

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: P243326

Luminaire Tested: **S123DR-H340D835-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P243326
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-59)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S123DR-H340D835-X4F0-XX-UDD-A-W
Description: DEFINE 3 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 3500K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1377.6 lumens
Efficiency: N/A
Efficacy: 123.0 lumens/watt
Spacing Criteria (0/90/45): 1.39 / 1.21 / 1.5
Luminous Opening: Rectangular (W 3.88' x L: 0.23' x H: 0')
CIE Type: Direct

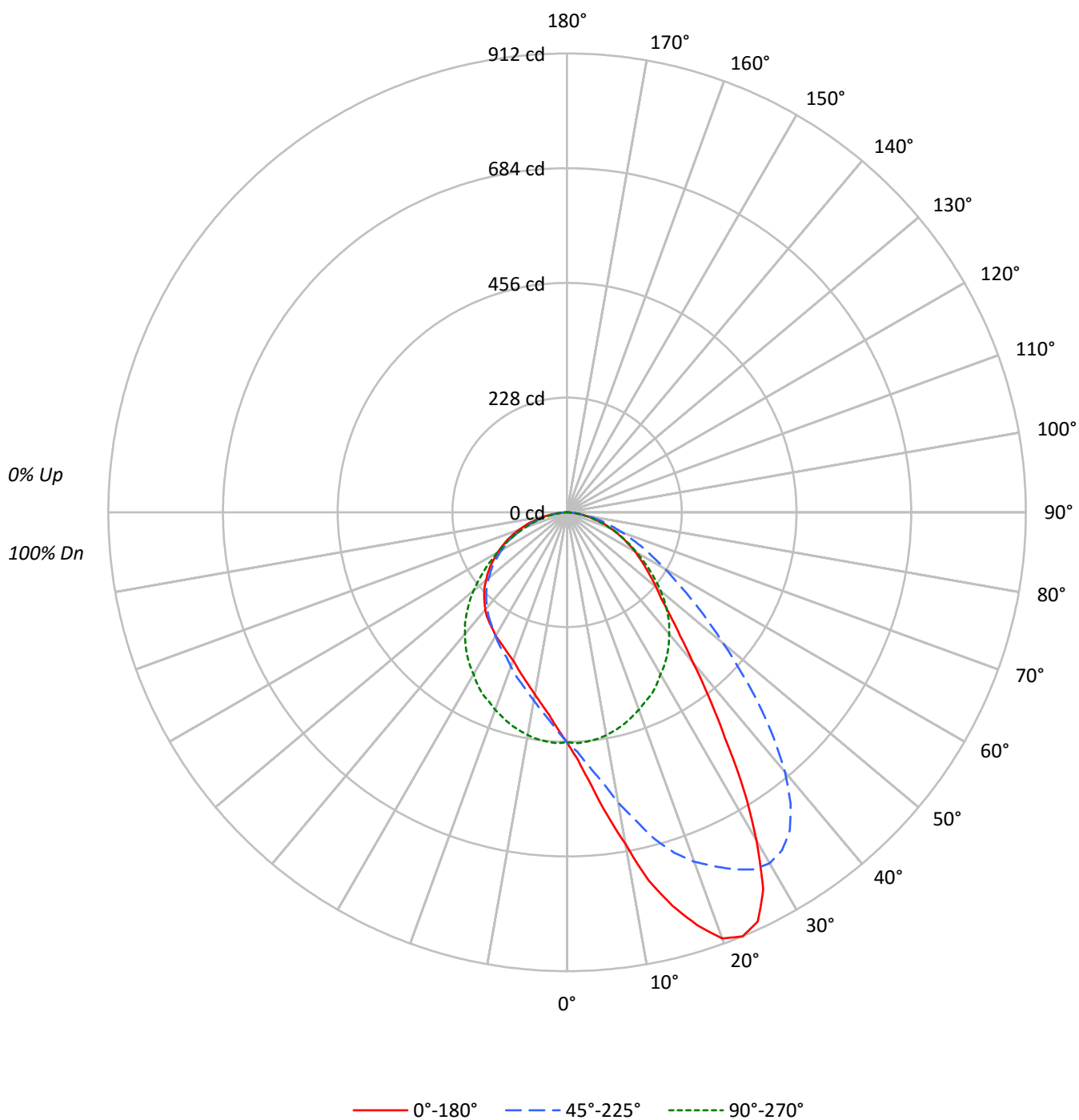
Input Watts (W): 11.2
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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					0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	0
RCR																				
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100		100
1	110	105	101	98	107	103	99	96	99	96	93	95	92	90	91	89	87	85		85
2	100	92	86	81	98	91	85	80	87	82	78	84	80	76	81	77	74	72		72
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64	62		62
4	84	73	64	58	82	72	64	58	69	62	57	67	61	56	65	60	55	53		53
5	78	65	57	50	76	64	56	50	62	55	50	60	54	49	58	53	49	46		46
6	72	59	50	44	70	58	50	44	56	49	44	55	48	43	53	47	43	41		41
7	67	54	45	39	65	53	45	39	51	44	39	50	43	39	49	43	38	36		36
8	62	49	41	35	61	48	41	35	47	40	35	46	39	35	45	39	34	33		33
9	58	45	37	32	57	45	37	32	43	36	31	42	36	31	41	35	31	29		29
10	55	42	34	29	53	41	34	29	40	33	29	39	33	28	38	33	28	27		27

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	5541	5541	5541
5°	6601	5567	4921
10°	8244	5534	4523
15°	10160	5474	4244
20°	11625	5387	4039
25°	11998	5327	3964
30°	10541	5200	3967
35°	8090	5123	3970
40°	6154	4997	4000
45°	4951	4836	3998
50°	4358	4579	3962
55°	4015	4241	3937
60°	3784	3881	3857
65°	3519	3548	3783
70°	3218	3183	3618
75°	2861	2773	3372
80°	2394	2297	2953
85°	1683	1655	2211

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	45.0	3.3
10°-20°	144.4	10.5
20°-30°	238.5	17.3
30°-40°	272.9	19.8
40°-50°	247.3	18.0
50°-60°	199.8	14.5
60°-70°	139.2	10.1
70°-80°	73.0	5.3
80°-90°	17.4	1.3
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°	427.8	31.1
0°-40°	700.8	50.9
0°-60°	1148.0	83.3
0°-90°	1377.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1377.6	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	457	457	457	457	457	
5°	542	507	458	414	404	56
15°	810	672	436	351	338	230
25°	897	783	398	304	296	401
35°	547	772	346	266	268	346
45°	289	539	282	227	233	228
55°	190	303	201	178	186	171
65°	123	165	124	122	132	122
75°	61	75	59	62	72	65
85°	12	16	12	13	16	15
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°	457.1	457.1	457.1	457.1	457.1	457.1	457.1	457.1	457.1	457.1	457.1
2.5°	492.3	493.3	491.6	492.7	490.2	488.7	486.4	485.4	480.3	476.8	475.5
5°	542.5	542.5	542.9	540.4	537.5	532.3	525.3	520.9	515.9	507.3	502.9
7.5°	605.7	602.6	600.5	595.9	591.9	583.3	575.8	566.8	555.1	540.8	533.3
10°	669.8	673.1	671.0	666.2	655.9	641.9	630.8	617.9	599.6	585.8	566.2
12.5°	749.7	745.3	742.0	734.6	723.3	708.5	691.3	672.1	648.6	625.8	603.8
15°	809.6	810.2	810.0	800.4	789.3	769.2	753.3	721.3	691.5	672.3	635.9
17.5°	860.2	862.9	859.8	845.4	835.5	823.6	803.3	767.7	740.7	709.5	669.3
20°	901.2	901.7	896.6	886.0	874.7	861.3	834.5	807.3	780.9	739.0	700.7
22.5°	912.1	913.2	912.1	907.5	898.3	884.1	864.0	838.9	805.6	761.0	725.4
25°	897.1	896.4	900.0	897.3	896.9	892.2	879.1	858.8	825.9	783.0	737.8
27.5°	844.3	839.9	848.9	860.6	862.3	869.6	869.9	860.4	836.8	800.2	751.0
30°	753.1	757.3	761.6	786.1	799.7	818.8	835.3	841.4	832.4	805.4	759.3
32.5°	653.9	667.3	679.6	696.6	716.4	748.7	774.8	797.9	807.7	795.8	759.3
35°	546.7	553.8	573.3	594.8	623.5	648.6	700.5	734.0	763.9	771.7	749.7
37.5°	463.0	469.5	476.2	492.9	525.1	567.0	609.9	653.9	698.2	730.0	728.8
40°	388.9	390.3	396.2	410.6	437.4	474.7	519.7	572.6	630.2	673.5	691.7
42.5°	332.0	332.0	339.3	356.0	371.5	398.7	442.3	488.9	551.9	607.6	646.5
45°	288.8	289.3	295.1	307.0	319.2	340.5	372.8	416.7	481.6	539.2	593.4
47.5°	253.7	257.6	261.0	267.3	279.4	298.3	321.7	359.2	405.4	468.2	531.4
50°	231.1	231.9	234.4	238.2	247.6	260.0	280.3	308.7	349.7	405.4	469.3
52.5°	208.9	208.9	211.4	216.0	221.4	231.5	246.1	269.8	300.6	351.0	408.3
55°	190.0	190.7	191.1	194.9	199.5	207.0	218.5	234.0	262.3	302.6	352.7
57.5°	171.6	173.9	173.3	176.2	179.6	185.0	193.2	206.6	228.1	258.9	303.9
60°	156.1	155.7	156.8	158.0	160.3	164.1	171.6	181.5	199.5	225.2	262.0
62.5°	138.6	138.1	139.4	140.9	143.0	146.1	151.5	159.1	173.3	192.6	224.6
65°	122.7	122.2	122.9	123.7	126.0	128.5	132.7	139.0	148.4	165.3	189.8
67.5°	106.7	106.7	107.2	108.0	109.5	111.3	114.7	118.5	127.9	139.2	158.4
70°	90.8	91.0	91.0	91.9	93.1	94.6	97.3	100.7	106.5	116.6	132.1
72.5°	77.0	77.0	76.6	77.0	77.9	78.5	80.2	83.3	87.7	95.0	106.7
75°	61.1	62.2	62.0	61.7	62.4	63.4	64.9	67.4	70.1	75.3	84.1
77.5°	46.9	47.5	47.5	47.7	48.3	49.2	49.6	52.1	54.6	57.8	64.3
80°	34.3	34.7	34.3	34.5	35.0	35.8	36.6	37.0	38.9	41.7	44.8
82.5°	23.0	22.4	23.2	23.0	23.4	23.7	24.1	24.3	25.5	27.2	29.3
85°	12.1	13.2	13.0	13.4	13.0	13.2	13.4	14.2	14.4	15.5	16.7
87.5°	4.6	5.0	5.0	5.0	5.0	5.0	5.4	5.7	6.1	6.3	6.7
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):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	457.1	457.1	457.1	457.1	457.1	457.1	457.1	457.1	457.1	457.1	457.1
2.5°	476.4	474.5	471.8	468.8	465.7	462.6	461.1	459.2	455.4	451.7	448.7
5°	499.4	494.2	487.0	481.8	474.3	467.2	461.5	457.5	451.5	444.1	439.3
7.5°	525.1	515.7	504.4	492.9	481.6	470.9	462.1	454.6	445.2	436.2	428.9
10°	555.5	537.3	521.6	504.8	488.1	473.0	460.5	449.6	437.4	426.6	417.6
12.5°	582.3	561.1	539.4	515.7	493.1	473.6	457.5	443.3	428.6	416.1	406.9
15°	611.8	582.1	551.9	525.1	497.7	473.9	452.7	436.2	419.4	405.2	394.5
17.5°	645.7	605.9	568.0	529.5	505.3	474.5	448.5	426.8	409.6	395.4	381.6
20°	665.8	626.2	579.8	540.2	500.0	468.4	439.5	417.6	397.5	381.1	369.8
22.5°	676.7	635.0	586.5	545.9	499.0	463.6	432.8	406.9	385.3	369.0	356.2
25°	691.9	635.0	590.0	541.3	500.6	458.0	423.2	398.3	375.7	356.9	343.5
27.5°	698.9	640.7	590.4	532.5	490.6	447.3	412.1	385.7	360.6	342.2	330.7
30°	704.5	641.7	582.1	525.6	478.9	435.3	401.0	371.5	348.1	330.5	318.3
32.5°	704.9	639.0	570.8	512.6	463.2	421.3	387.8	360.0	335.5	316.9	305.0
35°	701.2	632.3	557.8	492.7	445.0	406.9	373.4	346.2	321.3	303.5	291.3
37.5°	691.5	624.8	545.6	474.1	423.4	386.4	357.9	332.0	307.3	289.5	279.4
40°	671.0	612.6	529.7	454.2	401.6	364.6	339.7	315.8	293.9	275.4	265.4
42.5°	643.8	594.4	510.5	433.0	377.4	341.6	319.6	300.3	278.0	262.0	251.8
45°	605.3	569.7	491.2	410.9	353.3	318.1	298.0	282.1	262.9	247.0	238.0
47.5°	561.8	540.0	466.3	386.0	328.0	294.9	275.9	263.1	246.8	233.2	224.2
50°	512.8	504.6	438.9	360.8	304.3	270.4	252.8	242.8	229.0	218.1	210.3
52.5°	459.6	464.6	410.0	335.3	281.5	247.2	230.4	221.2	212.4	203.2	195.9
55°	405.6	417.6	375.1	307.5	255.3	225.4	209.1	200.7	194.2	186.5	181.3
57.5°	355.0	373.6	338.9	277.7	231.3	202.6	187.1	179.8	175.0	170.8	166.0
60°	305.8	327.3	301.6	249.9	207.2	181.0	167.2	160.1	157.8	154.7	150.1
62.5°	262.3	284.2	265.0	221.2	182.9	160.5	148.0	142.1	138.8	137.7	135.0
65°	221.4	242.0	227.3	191.3	159.9	140.0	128.9	123.7	121.8	121.6	119.5
67.5°	186.1	206.0	192.6	162.2	135.6	119.5	111.1	107.0	105.1	105.3	103.8
70°	153.4	167.4	159.5	135.6	115.1	100.9	94.4	89.8	88.3	88.3	87.9
72.5°	123.1	134.2	128.1	109.9	93.8	82.9	77.2	74.5	73.3	73.0	73.3
75°	96.3	105.9	100.5	86.2	74.1	65.9	61.1	59.2	58.6	58.2	58.4
77.5°	72.0	78.1	74.7	65.5	55.5	49.8	47.5	45.6	45.0	45.2	45.6
80°	50.9	54.2	52.3	46.5	39.8	36.0	34.3	32.9	32.2	32.9	32.9
82.5°	32.2	34.7	33.1	29.3	26.0	23.4	21.8	21.3	21.1	20.7	21.3
85°	17.6	18.8	18.0	16.7	14.4	13.4	12.1	11.9	11.9	11.9	11.9
87.5°	6.9	7.7	6.7	6.7	6.3	5.2	5.2	5.0	4.8	5.0	5.0
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°	457.1	457.1	457.1	457.1	457.1	457.1	457.1	457.1	457.1	457.1	457.1
2.5°	447.5	444.8	443.1	440.8	438.1	434.5	433.0	434.5	433.7	432.2	432.8
5°	435.1	431.6	427.0	423.2	419.0	413.8	412.1	411.3	410.0	409.4	408.3
7.5°	423.0	417.8	412.1	406.9	400.8	396.2	394.1	392.6	392.2	389.1	387.8
10°	410.4	404.0	398.3	391.2	386.0	379.9	377.4	375.7	373.8	371.7	370.3
12.5°	397.3	390.8	383.6	377.0	371.7	365.0	361.7	359.8	358.3	356.9	355.2
15°	385.7	379.3	369.4	364.4	358.1	351.4	349.3	345.1	345.6	343.0	341.4
17.5°	373.6	364.0	357.1	349.5	344.9	340.1	336.1	331.7	331.1	329.2	328.6
20°	360.0	350.0	345.1	337.4	331.1	326.3	322.7	322.3	321.1	318.3	317.3
22.5°	346.6	338.4	331.7	324.6	319.0	312.7	311.0	311.6	309.3	308.7	306.4
25°	334.5	327.3	319.0	312.3	307.7	303.7	301.4	300.6	299.7	299.1	298.0
27.5°	321.5	314.0	306.8	301.4	297.0	294.3	292.8	290.9	290.7	290.7	290.3
30°	308.5	301.8	297.0	290.1	286.1	284.4	283.2	282.6	283.2	283.2	283.4
32.5°	296.6	290.1	284.4	279.6	275.6	274.4	274.2	274.2	275.0	275.0	275.6
35°	284.2	277.7	272.5	269.2	265.8	265.6	265.8	266.2	267.3	267.5	268.3
37.5°	270.8	265.8	261.8	257.6	256.8	257.2	257.6	258.1	258.5	260.2	260.2
40°	258.5	254.7	250.7	248.0	246.6	247.6	248.2	248.4	249.7	250.7	251.6
42.5°	246.3	242.8	239.6	237.3	236.7	237.6	238.2	238.8	240.1	240.9	242.4
45°	232.7	230.4	227.7	225.8	226.0	227.3	227.3	229.4	230.2	230.6	231.7
47.5°	220.2	217.7	215.8	215.0	214.7	215.8	216.4	218.1	218.5	220.0	220.8
50°	206.8	204.9	203.4	202.4	202.6	203.0	204.5	206.2	206.6	208.3	209.7
52.5°	192.8	191.1	189.8	190.3	190.9	190.9	192.3	193.4	194.4	195.7	197.2
55°	179.0	176.6	176.9	176.2	176.9	178.3	179.0	180.6	181.5	182.1	184.2
57.5°	163.9	163.5	162.8	162.2	163.5	164.1	165.1	166.2	167.6	168.5	170.0
60°	148.4	147.8	147.8	148.6	149.0	150.3	152.0	152.6	153.0	154.7	156.6
62.5°	134.2	133.5	133.3	134.6	134.6	135.8	136.5	137.5	139.2	139.8	142.3
65°	118.9	118.5	118.5	119.5	119.7	122.0	122.0	122.0	123.1	125.4	126.6
67.5°	103.0	103.2	103.8	104.4	105.3	105.9	106.1	107.4	109.0	110.5	113.0
70°	87.1	88.1	89.4	89.2	89.8	90.8	91.0	92.3	93.8	95.7	98.6
72.5°	72.8	73.5	74.7	74.7	75.6	76.2	77.2	78.1	80.0	81.6	82.9
75°	58.6	58.8	59.9	60.5	61.1	61.5	62.6	64.0	65.1	66.6	68.4
77.5°	46.0	45.6	46.5	46.7	47.1	47.9	48.8	50.2	51.1	52.7	53.4
80°	32.7	33.5	33.7	33.9	34.3	35.4	36.0	36.6	37.5	38.9	39.6
82.5°	21.6	22.0	22.6	22.8	23.2	23.4	23.7	24.7	25.3	25.7	27.8
85°	12.6	13.2	12.8	12.8	13.2	13.4	14.2	14.2	15.1	14.7	15.7
87.5°	5.4	5.2	5.2	5.4	5.2	5.0	5.7	5.7	5.4	5.7	5.7
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):

	165°	170°	175°	180°
0°	457.1	457.1	457.1	457.1
2.5°	431.8	431.8	430.1	430.7
5°	406.3	407.1	405.0	404.4
7.5°	387.4	386.6	385.1	385.1
10°	369.0	368.2	367.5	367.5
12.5°	353.1	352.3	351.0	352.0
15°	338.9	339.1	338.2	338.2
17.5°	328.0	326.1	325.5	325.3
20°	315.0	315.4	314.6	313.1
22.5°	306.8	305.8	305.0	304.7
25°	298.5	297.4	297.2	296.4
27.5°	290.1	290.3	289.7	289.7
30°	283.2	283.8	283.2	283.4
32.5°	276.3	276.3	276.3	275.4
35°	268.7	269.0	268.7	268.3
37.5°	261.0	261.0	261.2	261.6
40°	252.4	252.4	252.8	252.8
42.5°	242.2	243.2	243.8	242.8
45°	233.0	233.2	233.4	233.2
47.5°	222.7	222.1	222.3	222.7
50°	209.9	211.4	211.4	210.1
52.5°	197.6	198.0	198.8	198.8
55°	185.4	185.6	185.9	186.3
57.5°	171.6	171.8	171.8	171.6
60°	157.8	159.1	158.9	159.1
62.5°	143.0	144.8	145.5	145.3
65°	128.9	129.3	130.4	131.9
67.5°	114.1	115.1	116.8	116.4
70°	99.4	100.9	101.3	102.1
72.5°	84.8	86.7	87.1	87.5
75°	70.5	71.4	72.2	72.0
77.5°	55.0	56.3	57.8	56.9
80°	41.2	41.4	42.7	42.3
82.5°	27.2	28.9	28.9	28.0
85°	15.9	15.9	15.9	15.9
87.5°	5.4	5.2	5.7	5.4
90°	0.0	0.0	0.0	0.0

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