

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: P242746

Luminaire Tested: **S124RDR-S350D840-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P242746
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-31)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124RDR-S350D840-X4F0-XX-UDD-A-W
Description: DEFINE 4 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 4000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1383.2 lumens
Efficiency: N/A
Efficacy: 119.2 lumens/watt
Spacing Criteria (0/90/45): 1.27 / 1.22 / 1.39
Luminous Opening: Rectangular (W 3.88' x L: 0.31' x H: 0')
CIE Type: Direct

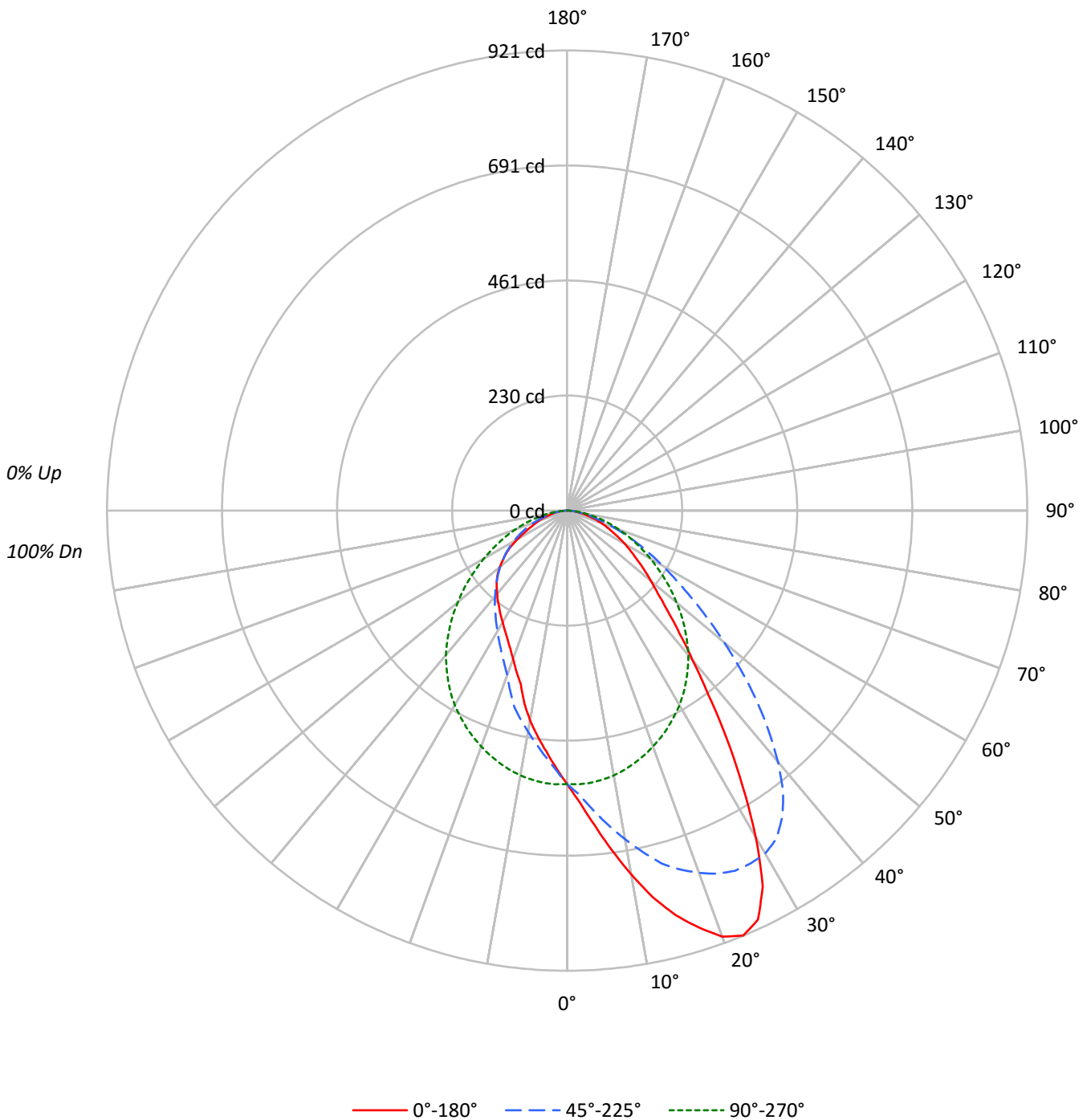
Input Watts (W): 11.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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	110	106	102	98	107	103	100	97	99	96	94	95	93	91	92	90	88					86				
2	101	93	87	82	98	92	86	81	88	83	79	85	81	77	82	79	76					74				
3	93	83	76	70	90	81	75	69	79	73	68	76	71	67	73	69	65					63				
4	85	74	66	60	83	73	65	59	71	64	59	68	63	58	66	61	57					55				
5	79	67	58	52	77	66	58	52	64	57	51	62	56	51	60	55	50					48				
6	73	61	52	46	71	60	52	46	58	51	46	56	50	45	55	49	45					43				
7	68	55	47	41	66	54	47	41	53	46	41	52	45	40	50	44	40					38				
8	64	51	42	37	62	50	42	37	49	42	37	47	41	36	46	40	36					34				
9	59	47	39	33	58	46	38	33	45	38	33	44	38	33	43	37	33					31				
10	56	43	35	30	55	43	35	30	42	35	30	41	34	30	40	34	30					28				

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	4864	4864	4864
5°	5642	4879	4312
10°	6674	4858	3849
15°	7710	4812	3307
20°	8583	4751	2990
25°	8861	4690	2777
30°	7758	4617	2647
35°	6039	4508	2570
40°	4528	4383	2527
45°	3575	4182	2505
50°	3019	3951	2432
55°	2631	3696	2303
60°	2368	3433	2037
65°	2086	3149	1752
70°	1879	2854	1580
75°	1576	2528	1346
80°	1331	2155	1264
85°	1122	1683	1122



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	53.0	3.8
10°-20°	160.0	11.6
20°-30°	250.6	18.1
30°-40°	278.3	20.1
40°-50°	246.6	17.8
50°-60°	192.2	13.9
60°-70°	125.7	9.1
70°-80°	61.7	4.5
80°-90°	15.0	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°	463.6	33.5
0°-40°	742.0	53.6
0°-60°	1180.8	85.4
0°-90°	1383.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1383.2	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	547	547	547	547	547	
5°	632	602	547	495	483	64
15°	838	732	523	407	359	238
25°	904	795	478	312	283	403
35°	556	750	415	250	237	348
45°	284	535	333	199	199	224
55°	170	302	238	150	149	154
65°	99	155	150	97	83	100
75°	46	59	74	47	39	50
85°	11	12	16	12	11	13
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°	547.2	547.2	547.2	547.2	547.2	547.2	547.2	547.2	547.2	547.2	547.2
2.5°	584.7	586.7	584.7	584.5	582.3	581.6	580.7	577.8	572.6	569.5	570.1
5°	632.3	637.8	634.7	634.3	629.4	624.6	621.5	614.4	606.9	601.9	597.7
7.5°	685.2	688.5	686.3	683.9	675.5	672.9	665.6	657.2	644.6	635.2	626.6
10°	739.4	742.1	741.2	735.5	729.7	718.1	711.4	698.4	681.5	668.0	655.4
12.5°	792.8	795.7	786.2	787.9	775.8	767.2	755.8	738.6	718.3	700.0	683.4
15°	837.8	834.2	834.2	829.8	817.7	804.9	794.1	776.9	752.2	731.5	709.7
17.5°	874.8	876.4	874.6	863.3	854.5	841.5	822.1	802.5	781.1	753.3	731.7
20°	907.4	907.4	905.5	898.4	886.1	871.9	850.6	828.7	799.6	771.6	746.5
22.5°	920.7	921.5	919.1	913.6	902.8	889.1	871.7	849.5	819.3	786.8	754.2
25°	903.5	907.7	908.1	906.6	903.2	894.9	879.2	856.5	829.6	795.4	761.9
27.5°	847.9	853.4	855.6	860.5	869.5	872.8	870.8	855.6	829.6	795.9	762.6
30°	755.8	760.2	774.5	793.2	807.8	821.0	832.5	835.6	822.3	792.8	757.3
32.5°	653.5	659.9	674.2	694.7	721.4	746.1	775.4	791.0	793.9	779.1	746.9
35°	556.5	560.9	574.1	595.3	624.4	657.7	698.4	730.2	751.8	750.2	730.2
37.5°	463.4	469.6	483.0	500.5	529.1	571.7	610.3	652.8	691.6	710.6	700.4
40°	390.2	390.4	403.5	421.5	448.0	483.9	526.9	575.4	620.0	656.3	663.4
42.5°	332.5	332.5	340.0	359.8	377.0	410.3	450.9	498.9	552.9	596.4	618.0
45°	284.4	286.4	293.4	305.1	320.1	348.8	381.6	426.4	484.8	534.6	565.7
47.5°	246.5	250.0	254.2	264.8	277.1	297.2	325.2	367.1	415.6	470.9	513.9
50°	218.3	218.7	224.4	229.7	240.1	255.3	279.1	312.6	356.3	409.0	458.1
52.5°	194.0	193.8	196.7	203.7	211.6	222.7	240.7	270.5	308.0	353.8	405.0
55°	169.8	170.9	173.5	178.8	185.2	193.6	208.8	231.7	262.1	302.5	348.6
57.5°	151.2	151.9	154.3	156.3	162.5	168.7	181.0	197.5	224.2	257.9	303.1
60°	133.2	133.4	134.0	137.4	142.0	147.7	155.4	168.9	190.5	220.7	254.6
62.5°	115.5	116.0	117.1	119.3	122.6	126.1	134.3	144.4	161.4	186.1	215.8
65°	99.2	99.4	101.0	101.9	104.7	108.2	114.2	121.5	133.8	155.4	178.6
67.5°	85.5	85.5	85.5	86.9	89.1	91.5	95.5	101.6	111.6	125.4	147.1
70°	72.3	72.3	72.8	73.4	74.5	76.5	78.5	82.9	89.7	100.5	116.2
72.5°	60.0	60.2	60.6	60.6	61.1	62.6	63.9	66.4	71.0	78.5	90.4
75°	45.9	46.5	47.6	48.5	49.6	49.4	50.9	52.7	54.2	59.1	66.4
77.5°	36.2	35.7	35.7	36.6	36.8	37.0	38.1	39.7	41.0	43.7	46.3
80°	26.0	26.0	26.7	26.9	26.7	26.9	28.0	28.7	29.1	30.0	32.4
82.5°	18.1	18.5	18.1	18.3	18.5	18.7	19.6	19.6	20.1	20.3	20.9
85°	11.0	11.2	11.5	11.0	11.0	11.0	11.5	11.7	12.1	11.9	12.3
87.5°	4.9	4.6	4.9	4.9	5.1	4.9	5.1	5.5	5.1	5.3	5.3
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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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	547.2	547.2	547.2	547.2	547.2	547.2	547.2	547.2	547.2	547.2	547.2
2.5°	567.9	564.8	563.3	559.8	555.6	553.4	551.4	548.5	544.8	540.8	537.9
5°	592.4	587.1	580.5	572.6	565.5	558.7	552.7	546.8	539.9	532.9	525.8
7.5°	616.6	607.2	597.0	584.9	573.2	562.4	552.7	543.2	532.4	522.7	513.7
10°	642.2	628.1	612.5	595.9	579.4	565.1	550.9	538.2	524.0	511.5	500.9
12.5°	662.9	645.7	626.1	604.5	583.8	565.7	549.0	531.3	514.8	500.9	485.9
15°	686.3	663.6	638.2	613.6	587.8	564.2	542.3	522.9	504.6	485.5	472.0
17.5°	702.4	676.2	646.2	617.5	588.0	560.6	536.0	513.5	492.5	473.3	457.5
20°	716.5	686.8	652.6	618.8	584.7	554.9	527.8	502.2	480.4	459.2	442.7
22.5°	724.5	690.7	652.6	616.9	581.1	548.3	517.9	491.0	466.7	445.6	426.8
25°	724.9	689.6	651.5	610.9	572.1	537.9	507.1	478.2	451.7	430.6	411.2
27.5°	723.1	682.3	644.0	602.8	562.9	526.5	494.5	463.9	437.6	415.1	395.3
30°	717.8	673.3	631.4	588.2	547.6	513.0	478.9	449.8	422.2	398.6	378.5
32.5°	706.4	662.3	616.4	571.9	530.7	494.7	462.8	433.4	406.5	382.3	360.7
35°	690.5	645.7	596.8	551.4	511.0	474.0	443.6	415.4	389.6	363.8	341.3
37.5°	672.2	625.5	577.2	527.4	487.2	452.0	423.5	396.4	371.3	347.7	322.8
40°	644.0	602.3	552.0	502.7	461.2	427.5	401.7	377.7	352.3	328.9	304.0
42.5°	609.8	575.9	524.9	475.3	434.5	402.4	378.8	355.4	332.9	310.4	284.2
45°	571.0	544.1	496.5	448.9	407.6	375.5	353.4	332.7	312.4	290.8	266.3
47.5°	527.8	508.0	466.5	416.7	378.1	348.6	327.4	310.2	292.3	270.5	248.5
50°	482.4	470.7	431.0	386.5	350.1	323.4	301.6	285.7	271.4	250.7	231.5
52.5°	433.9	429.0	397.1	355.0	320.1	294.1	276.2	262.4	247.8	231.5	213.9
55°	384.5	387.8	359.4	322.5	289.5	267.4	250.4	238.5	226.2	211.6	197.8
57.5°	333.1	345.7	324.5	291.2	259.3	238.5	225.5	215.0	204.6	192.2	179.7
60°	287.9	298.1	287.3	258.8	231.7	212.7	200.8	193.1	182.8	171.7	162.7
62.5°	243.8	254.9	249.6	228.0	203.3	187.6	177.5	170.4	163.4	154.1	144.6
65°	208.3	215.4	212.3	196.4	178.6	164.7	155.0	149.7	142.6	135.6	127.2
67.5°	166.7	180.6	178.4	169.5	152.3	141.3	134.5	129.6	123.0	117.7	111.8
70°	131.2	143.7	143.5	136.7	128.3	118.2	113.8	109.8	104.1	99.0	94.4
72.5°	101.4	112.7	114.9	110.0	104.9	97.9	93.7	91.3	85.8	82.7	79.1
75°	75.2	83.6	85.8	85.8	83.1	79.1	75.4	73.6	69.7	66.6	64.4
77.5°	52.9	58.6	62.0	62.6	62.8	61.3	57.8	56.4	53.4	52.3	49.8
80°	34.8	38.4	42.3	43.7	44.8	44.3	43.0	42.1	39.2	38.1	37.3
82.5°	21.4	22.9	26.0	29.3	28.7	30.2	29.1	28.4	26.5	26.2	25.4
85°	12.6	12.8	13.2	15.2	16.3	16.8	17.0	16.5	15.9	15.9	14.3
87.5°	5.3	5.1	5.5	5.5	5.7	6.6	7.3	7.5	6.8	6.2	5.5
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°	547.2	547.2	547.2	547.2	547.2	547.2	547.2	547.2	547.2	547.2	547.2
2.5°	534.9	532.6	529.8	526.5	522.5	519.0	517.4	518.8	519.4	517.7	517.4
5°	521.0	515.4	511.0	504.4	499.1	494.7	491.6	490.3	490.8	487.2	486.3
7.5°	505.5	499.6	492.3	484.8	477.8	471.6	468.3	466.7	463.0	461.4	459.0
10°	490.8	481.9	474.9	465.6	457.2	449.5	445.8	442.7	438.9	437.2	433.4
12.5°	475.5	465.0	457.0	447.3	438.7	429.0	425.5	419.1	412.7	408.5	403.5
15°	461.4	449.1	439.6	428.1	418.0	407.4	397.9	387.4	383.4	375.0	370.2
17.5°	444.7	431.9	421.3	406.5	391.3	378.5	368.0	356.9	351.0	345.2	342.8
20°	428.1	416.7	400.4	382.5	365.1	350.5	342.4	335.8	329.2	325.4	322.8
22.5°	412.5	397.1	377.4	357.8	340.4	329.8	323.2	316.4	311.3	307.8	304.0
25°	394.6	375.5	355.4	333.3	321.4	311.5	304.0	298.5	295.2	290.6	288.8
27.5°	377.2	354.1	331.4	316.4	304.0	294.5	287.7	283.7	279.3	276.2	273.8
30°	356.5	332.9	313.1	299.0	286.4	278.9	273.6	268.7	265.4	263.0	261.3
32.5°	336.0	312.4	296.5	281.1	271.8	264.6	258.8	255.5	253.1	249.8	248.9
35°	316.4	295.4	280.9	267.2	257.1	250.4	246.0	242.3	240.1	239.2	238.5
37.5°	297.2	279.8	263.7	252.7	243.2	238.1	232.4	230.6	229.1	227.1	228.0
40°	279.1	263.0	249.1	237.2	229.9	224.2	221.1	218.9	217.6	217.6	217.6
42.5°	263.5	247.8	234.4	224.0	216.7	212.1	208.6	206.8	206.6	206.4	207.7
45°	247.1	232.6	218.9	210.1	203.9	199.1	197.1	195.6	195.6	196.4	196.7
47.5°	230.8	217.2	206.1	196.0	190.3	187.2	185.4	184.5	184.5	185.6	186.5
50°	216.1	202.6	191.8	183.0	177.7	174.8	173.3	172.8	173.3	173.3	174.8
52.5°	200.0	188.3	177.7	170.6	164.5	161.8	161.2	160.5	160.7	161.6	162.0
55°	184.3	173.5	163.4	156.3	151.9	150.1	148.2	148.4	147.9	148.4	148.4
57.5°	168.4	159.0	149.0	143.3	139.6	136.9	134.7	135.4	134.7	134.7	134.5
60°	153.2	142.6	135.1	130.1	125.7	123.5	121.5	121.9	121.3	120.8	119.9
62.5°	136.7	128.3	121.3	116.4	113.1	110.5	108.5	107.8	106.0	104.3	102.1
65°	120.8	113.5	107.1	102.5	99.2	97.2	95.7	94.4	91.1	87.5	85.8
67.5°	105.2	99.9	93.7	89.7	87.1	84.4	81.6	79.1	75.8	73.6	72.5
70°	90.2	85.1	80.0	76.3	73.4	71.0	67.7	66.1	63.9	63.1	62.0
72.5°	75.8	71.2	66.6	63.3	60.2	58.4	56.0	54.5	53.8	53.6	52.5
75°	61.3	57.5	54.0	50.9	48.5	47.2	46.1	45.0	44.5	42.5	41.4
77.5°	47.2	44.5	42.3	39.9	38.4	37.5	35.1	33.5	32.6	31.5	31.3
80°	34.8	33.1	30.9	29.5	27.1	26.2	25.4	25.1	24.9	24.7	24.5
82.5°	24.0	22.3	20.1	19.4	19.2	18.7	18.3	18.1	17.9	18.1	18.1
85°	13.2	12.3	12.3	12.1	11.9	11.7	11.5	11.5	11.2	11.5	11.2
87.5°	5.5	5.3	5.3	4.9	5.1	5.1	4.9	4.9	5.1	4.6	4.6
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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CATALOG NUMBER: S124RDR-S350D840-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	547.2	547.2	547.2	547.2
2.5°	516.1	516.6	515.0	514.6
5°	484.6	484.1	483.0	483.3
7.5°	457.2	455.7	456.8	455.0
10°	432.6	430.1	428.1	426.4
12.5°	398.8	396.8	394.0	395.1
15°	367.3	364.0	358.7	359.4
17.5°	339.1	339.5	336.4	337.3
20°	318.1	316.6	316.8	316.1
22.5°	303.6	301.6	299.6	298.1
25°	286.8	285.5	283.5	283.1
27.5°	272.1	271.8	271.0	269.9
30°	259.5	259.0	258.6	257.9
32.5°	248.2	248.0	247.6	247.8
35°	237.7	237.4	237.0	236.8
37.5°	227.7	228.4	228.0	228.0
40°	217.4	217.6	218.0	217.8
42.5°	208.8	208.8	209.4	208.6
45°	198.2	199.5	199.3	199.3
47.5°	187.0	188.5	188.7	188.7
50°	175.9	175.5	176.2	175.9
52.5°	162.5	162.7	162.5	162.3
55°	148.6	148.8	148.4	148.6
57.5°	133.8	132.9	133.6	133.2
60°	117.7	116.0	115.5	114.6
62.5°	99.7	98.5	96.8	97.9
65°	84.0	83.1	82.5	83.3
67.5°	71.4	71.0	71.0	70.5
70°	62.0	61.3	61.3	60.8
72.5°	52.3	51.6	51.8	51.6
75°	40.1	39.0	39.0	39.2
77.5°	31.3	31.1	31.5	30.9
80°	24.5	24.3	24.0	24.7
82.5°	17.6	17.6	17.6	18.5
85°	11.5	11.0	11.5	11.0
87.5°	5.1	4.9	4.6	4.9
90°	0.0	0.0	0.0	0.0

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