

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: P243616

Luminaire Tested: **S124RDR-H350D935-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P243616
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-70)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124RDR-H350D935-X4F0-XX-UDD-A-W
Description: DEFINE 4 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 3500K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1194.5 lumens
Efficiency: N/A
Efficacy: 106.6 lumens/watt
Spacing Criteria (0/90/45): 1.27 / 1.23 / 1.39
Luminous Opening: Rectangular (W 3.88' x L: 0.31' x H: 0')
CIE Type: Direct

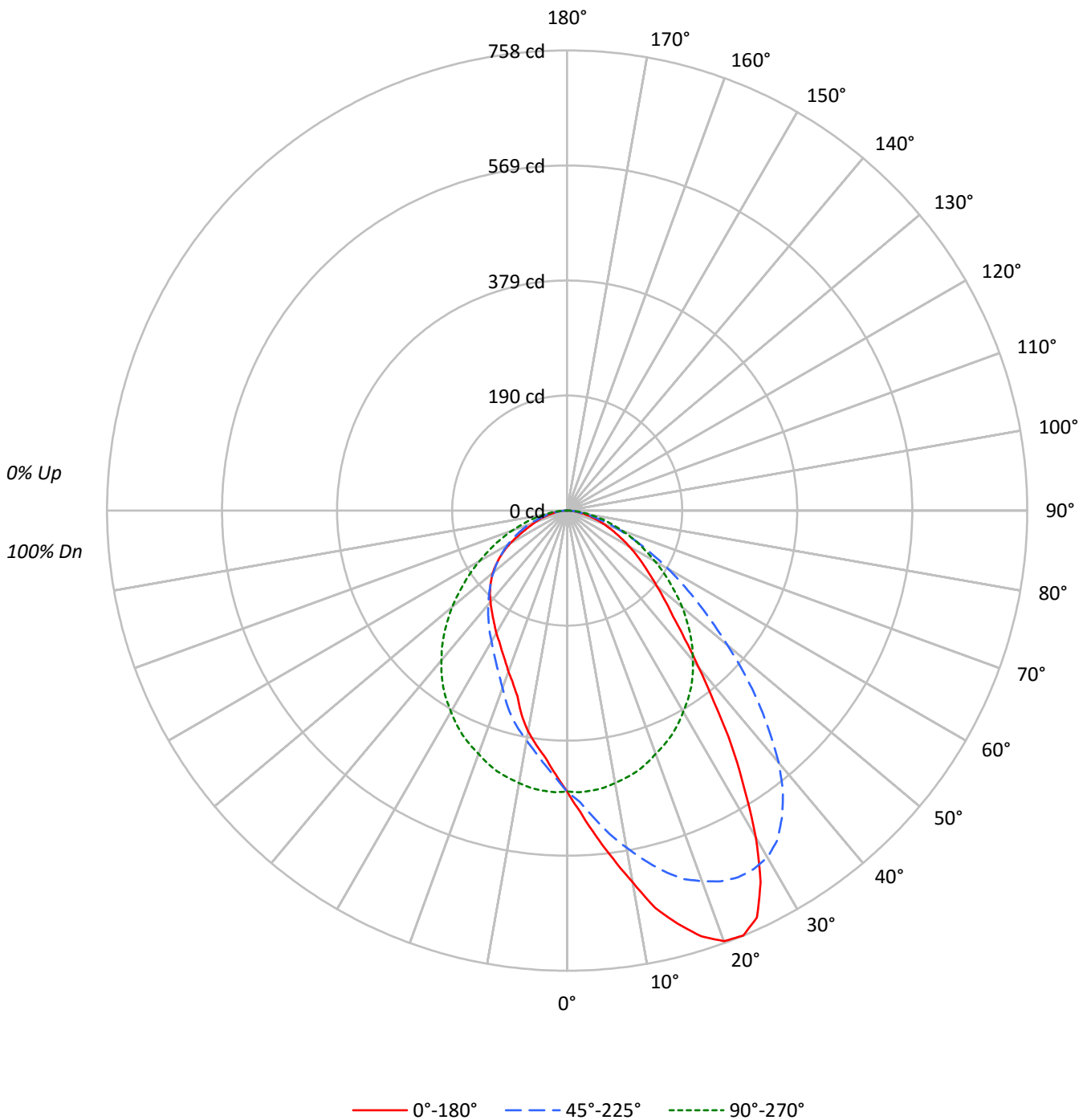
Input Watts (W): 11.2
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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	97	99	96	93	95	93	91	92	90	88	86
2	101	93	87	82	98	91	86	81	88	83	79	85	81	77	82	78	75	73
3	92	83	75	69	90	81	74	68	78	72	67	76	70	66	73	69	65	63
4	85	74	66	59	83	73	65	59	70	63	58	68	62	57	66	61	57	55
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	58	50	45	56	50	45	54	49	44	42
7	68	55	46	41	66	54	46	40	53	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	45	38	33	43	37	33	42	37	32	31
10	56	43	35	30	54	42	35	30	41	35	30	40	34	30	39	34	30	28

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	4114	4114	4114
5°	4792	4131	3647
10°	5612	4114	3335
15°	6485	4093	2913
20°	7140	4035	2669
25°	7254	3999	2496
30°	6385	3927	2394
35°	5124	3861	2316
40°	3898	3738	2279
45°	3095	3600	2251
50°	2656	3421	2213
55°	2346	3200	2106
60°	2101	2971	1929
65°	1849	2745	1622
70°	1648	2492	1461
75°	1436	2267	1298
80°	1218	1945	1198
85°	1071	1673	1214



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	44.9	3.8
10°-20°	136.2	11.4
20°-30°	212.5	17.8
30°-40°	237.0	19.8
40°-50°	213.1	17.8
50°-60°	168.3	14.1
60°-70°	111.8	9.4
70°-80°	56.1	4.7
80°-90°	14.6	1.2
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
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0°-30°	393.6	33.0
0°-40°	630.6	52.8
0°-60°	1012.0	84.7
0°-90°	1194.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1194.5	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	463	463	463	463	463	
5°	537	508	463	420	409	54
15°	705	615	445	352	316	200
25°	740	667	408	277	254	331
35°	472	617	356	225	213	293
45°	246	444	286	180	179	195
55°	151	261	206	136	136	136
65°	88	134	130	89	77	88
75°	42	53	66	44	38	45
85°	10	11	16	12	12	12
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°	462.8	462.8	462.8	462.8	462.8	462.8	462.8	462.8	462.8	462.8	462.8
2.5°	497.0	495.2	495.1	492.7	492.5	490.2	489.5	487.5	483.5	480.5	480.6
5°	537.1	535.6	535.4	533.1	532.4	529.5	525.0	519.6	513.3	508.0	504.6
7.5°	578.1	580.7	578.0	578.0	572.7	569.3	560.5	556.0	545.2	537.6	529.7
10°	621.8	624.1	623.0	620.9	614.0	607.0	597.8	589.0	575.8	563.9	556.0
12.5°	670.4	663.4	667.9	661.2	655.6	644.5	635.6	618.0	607.5	590.2	574.7
15°	704.7	702.0	701.8	697.3	691.1	678.9	669.3	651.0	633.1	614.9	597.4
17.5°	735.3	735.7	733.1	725.9	718.0	706.1	693.1	676.7	656.4	636.2	615.5
20°	754.8	754.9	753.1	749.4	740.7	729.9	716.6	695.1	672.0	649.7	629.0
22.5°	757.6	758.2	757.6	755.3	749.4	740.5	728.3	710.1	686.8	661.2	636.5
25°	739.6	741.4	741.6	744.9	741.8	738.4	729.4	714.0	692.6	666.6	639.8
27.5°	690.2	695.3	700.0	705.7	711.0	715.7	716.4	708.3	689.9	665.7	640.1
30°	622.1	628.1	637.4	643.6	659.8	670.1	683.9	687.0	678.2	659.6	634.9
32.5°	542.8	549.1	552.7	572.9	596.2	612.9	636.0	649.7	653.1	644.3	624.1
35°	472.2	473.3	476.0	498.9	521.9	547.3	576.0	599.8	616.0	616.9	607.0
37.5°	396.5	397.7	408.4	425.9	445.9	473.8	506.8	540.7	570.4	584.1	581.2
40°	335.9	335.6	346.9	362.1	381.5	410.5	444.6	481.5	513.3	541.9	548.8
42.5°	286.9	288.2	297.9	306.7	325.5	345.8	382.2	420.6	461.4	492.7	513.6
45°	246.2	249.4	256.1	264.4	278.4	297.2	326.9	365.1	406.8	444.4	469.5
47.5°	218.1	219.0	222.4	232.7	242.0	257.2	282.6	315.0	352.0	394.1	427.1
50°	192.1	194.3	195.5	201.7	210.9	225.3	244.9	269.1	305.7	344.4	385.7
52.5°	169.8	171.0	173.4	179.0	186.2	196.3	211.8	233.0	263.5	299.3	338.3
55°	151.4	151.6	153.9	157.9	163.5	171.2	186.0	201.3	228.3	261.0	296.3
57.5°	134.8	133.7	135.9	138.2	143.6	150.3	159.9	175.5	196.6	224.4	256.3
60°	118.2	119.1	118.9	121.6	124.5	131.2	139.3	149.6	166.9	192.3	219.3
62.5°	102.7	102.5	104.3	106.0	108.0	113.4	120.0	128.5	142.0	160.8	186.9
65°	87.9	88.3	89.7	91.0	93.2	96.6	101.6	108.5	119.3	133.7	155.7
67.5°	74.6	75.9	76.6	77.0	78.9	81.5	85.8	91.4	98.8	110.3	128.7
70°	63.4	63.8	64.2	65.4	66.3	67.8	71.0	74.1	80.7	89.2	102.5
72.5°	53.0	52.6	53.7	54.1	54.4	55.9	57.9	59.5	63.8	71.0	79.3
75°	41.8	42.0	42.2	42.7	44.2	44.3	45.2	47.0	50.1	53.0	58.6
77.5°	31.4	31.9	31.7	32.3	32.8	33.3	33.7	35.3	37.5	39.8	42.5
80°	23.8	23.8	23.8	24.1	23.8	25.1	25.1	25.6	26.1	27.2	29.2
82.5°	16.2	16.6	16.8	16.9	17.1	17.1	17.3	17.7	18.4	18.7	19.3
85°	10.5	10.1	10.3	10.3	10.3	10.3	10.6	11.0	11.0	11.2	11.7
87.5°	4.7	4.7	4.7	4.7	4.5	4.7	4.9	4.9	5.0	5.0	5.4
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):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	462.8	462.8	462.8	462.8	462.8	462.8	462.8	462.8	462.8	462.8	462.8
2.5°	479.6	479.0	476.3	473.4	470.7	468.0	467.1	464.4	461.2	458.3	455.1
5°	501.0	496.7	490.7	484.6	478.3	472.5	468.0	463.0	457.2	450.4	445.0
7.5°	522.6	514.7	505.0	496.0	485.2	476.5	467.9	460.6	452.4	442.6	435.2
10°	543.7	530.6	518.7	504.4	490.7	478.8	467.9	455.8	444.8	434.3	424.1
12.5°	560.5	547.3	530.2	512.7	495.1	479.6	464.8	450.6	436.9	424.2	412.9
15°	579.6	560.7	539.6	520.3	496.1	477.0	460.1	444.8	429.1	413.8	401.4
17.5°	593.6	571.3	545.2	523.0	499.8	476.0	455.6	436.3	418.3	402.3	389.5
20°	604.5	578.0	551.8	523.7	496.0	471.6	448.7	426.6	408.4	390.9	377.4
22.5°	609.1	581.2	552.2	521.7	492.2	464.6	440.8	417.9	397.4	379.4	363.7
25°	611.1	580.5	550.4	515.8	485.9	457.8	431.3	407.7	386.6	366.2	350.7
27.5°	609.5	576.7	542.1	509.5	475.6	448.0	419.9	395.9	374.0	354.3	337.0
30°	605.2	568.1	533.6	497.0	464.4	435.4	408.0	382.6	360.4	340.4	323.3
32.5°	594.0	558.3	519.2	483.5	448.4	419.7	394.9	369.8	347.3	326.4	309.8
35°	580.1	545.2	504.3	467.0	432.2	403.2	378.1	355.8	333.6	311.4	294.5
37.5°	562.6	527.1	487.7	447.5	413.4	385.3	362.4	339.9	317.9	297.5	278.6
40°	539.0	506.6	467.0	426.6	392.3	365.3	342.8	322.1	302.6	282.6	262.2
42.5°	509.7	485.0	444.1	404.2	370.7	343.9	323.9	305.3	286.6	266.0	247.6
45°	478.3	457.2	420.1	379.9	348.0	321.9	302.8	286.4	268.7	250.5	231.2
47.5°	443.0	427.3	395.2	355.4	321.9	299.5	281.9	266.9	250.9	234.6	215.9
50°	403.2	393.6	366.2	330.0	298.1	275.4	260.8	247.4	233.7	217.5	201.5
52.5°	363.3	361.5	335.9	304.0	273.9	252.8	238.6	226.4	215.2	199.9	186.3
55°	321.5	326.9	305.7	276.3	249.4	229.1	216.4	206.5	196.8	183.8	170.8
57.5°	284.4	290.5	275.9	248.9	223.8	206.5	195.7	186.7	178.2	166.3	157.7
60°	243.3	254.5	246.7	222.0	199.9	184.4	174.3	167.1	160.0	149.8	142.2
62.5°	210.9	218.6	214.1	195.7	176.1	163.5	154.4	147.8	142.2	134.3	126.9
65°	176.1	185.8	183.5	171.4	154.1	142.6	135.7	130.5	124.7	118.4	112.3
67.5°	144.7	154.8	154.3	146.0	133.2	123.6	117.1	113.4	108.7	102.5	98.8
70°	116.4	125.8	126.2	122.0	113.0	104.0	99.3	95.9	92.3	87.8	85.1
72.5°	90.5	98.9	100.4	98.4	92.6	86.7	82.5	80.2	77.1	73.3	71.0
75°	67.6	73.7	77.1	76.2	73.9	69.9	67.6	66.0	62.9	60.2	58.2
77.5°	48.1	53.0	56.4	57.9	56.8	55.1	53.0	51.7	48.5	47.2	46.1
80°	32.3	36.6	39.6	40.5	41.1	40.7	38.7	38.0	36.4	35.9	34.8
82.5°	19.8	22.2	24.3	26.7	27.8	27.8	26.7	26.9	25.4	24.7	24.3
85°	12.1	12.6	13.0	14.8	16.2	16.8	16.2	16.4	15.9	15.3	14.8
87.5°	5.6	5.6	5.8	6.1	6.5	7.6	7.9	8.5	7.7	7.7	6.5
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°	462.8	462.8	462.8	462.8	462.8	462.8	462.8	462.8	462.8	462.8	462.8
2.5°	453.1	450.7	448.9	446.0	443.7	439.9	438.7	438.7	439.4	438.5	439.4
5°	441.2	436.9	432.2	428.0	423.5	420.3	417.0	416.3	415.9	413.8	414.0
7.5°	429.3	423.5	417.6	412.2	406.6	401.5	398.1	396.7	395.4	394.0	392.3
10°	416.5	409.8	402.8	396.7	391.3	384.4	381.0	379.9	376.3	375.6	373.1
12.5°	403.0	396.1	389.1	381.2	375.9	369.3	364.2	361.9	358.5	355.9	352.2
15°	392.3	383.7	374.3	366.6	359.7	352.3	345.5	341.0	336.5	329.4	326.0
17.5°	379.2	369.3	361.2	352.9	343.0	332.1	324.0	317.4	312.5	306.7	303.3
20°	364.9	355.8	345.7	333.9	323.5	311.2	303.9	298.3	294.5	291.1	289.3
22.5°	352.3	341.7	327.8	316.6	302.0	292.3	286.4	282.8	279.2	275.6	273.8
25°	338.6	326.2	309.3	295.6	284.6	277.0	271.2	267.8	264.0	261.9	259.2
27.5°	325.1	309.1	292.1	279.7	271.1	262.2	257.4	254.7	251.8	248.7	246.5
30°	308.7	290.5	276.5	265.1	256.5	249.1	245.5	241.5	239.0	237.2	235.9
32.5°	291.6	274.1	261.3	251.6	243.1	237.5	233.0	230.5	228.3	226.4	224.9
35°	275.6	258.6	247.8	238.4	231.4	225.1	221.7	219.3	217.5	215.9	215.2
37.5°	259.7	245.3	233.6	226.2	218.8	213.7	210.5	208.3	207.3	205.6	205.8
40°	244.0	231.0	221.7	213.2	206.4	202.0	199.5	198.6	197.0	196.4	197.0
42.5°	230.0	218.1	209.1	201.1	195.2	191.0	189.1	187.8	187.2	187.1	187.2
45°	216.3	205.1	196.4	190.0	183.8	180.0	178.4	177.5	177.0	177.9	178.1
47.5°	202.6	192.5	184.7	177.2	172.1	169.4	167.8	167.1	167.6	168.0	169.2
50°	189.1	179.7	171.6	164.9	160.9	158.4	157.9	156.6	157.5	158.1	159.0
52.5°	175.4	166.9	159.7	153.4	149.2	147.6	146.3	145.8	147.1	147.1	148.0
55°	161.5	154.1	147.4	141.7	138.4	136.4	135.5	134.8	135.5	135.7	135.5
57.5°	148.5	141.5	134.4	129.6	126.9	124.7	123.8	123.5	123.3	124.0	123.8
60°	134.8	128.1	122.6	117.5	114.8	113.5	111.6	111.9	111.9	111.9	110.1
62.5°	121.1	114.4	109.6	106.1	102.9	100.7	100.4	99.8	98.8	98.6	96.2
65°	107.1	102.0	97.9	94.4	91.2	89.4	88.8	87.2	86.0	83.6	82.0
67.5°	94.1	90.5	85.6	82.7	80.0	77.9	75.9	74.6	72.1	69.7	68.3
70°	81.1	77.3	74.1	71.0	68.3	66.3	64.0	61.6	60.0	58.6	57.5
72.5°	68.1	64.9	62.2	59.3	56.4	54.4	52.6	50.8	50.1	49.4	48.8
75°	56.0	53.0	50.5	48.1	46.5	44.2	43.3	42.5	41.8	40.9	39.8
77.5°	44.3	42.0	40.0	38.0	36.6	35.3	34.6	32.4	30.6	30.3	29.9
80°	33.0	31.2	29.9	28.5	26.9	25.1	24.5	23.8	23.4	23.4	23.6
82.5°	23.1	22.0	20.5	19.3	18.7	18.0	18.0	17.8	17.7	17.8	17.8
85°	14.1	12.6	12.3	12.1	12.3	12.3	12.3	12.3	12.1	12.3	11.9
87.5°	6.1	6.7	6.8	6.3	6.5	6.1	6.3	6.3	6.3	6.5	6.3
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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CATALOG NUMBER: S124RDR-H350D935-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	462.8	462.8	462.8	462.8
2.5°	438.3	438.3	436.5	435.1
5°	413.6	411.3	410.9	408.7
7.5°	390.5	390.2	389.3	389.3
10°	372.2	370.9	369.6	369.5
12.5°	346.2	348.0	345.8	345.3
15°	323.5	322.1	320.3	316.5
17.5°	302.4	299.7	299.0	297.4
20°	285.8	283.8	283.1	282.2
22.5°	270.2	269.8	267.6	267.1
25°	258.6	256.8	255.4	254.5
27.5°	246.0	244.7	244.0	242.6
30°	234.5	234.1	233.2	233.2
32.5°	224.0	222.9	222.9	222.8
35°	214.5	214.8	213.7	213.4
37.5°	205.5	204.9	205.1	204.7
40°	196.6	196.3	196.3	196.4
42.5°	187.6	187.8	188.2	188.2
45°	178.6	178.8	179.1	179.1
47.5°	170.1	169.8	170.1	169.8
50°	159.3	160.4	160.2	160.0
52.5°	148.3	148.0	148.7	148.5
55°	136.4	135.9	136.6	135.9
57.5°	123.1	123.3	123.3	122.9
60°	109.8	109.2	108.5	108.5
62.5°	94.3	92.6	91.6	92.3
65°	79.3	78.0	77.7	77.1
67.5°	67.4	66.0	65.4	65.2
70°	57.1	56.4	56.2	56.2
72.5°	48.5	48.5	47.9	47.6
75°	39.5	38.7	37.8	37.8
77.5°	29.6	29.4	29.2	29.2
80°	23.1	23.1	23.2	23.4
82.5°	17.3	17.5	17.7	17.7
85°	11.7	11.7	11.9	11.9
87.5°	6.3	6.3	6.3	6.1
90°	0.0	0.0	0.0	0.0

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