

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: P242741

Luminaire Tested: **S124RDR-S350D835-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P242741
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-S350D835-X4F0-XX-UDD-A-W
Description: DEFINE 4 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 3500K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1369.7 lumens
Efficiency: N/A
Efficacy: 118.1 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

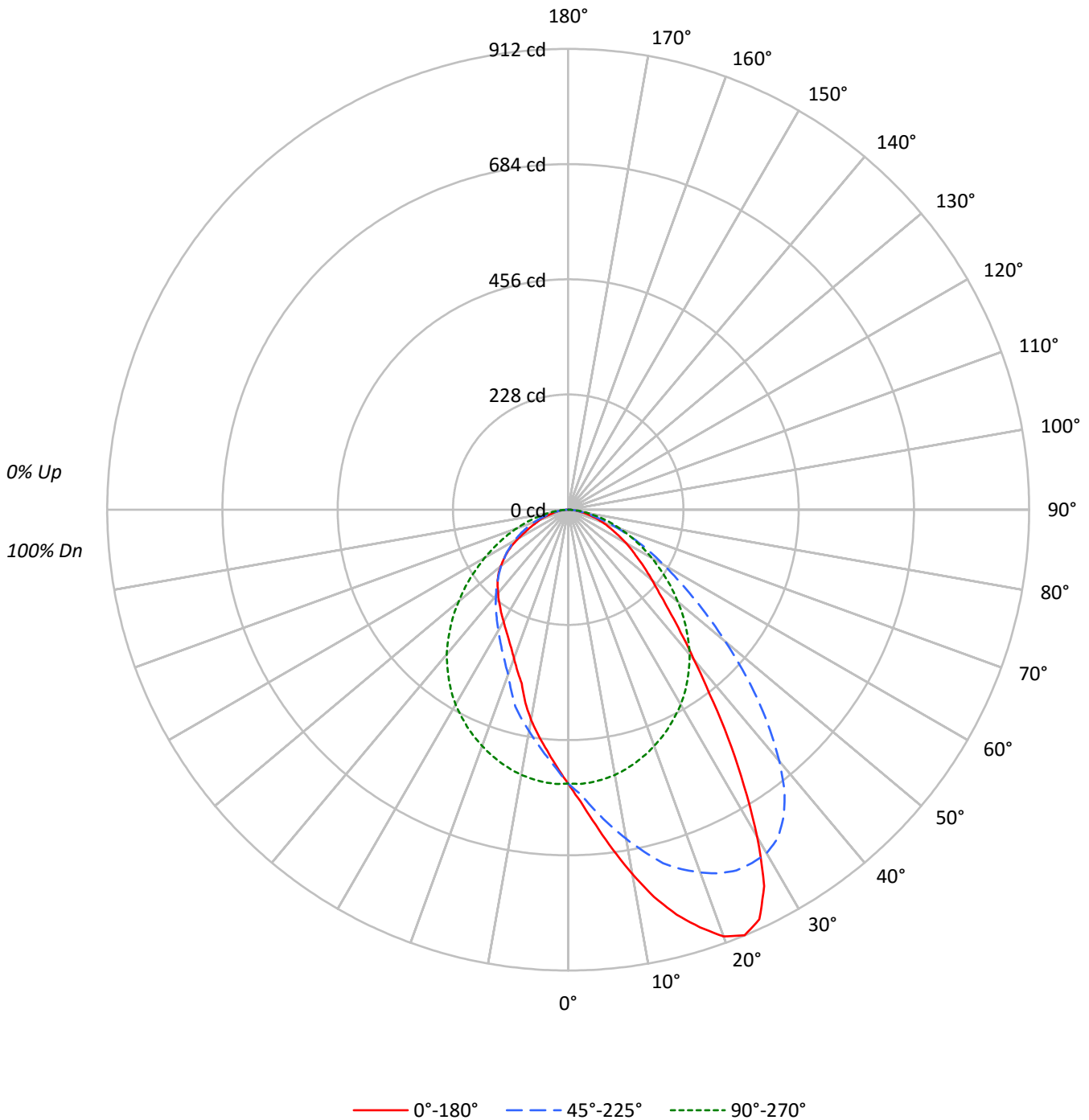
Input Watts (W): 11.6
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°	4817	4817	4817
5°	5587	4831	4270
10°	6609	4810	3811
15°	7634	4765	3274
20°	8500	4704	2962
25°	8774	4644	2749
30°	7682	4572	2621
35°	5979	4463	2545
40°	4484	4340	2503
45°	3540	4141	2481
50°	2988	3912	2409
55°	2605	3660	2280
60°	2345	3399	2018
65°	2065	3117	1735
70°	1861	2825	1567
75°	1559	2504	1336
80°	1321	2135	1254
85°	1112	1673	1112



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	52.5	3.8
10°-20°	158.4	11.6
20°-30°	248.2	18.1
30°-40°	275.6	20.1
40°-50°	244.2	17.8
50°-60°	190.3	13.9
60°-70°	124.5	9.1
70°-80°	61.1	4.5
80°-90°	14.9	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°	459.1	33.5
0°-40°	734.7	53.6
0°-60°	1169.3	85.4
0°-90°	1369.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1369.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	542	542	542	542	542	
5°	626	596	541	490	478	63
15°	830	724	518	403	356	236
25°	895	788	474	308	280	399
35°	551	743	411	248	234	345
45°	282	529	329	197	197	222
55°	168	300	236	149	147	153
65°	98	154	148	96	82	99
75°	45	58	73	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°	541.9	541.9	541.9	541.9	541.9	541.9	541.9	541.9	541.9	541.9	541.9
2.5°	579.0	580.9	579.0	578.7	576.6	575.9	575.0	572.2	567.0	563.9	564.6
5°	626.1	631.6	628.5	628.1	623.3	618.5	615.4	608.4	601.0	596.0	591.8
7.5°	678.5	681.8	679.6	677.2	668.9	666.3	659.1	650.8	638.3	629.0	620.4
10°	732.2	734.8	734.0	728.3	722.6	711.0	704.5	691.6	674.8	661.5	649.0
12.5°	785.1	787.9	778.5	780.2	768.2	759.7	748.4	731.3	711.3	693.1	676.8
15°	829.6	826.1	826.1	821.7	809.7	797.1	786.4	769.3	744.9	724.4	702.7
17.5°	866.3	867.8	866.0	854.9	846.2	833.3	814.1	794.7	773.5	746.0	724.6
20°	898.6	898.6	896.6	889.6	877.4	863.4	842.2	820.6	791.8	764.1	739.2
22.5°	911.7	912.5	910.1	904.7	894.0	880.5	863.2	841.2	811.2	779.2	746.8
25°	894.6	898.8	899.2	897.7	894.4	886.1	870.6	848.1	821.5	787.7	754.5
27.5°	839.6	845.1	847.3	852.1	861.0	864.3	862.3	847.3	821.5	788.1	755.1
30°	748.4	752.7	766.9	785.5	799.9	813.0	824.3	827.4	814.3	785.1	749.9
32.5°	647.1	653.4	667.6	687.9	714.3	738.8	767.8	783.3	786.1	771.5	739.6
35°	551.0	555.4	568.5	589.4	618.3	651.2	691.6	723.1	744.4	742.9	723.1
37.5°	458.9	465.0	478.3	495.6	523.9	566.1	604.3	646.4	684.8	703.6	693.6
40°	386.4	386.6	399.5	417.4	443.6	479.2	521.8	569.8	613.9	649.9	656.9
42.5°	329.2	329.2	336.6	356.3	373.3	406.3	446.4	494.0	547.5	590.5	611.9
45°	281.6	283.6	290.6	302.1	317.0	345.4	377.9	422.2	480.1	529.4	560.2
47.5°	244.1	247.6	251.7	262.2	274.4	294.3	322.0	363.5	411.5	466.3	508.9
50°	216.1	216.6	222.2	227.5	237.7	252.8	276.4	309.6	352.8	405.0	453.7
52.5°	192.1	191.9	194.7	201.7	209.6	220.5	238.4	267.9	305.0	350.4	401.0
55°	168.1	169.2	171.8	177.1	183.4	191.7	206.7	229.4	259.6	299.5	345.2
57.5°	149.8	150.4	152.8	154.8	160.9	167.0	179.2	195.6	222.0	255.4	300.2
60°	131.9	132.1	132.7	136.0	140.6	146.3	153.9	167.2	188.6	218.5	252.2
62.5°	114.4	114.8	115.9	118.1	121.4	124.9	133.0	143.0	159.8	184.3	213.7
65°	98.2	98.5	100.0	100.9	103.7	107.2	113.1	120.3	132.5	153.9	176.8
67.5°	84.7	84.7	84.7	86.0	88.2	90.6	94.5	100.6	110.5	124.2	145.6
70°	71.6	71.6	72.0	72.7	73.8	75.8	77.7	82.1	88.9	99.6	115.1
72.5°	59.4	59.6	60.0	60.0	60.5	62.0	63.3	65.7	70.3	77.7	89.5
75°	45.4	46.1	47.2	48.0	49.1	48.9	50.4	52.2	53.7	58.5	65.7
77.5°	35.8	35.4	35.4	36.2	36.5	36.7	37.8	39.3	40.6	43.2	45.8
80°	25.8	25.8	26.4	26.6	26.4	26.6	27.7	28.4	28.8	29.7	32.1
82.5°	17.9	18.3	17.9	18.1	18.3	18.6	19.4	19.4	19.9	20.1	20.7
85°	10.9	11.1	11.4	10.9	10.9	10.9	11.4	11.6	12.0	11.8	12.2
87.5°	4.8	4.6	4.8	4.8	5.0	4.8	5.0	5.5	5.0	5.2	5.2
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°	541.9	541.9	541.9	541.9	541.9	541.9	541.9	541.9	541.9	541.9	541.9
2.5°	562.4	559.3	557.8	554.3	550.1	548.0	546.0	543.2	539.5	535.5	532.7
5°	586.6	581.4	574.8	567.0	560.0	553.2	547.3	541.4	534.6	527.7	520.7
7.5°	610.6	601.2	591.2	579.2	567.6	556.9	547.3	537.9	527.2	517.6	508.7
10°	635.9	622.0	606.5	590.1	573.7	559.5	545.6	532.9	518.9	506.5	496.0
12.5°	656.5	639.4	620.0	598.6	578.1	560.2	543.6	526.1	509.8	496.0	481.2
15°	679.6	657.1	632.0	607.6	582.0	558.7	537.0	517.8	499.7	480.7	467.4
17.5°	695.5	669.6	639.9	611.5	582.2	555.2	530.7	508.4	487.7	468.7	453.0
20°	709.5	680.0	646.2	612.8	579.0	549.5	522.6	497.3	475.7	454.7	438.4
22.5°	717.4	684.0	646.2	610.8	575.5	542.9	512.8	486.2	462.2	441.2	422.7
25°	717.8	682.9	645.1	604.9	566.5	532.7	502.1	473.5	447.3	426.4	407.2
27.5°	716.1	675.7	637.7	596.9	557.4	521.3	489.7	459.3	433.4	411.1	391.4
30°	710.8	666.7	625.2	582.5	542.3	508.0	474.2	445.4	418.1	394.7	374.8
32.5°	699.5	655.8	610.4	566.3	525.5	489.9	458.2	429.2	402.6	378.6	357.2
35°	683.8	639.4	591.0	546.0	506.0	469.4	439.2	411.3	385.8	360.2	337.9
37.5°	665.6	619.4	571.5	522.2	482.5	447.5	419.4	392.5	367.6	344.3	319.6
40°	637.7	596.4	546.7	497.8	456.7	423.3	397.8	374.0	348.9	325.7	301.1
42.5°	603.9	570.2	519.8	470.7	430.3	398.4	375.1	351.9	329.7	307.4	281.4
45°	565.4	538.8	491.6	444.5	403.7	371.8	350.0	329.4	309.3	288.0	263.7
47.5°	522.6	503.0	461.9	412.6	374.4	345.2	324.2	307.2	289.5	267.9	246.0
50°	477.7	466.1	426.8	382.7	346.7	320.3	298.7	282.9	268.7	248.2	229.2
52.5°	429.6	424.8	393.2	351.5	317.0	291.2	273.5	259.8	245.4	229.2	211.8
55°	380.7	384.0	355.8	319.4	286.6	264.8	248.0	236.2	224.0	209.6	195.8
57.5°	329.9	342.3	321.4	288.4	256.7	236.2	223.3	212.9	202.6	190.4	177.9
60°	285.1	295.2	284.5	256.3	229.4	210.7	198.9	191.2	181.0	170.1	161.1
62.5°	241.5	252.4	247.1	225.7	201.3	185.8	175.7	168.8	161.8	152.6	143.2
65°	206.3	213.3	210.2	194.5	176.8	163.1	153.5	148.2	141.2	134.3	126.0
67.5°	165.0	178.8	176.6	167.9	150.9	139.9	133.2	128.4	121.8	116.6	110.7
70°	129.9	142.3	142.1	135.4	127.1	117.0	112.6	108.7	103.0	98.0	93.4
72.5°	100.4	111.6	113.7	108.9	103.9	96.9	92.8	90.4	84.9	81.9	78.4
75°	74.4	82.7	84.9	84.9	82.3	78.4	74.7	72.9	69.0	65.9	63.7
77.5°	52.4	58.1	61.3	62.0	62.2	60.7	57.2	55.9	52.8	51.7	49.3
80°	34.5	38.0	41.9	43.2	44.3	43.9	42.6	41.7	38.9	37.8	36.9
82.5°	21.2	22.7	25.8	29.0	28.4	29.9	28.8	28.2	26.2	26.0	25.1
85°	12.4	12.7	13.1	15.1	16.2	16.6	16.8	16.4	15.7	15.7	14.2
87.5°	5.2	5.0	5.5	5.5	5.7	6.5	7.2	7.4	6.8	6.1	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°	541.9	541.9	541.9	541.9	541.9	541.9	541.9	541.9	541.9	541.9	541.9
2.5°	529.6	527.4	524.6	521.3	517.4	513.9	512.4	513.7	514.3	512.6	512.4
5°	515.9	510.4	506.0	499.5	494.3	489.9	486.8	485.5	486.0	482.5	481.6
7.5°	500.6	494.7	487.5	480.1	473.1	467.0	463.7	462.2	458.5	456.9	454.5
10°	486.0	477.2	470.2	461.1	452.8	445.1	441.4	438.4	434.7	432.9	429.2
12.5°	470.9	460.4	452.6	443.0	434.4	424.8	421.3	415.0	408.7	404.5	399.5
15°	456.9	444.7	435.3	424.0	413.9	403.4	394.1	383.6	379.6	371.3	366.5
17.5°	440.3	427.7	417.2	402.6	387.5	374.8	364.4	353.4	347.6	341.9	339.5
20°	424.0	412.6	396.5	378.8	361.5	347.1	339.0	332.5	325.9	322.2	319.6
22.5°	408.5	393.2	373.8	354.3	337.1	326.6	320.0	313.3	308.3	304.8	301.1
25°	390.8	371.8	351.9	330.1	318.3	308.5	301.1	295.6	292.3	287.7	286.0
27.5°	373.5	350.6	328.1	313.3	301.1	291.7	284.9	281.0	276.6	273.5	271.1
30°	353.0	329.7	310.0	296.0	283.6	276.2	270.9	266.1	262.8	260.4	258.7
32.5°	332.7	309.3	293.6	278.3	269.2	262.0	256.3	253.0	250.6	247.3	246.5
35°	313.3	292.5	278.1	264.6	254.6	248.0	243.6	239.9	237.7	236.9	236.2
37.5°	294.3	277.0	261.1	250.2	240.8	235.8	230.1	228.4	226.8	224.9	225.7
40°	276.4	260.4	246.7	234.9	227.7	222.0	219.0	216.8	215.5	215.5	215.5
42.5°	260.9	245.4	232.1	221.8	214.6	210.0	206.5	204.8	204.6	204.3	205.7
45°	244.7	230.3	216.8	208.1	201.9	197.1	195.2	193.6	193.6	194.5	194.7
47.5°	228.6	215.0	204.1	194.1	188.4	185.3	183.6	182.7	182.7	183.8	184.7
50°	213.9	200.6	189.9	181.2	176.0	173.1	171.6	171.2	171.6	171.6	173.1
52.5°	198.0	186.4	176.0	169.0	162.9	160.2	159.6	158.9	159.1	160.0	160.5
55°	182.5	171.8	161.8	154.8	150.4	148.7	146.7	146.9	146.5	146.9	146.9
57.5°	166.8	157.4	147.6	141.9	138.2	135.6	133.4	134.0	133.4	133.4	133.2
60°	151.7	141.2	133.8	128.8	124.4	122.3	120.3	120.7	120.1	119.6	118.8
62.5°	135.4	127.1	120.1	115.3	112.0	109.4	107.4	106.8	105.0	103.3	101.1
65°	119.6	112.4	106.1	101.5	98.2	96.3	94.7	93.4	90.2	86.7	84.9
67.5°	104.1	98.9	92.8	88.9	86.2	83.6	80.8	78.4	75.1	72.9	71.8
70°	89.3	84.3	79.2	75.5	72.7	70.3	67.0	65.5	63.3	62.4	61.3
72.5°	75.1	70.5	65.9	62.7	59.6	57.9	55.5	53.9	53.3	53.0	52.0
75°	60.7	57.0	53.5	50.4	48.0	46.7	45.6	44.5	44.1	42.1	41.0
77.5°	46.7	44.1	41.9	39.5	38.0	37.1	34.7	33.2	32.3	31.2	31.0
80°	34.5	32.7	30.6	29.3	26.9	26.0	25.1	24.9	24.7	24.5	24.2
82.5°	23.8	22.0	19.9	19.2	19.0	18.6	18.1	17.9	17.7	17.9	17.9
85°	13.1	12.2	12.2	12.0	11.8	11.6	11.4	11.4	11.1	11.4	11.1
87.5°	5.5	5.2	5.2	4.8	5.0	5.0	4.8	4.8	5.0	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-S350D835-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	541.9	541.9	541.9	541.9
2.5°	511.1	511.5	510.0	509.5
5°	479.9	479.4	478.3	478.5
7.5°	452.8	451.3	452.3	450.6
10°	428.3	425.9	424.0	422.2
12.5°	394.9	393.0	390.1	391.2
15°	363.7	360.4	355.2	355.8
17.5°	335.8	336.2	333.1	334.0
20°	315.0	313.5	313.7	313.1
22.5°	300.6	298.7	296.7	295.2
25°	284.0	282.7	280.7	280.3
27.5°	269.4	269.2	268.3	267.2
30°	257.0	256.5	256.1	255.4
32.5°	245.8	245.6	245.2	245.4
35°	235.3	235.1	234.7	234.5
37.5°	225.5	226.2	225.7	225.7
40°	215.3	215.5	215.9	215.7
42.5°	206.7	206.7	207.4	206.5
45°	196.3	197.6	197.4	197.4
47.5°	185.1	186.7	186.9	186.9
50°	174.2	173.8	174.4	174.2
52.5°	160.9	161.1	160.9	160.7
55°	147.1	147.4	146.9	147.1
57.5°	132.5	131.6	132.3	131.9
60°	116.6	114.8	114.4	113.5
62.5°	98.7	97.6	95.8	96.9
65°	83.2	82.3	81.6	82.5
67.5°	70.7	70.3	70.3	69.9
70°	61.3	60.7	60.7	60.3
72.5°	51.7	51.1	51.3	51.1
75°	39.7	38.6	38.6	38.9
77.5°	31.0	30.8	31.2	30.6
80°	24.2	24.0	23.8	24.5
82.5°	17.5	17.5	17.5	18.3
85°	11.4	10.9	11.4	10.9
87.5°	5.0	4.8	4.6	4.8
90°	0.0	0.0	0.0	0.0

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