W  
Description: DEFINE 1 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER  
STANDARD LIGHT ENGINE  
Light Source: (92) 3000K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

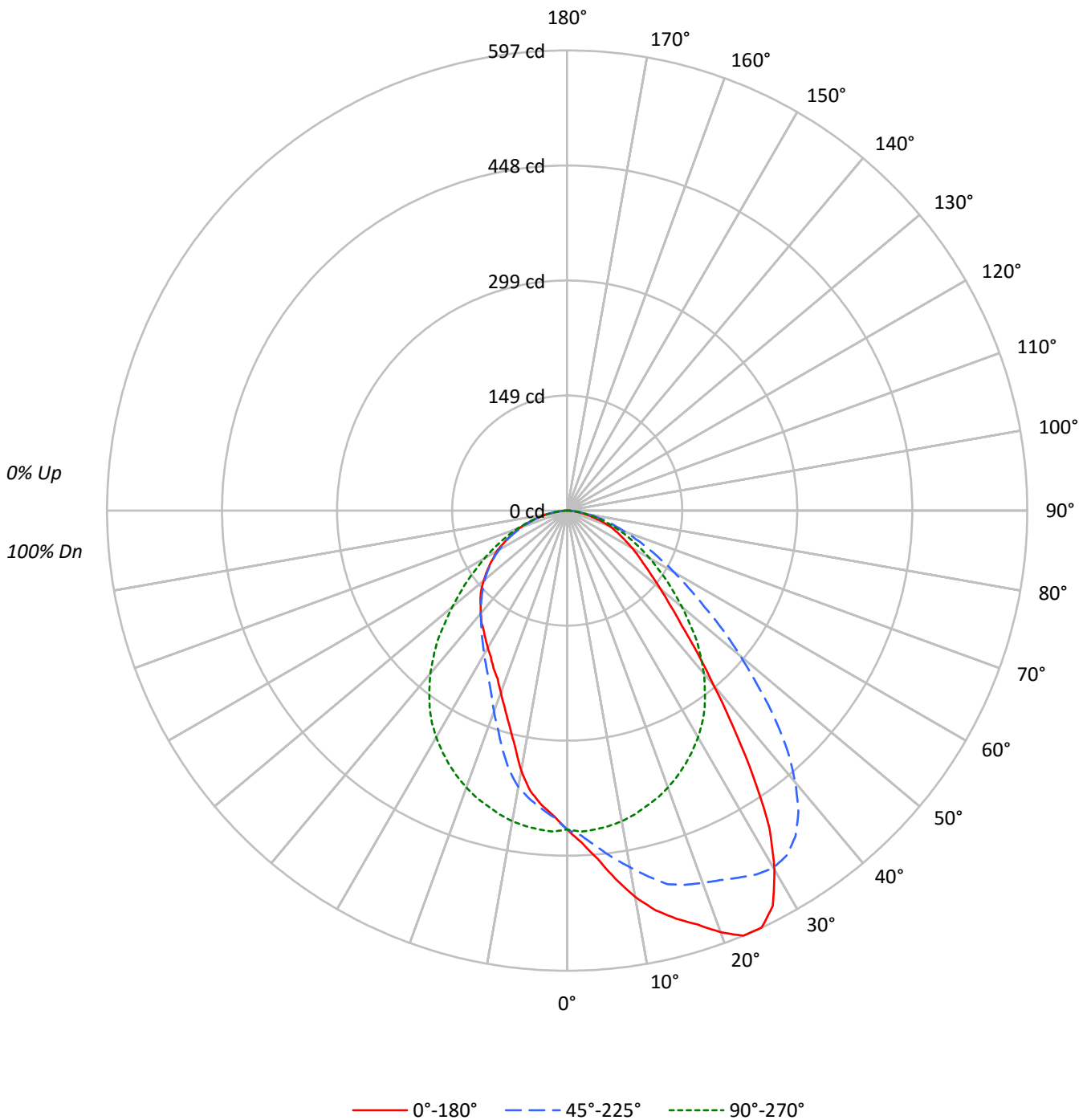
Lumens per Lamp: N/A  
Luminaire Lumens: 1019.3 lumens  
Efficiency: N/A  
Efficacy: 87.9 lumens/watt  
Spacing Criteria (0/90/45): 1.27 / 1.22 / 1.37  
Luminous Opening: Rectangular (W 3.88' x L: 0.09' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 11.6  
Input Voltage (V): 120  
Input Current (A<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





TEST NUMBER: P242132

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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	110	105	102	98	107	103	100	96	99	96	93	95	93	91	92	90	88	86
2	101	93	87	82	98	91	85	81	88	83	79	85	80	77	82	78	75	73
3	92	83	75	69	90	81	74	68	78	72	67	75	70	66	73	69	65	63
4	85	74	66	59	83	73	65	59	70	63	58	68	62	57	66	61	57	54
5	79	66	58	52	77	65	57	51	63	56	51	61	55	50	60	54	50	48
6	73	60	52	46	71	59	51	45	57	50	45	56	49	45	54	49	44	42
7	68	55	46	41	66	54	46	40	52	45	40	51	45	40	50	44	40	38
8	63	50	42	36	62	50	42	36	48	41	36	47	41	36	46	40	36	34
9	59	46	38	33	58	46	38	33	44	38	33	43	37	33	42	37	32	31
10	56	43	35	30	54	42	35	30	41	34	30	40	34	30	39	34	30	28

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

	0°	90°	180°
0°	12258	12258	12258
5°	13488	12355	11392
10°	15317	12312	10305
15°	16816	12175	8856
20°	18351	12054	7924
25°	19518	11864	7379
30°	18403	11619	7041
35°	15206	11253	6836
40°	11403	10671	6746
45°	8787	9948	6667
50°	7288	8952	6513
55°	6287	8126	6328
60°	5778	7330	6246
65°	5342	6625	5889
70°	5059	5952	5640
75°	4156	5255	5014
80°	3276	4283	4129
85°	2550	3162	2788



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	39.8	3.9
10°-20°	116.0	11.4
20°-30°	177.7	17.4
30°-40°	202.7	19.9
40°-50°	181.9	17.8
50°-60°	142.7	14.0
60°-70°	97.1	9.5
70°-80°	50.0	4.9
80°-90°	11.5	1.1
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°	333.5	32.7
0°-40°	536.2	52.6
0°-60°	860.8	84.4
0°-90°	1019.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1019.3	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	414	414	414	414	414	
5°	454	438	415	388	383	45
15°	548	502	397	322	289	156
25°	597	525	363	241	226	269
35°	420	516	311	193	189	261
45°	210	381	237	156	159	166
55°	122	217	157	121	122	111
65°	76	116	94	83	84	76
75°	36	51	46	42	44	39
85°	8	10	9	9	8	9
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°	413.7	413.7	413.7	413.7	413.7	413.7	413.7	413.7	413.7	413.7	413.7
2.5°	431.1	431.1	431.8	431.6	430.9	429.7	428.6	427.4	424.2	422.0	424.0
5°	453.5	454.4	455.3	455.1	452.5	450.1	446.8	445.9	440.2	437.5	436.6
7.5°	482.0	481.8	482.2	479.2	476.8	474.5	470.1	464.6	457.8	454.1	450.5
10°	509.1	510.7	510.0	506.2	502.7	500.2	493.0	486.3	477.9	469.9	465.5
12.5°	531.1	530.2	533.3	529.7	525.4	520.8	513.9	507.8	497.0	486.1	477.0
15°	548.2	547.3	547.7	545.0	540.6	536.5	529.4	522.9	512.6	501.8	492.2
17.5°	563.2	564.1	562.5	559.3	553.2	548.4	539.5	530.8	519.9	509.1	499.6
20°	582.0	582.9	579.9	575.3	569.4	561.2	552.0	539.5	527.4	514.0	502.3
22.5°	597.0	596.5	595.4	590.9	584.7	577.1	563.7	550.0	535.6	519.0	503.9
25°	597.0	597.7	598.2	595.9	591.8	585.4	576.3	561.9	545.7	525.4	504.3
27.5°	577.8	581.0	583.3	583.3	582.4	582.2	576.9	567.8	552.7	532.2	508.7
30°	537.9	542.2	545.7	551.3	557.8	562.1	563.7	560.1	552.3	535.1	510.7
32.5°	488.8	488.4	495.7	504.6	517.6	526.7	535.8	541.1	540.7	530.4	510.1
35°	420.4	425.4	434.1	446.6	463.3	478.3	498.0	508.4	516.5	516.2	503.2
37.5°	353.9	354.6	364.4	381.4	396.2	419.4	445.2	466.7	486.5	492.9	488.6
40°	294.8	299.7	306.3	320.6	335.3	355.6	388.4	417.2	441.6	460.5	465.6
42.5°	249.2	251.9	258.3	270.7	283.9	308.1	332.1	362.9	393.7	423.8	439.3
45°	209.7	212.2	218.0	226.8	239.0	258.1	282.8	312.7	345.7	380.9	403.0
47.5°	180.8	181.7	186.2	192.8	204.3	218.2	238.2	267.2	300.5	334.8	367.2
50°	158.1	159.5	162.5	167.7	176.2	189.2	205.1	226.9	257.7	293.3	326.3
52.5°	138.1	139.2	142.8	145.6	152.2	163.2	176.9	196.9	222.8	254.9	288.9
55°	121.7	122.8	124.6	127.8	133.0	140.4	152.2	168.0	190.3	217.3	249.2
57.5°	109.3	109.8	110.2	112.3	116.4	122.5	132.4	144.9	162.2	186.9	215.2
60°	97.5	97.4	98.8	100.4	102.9	106.6	113.9	125.1	140.6	160.7	187.1
62.5°	85.8	86.7	87.6	88.8	90.4	92.6	98.4	106.8	119.1	136.3	158.1
65°	76.2	76.4	77.1	77.2	79.2	81.3	85.8	91.5	101.6	115.7	133.7
67.5°	66.9	67.1	66.9	67.5	68.4	70.1	72.4	77.1	84.9	96.3	112.0
70°	58.4	57.8	57.1	58.0	58.9	59.8	61.4	65.0	70.8	79.4	92.4
72.5°	47.0	47.3	47.7	48.1	48.2	49.5	50.9	53.4	58.0	64.6	74.6
75°	36.3	36.3	36.8	37.2	38.8	39.2	40.8	42.5	46.3	50.9	58.7
77.5°	26.7	26.5	27.4	27.6	28.5	29.5	30.4	32.2	35.1	39.0	44.1
80°	19.2	19.4	19.2	19.2	19.8	20.5	21.7	22.6	24.6	27.1	30.8
82.5°	12.8	12.8	13.0	13.0	13.5	13.5	14.2	15.0	16.2	17.8	20.5
85°	7.5	7.5	7.3	7.3	7.5	7.5	8.2	8.7	8.9	10.0	10.9
87.5°	3.2	3.2	3.0	3.2	3.0	3.2	3.0	3.4	3.6	3.7	4.1
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°	413.7	413.7	413.7	413.7	413.7	413.7	413.7	413.7	413.7	413.7	413.7
2.5°	423.4	422.9	422.7	420.8	418.8	416.5	416.2	416.9	413.8	410.1	409.9
5°	434.5	432.5	429.7	425.9	422.7	418.5	416.3	415.4	410.8	405.5	404.4
7.5°	446.8	442.0	436.8	431.1	425.4	419.2	415.3	412.9	406.5	400.0	397.3
10°	458.5	452.3	444.5	435.7	427.7	419.2	413.3	409.2	401.4	393.2	389.1
12.5°	472.0	461.7	450.7	439.8	430.0	419.0	410.1	403.9	394.8	386.1	380.0
15°	481.8	466.9	458.3	442.9	430.6	417.2	406.4	396.9	387.0	377.3	371.3
17.5°	489.5	477.7	462.8	445.7	429.1	414.7	401.2	390.7	377.5	367.0	360.4
20°	492.0	480.1	464.7	446.1	429.5	411.0	395.0	382.3	368.3	355.5	346.4
22.5°	491.1	477.6	461.9	443.6	426.8	404.9	388.2	373.1	357.4	343.7	331.2
25°	489.1	473.5	456.2	438.9	420.2	398.7	379.5	362.9	344.1	329.1	314.2
27.5°	488.1	467.6	448.2	429.5	411.7	390.9	370.2	351.7	330.9	312.7	293.5
30°	487.7	463.3	438.9	417.2	400.8	379.7	359.2	339.6	315.2	294.8	275.2
32.5°	487.0	459.8	431.1	405.1	386.4	367.4	345.7	326.3	298.7	277.3	256.3
35°	482.2	453.5	422.0	392.5	370.6	350.8	331.4	311.1	282.5	259.5	239.4
37.5°	471.9	446.8	413.1	379.8	353.7	333.6	315.6	293.5	265.7	240.6	222.0
40°	456.6	436.1	403.5	367.4	336.6	314.5	295.5	275.9	247.2	223.2	206.3
42.5°	436.6	420.8	390.2	352.8	320.0	295.3	275.9	256.5	230.1	207.0	191.9
45°	410.5	400.7	373.8	336.9	304.0	275.4	254.4	237.4	213.1	191.9	178.0
47.5°	381.4	377.2	354.7	319.3	284.6	256.8	232.3	214.5	195.4	177.5	165.2
50°	346.4	349.8	332.1	299.6	265.9	237.4	213.4	194.2	177.6	163.8	152.9
52.5°	313.6	321.6	307.4	276.4	246.3	216.8	192.6	175.0	162.0	150.6	141.1
55°	277.1	288.7	280.2	253.5	223.6	197.4	173.2	157.3	146.1	137.4	129.4
57.5°	242.1	258.4	252.2	228.2	202.7	177.3	154.5	138.8	130.8	124.4	117.7
60°	210.9	225.9	225.0	204.5	179.1	156.5	137.8	123.7	116.6	112.3	106.4
62.5°	183.0	198.1	196.7	178.2	158.1	137.1	121.2	108.4	103.2	98.6	94.9
65°	154.5	167.5	168.2	154.5	135.1	118.2	104.7	94.5	89.9	87.0	84.4
67.5°	128.7	141.3	142.6	131.7	114.6	100.0	89.9	81.3	77.2	74.8	72.8
70°	106.1	116.4	118.7	109.6	95.2	83.8	75.3	68.7	66.0	63.5	62.8
72.5°	86.0	94.3	95.9	87.6	76.9	68.4	61.8	56.8	54.8	52.3	51.8
75°	68.4	74.2	74.4	68.9	60.9	54.3	48.9	45.9	43.8	42.0	41.7
77.5°	49.7	54.8	56.4	52.3	45.7	40.2	37.2	34.9	33.5	32.6	32.4
80°	36.0	39.3	40.0	36.5	32.6	29.2	27.1	25.1	24.2	23.3	23.0
82.5°	22.4	25.5	25.6	23.1	21.2	18.9	17.1	16.4	15.8	15.3	15.3
85°	12.1	13.7	13.5	12.5	11.6	10.3	9.6	9.3	8.9	8.5	8.5
87.5°	4.6	5.2	5.2	5.3	4.6	4.1	3.7	3.9	3.7	3.7	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°	413.7	413.7	413.7	413.7	413.7	413.7	413.7	413.7	413.7	413.7	413.7
2.5°	408.7	408.0	406.2	403.3	401.7	398.2	398.4	399.1	399.2	398.7	398.5
5°	401.4	399.2	396.4	392.8	390.3	387.7	385.9	387.0	386.4	386.2	385.4
7.5°	393.4	390.5	387.0	383.4	380.6	377.0	375.6	374.3	372.9	372.7	372.0
10°	385.4	381.8	377.7	372.5	368.6	364.2	359.9	357.6	354.9	353.0	348.9
12.5°	375.9	369.9	365.2	359.9	352.8	345.7	340.9	334.3	330.7	327.2	322.3
15°	365.1	357.2	349.2	338.5	332.3	322.3	315.2	310.4	304.9	301.3	297.3
17.5°	349.6	341.4	331.2	319.1	308.1	298.0	292.8	286.6	284.3	276.4	275.7
20°	334.3	322.0	309.4	297.1	284.8	277.5	270.9	266.8	262.5	257.6	256.0
22.5°	317.0	301.0	287.6	276.2	265.0	257.0	253.8	249.2	245.1	242.3	239.6
25°	296.0	281.2	267.7	257.0	246.9	240.8	236.7	233.4	231.6	228.4	227.3
27.5°	276.6	261.8	251.0	241.0	232.8	227.5	223.9	220.9	218.6	218.0	216.8
30°	256.8	244.2	233.9	225.3	218.0	215.2	211.8	210.4	209.0	208.3	206.8
32.5°	239.0	227.8	218.8	210.6	206.3	203.6	201.8	200.4	199.4	199.0	198.6
35°	222.8	212.5	205.1	199.2	196.0	193.1	192.2	191.0	190.5	190.3	190.1
37.5°	208.6	199.0	193.3	188.1	185.8	183.2	183.3	182.8	182.4	181.4	182.1
40°	194.2	186.7	180.8	176.7	175.1	174.3	173.9	173.5	173.7	173.7	173.5
42.5°	181.0	174.4	170.7	166.8	166.1	165.4	165.4	164.8	165.0	165.9	166.2
45°	169.1	163.9	160.6	157.3	157.3	156.5	157.2	157.0	157.5	158.1	158.4
47.5°	157.2	152.5	150.0	148.4	147.7	147.7	148.3	149.2	149.5	149.7	150.0
50°	145.2	141.9	139.7	138.8	138.7	139.5	140.1	139.9	140.4	141.1	141.7
52.5°	134.7	131.7	130.3	129.9	129.9	130.6	130.8	131.4	131.7	131.7	132.4
55°	123.9	121.7	120.7	120.5	120.7	121.0	121.7	122.1	121.9	122.3	122.3
57.5°	113.0	111.4	110.9	111.4	111.4	112.1	112.1	112.1	112.0	112.7	112.5
60°	102.9	101.1	101.6	101.5	102.0	102.0	102.5	102.5	102.0	102.7	103.1
62.5°	92.7	92.4	91.7	91.7	92.2	92.4	91.8	92.4	92.6	93.1	93.4
65°	82.1	80.8	81.3	81.2	81.7	82.6	81.9	81.9	82.4	83.1	83.5
67.5°	71.9	70.8	71.4	71.6	71.6	71.9	71.4	71.7	72.4	73.3	73.9
70°	61.6	61.2	61.4	61.2	61.2	62.1	62.3	62.1	62.8	63.7	63.9
72.5°	51.1	51.4	51.1	51.4	51.8	51.3	51.4	52.0	52.7	53.2	54.1
75°	41.5	40.9	41.1	42.0	41.8	42.2	42.0	42.5	43.8	43.4	43.6
77.5°	32.0	31.9	32.0	32.2	32.4	32.9	32.8	33.6	33.8	34.0	34.4
80°	22.8	23.0	23.1	23.5	24.0	23.9	24.2	24.4	25.1	24.4	24.9
82.5°	15.5	15.3	15.7	15.7	16.2	16.6	16.0	16.0	16.0	15.8	15.8
85°	8.5	9.1	9.1	9.1	8.7	8.7	8.9	8.7	8.7	8.7	8.5
87.5°	3.7	3.7	3.6	3.4	3.6	3.4	3.4	3.2	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):**

	165°	170°	175°	180°
0°	413.7	413.7	413.7	413.7
2.5°	397.5	398.4	397.3	396.6
5°	384.5	384.5	383.4	383.0
7.5°	369.9	370.1	368.1	366.7
10°	348.0	346.9	344.1	342.5
12.5°	318.8	320.4	316.1	312.9
15°	293.3	288.9	290.7	288.7
17.5°	272.0	270.6	268.6	268.8
20°	253.3	252.2	251.2	251.3
22.5°	238.5	237.6	237.3	236.0
25°	226.2	226.6	225.7	225.7
27.5°	216.1	215.6	215.0	214.3
30°	206.5	206.7	206.1	205.8
32.5°	197.9	198.1	197.8	197.2
35°	189.6	189.4	189.6	189.0
37.5°	181.9	181.7	181.9	182.6
40°	174.1	174.3	173.7	174.4
42.5°	166.4	166.6	166.6	166.2
45°	158.1	158.6	158.8	159.1
47.5°	149.9	150.8	150.4	150.6
50°	141.7	141.5	141.5	141.3
52.5°	132.6	132.1	131.9	132.1
55°	121.7	122.5	122.5	122.5
57.5°	112.8	113.0	113.6	112.8
60°	103.8	103.8	103.9	105.4
62.5°	93.6	93.8	94.2	94.3
65°	83.8	84.4	84.2	84.0
67.5°	74.2	74.2	74.4	74.0
70°	64.3	64.3	64.3	65.1
72.5°	53.9	53.9	54.1	54.5
75°	44.3	44.3	44.3	43.8
77.5°	33.8	34.0	34.0	34.2
80°	24.6	24.4	24.4	24.2
82.5°	15.5	15.7	15.5	15.3
85°	8.5	8.7	8.2	8.2
87.5°	3.0	3.0	2.8	3.2
90°	0.0	0.0	0.0	0.0

(END OF REPORT)