

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: P242560

Luminaire Tested: **S123RDR-S560D927-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P242560
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-30)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S123RDR-S560D927-X4F0-XX-UDD-A-W
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 2700K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1654.3 lumens
Efficiency: N/A
Efficacy: 88.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.22 / 1.35
Luminous Opening: Rectangular (W 3.88' x L: 0.23' x H: 0')
CIE Type: Direct

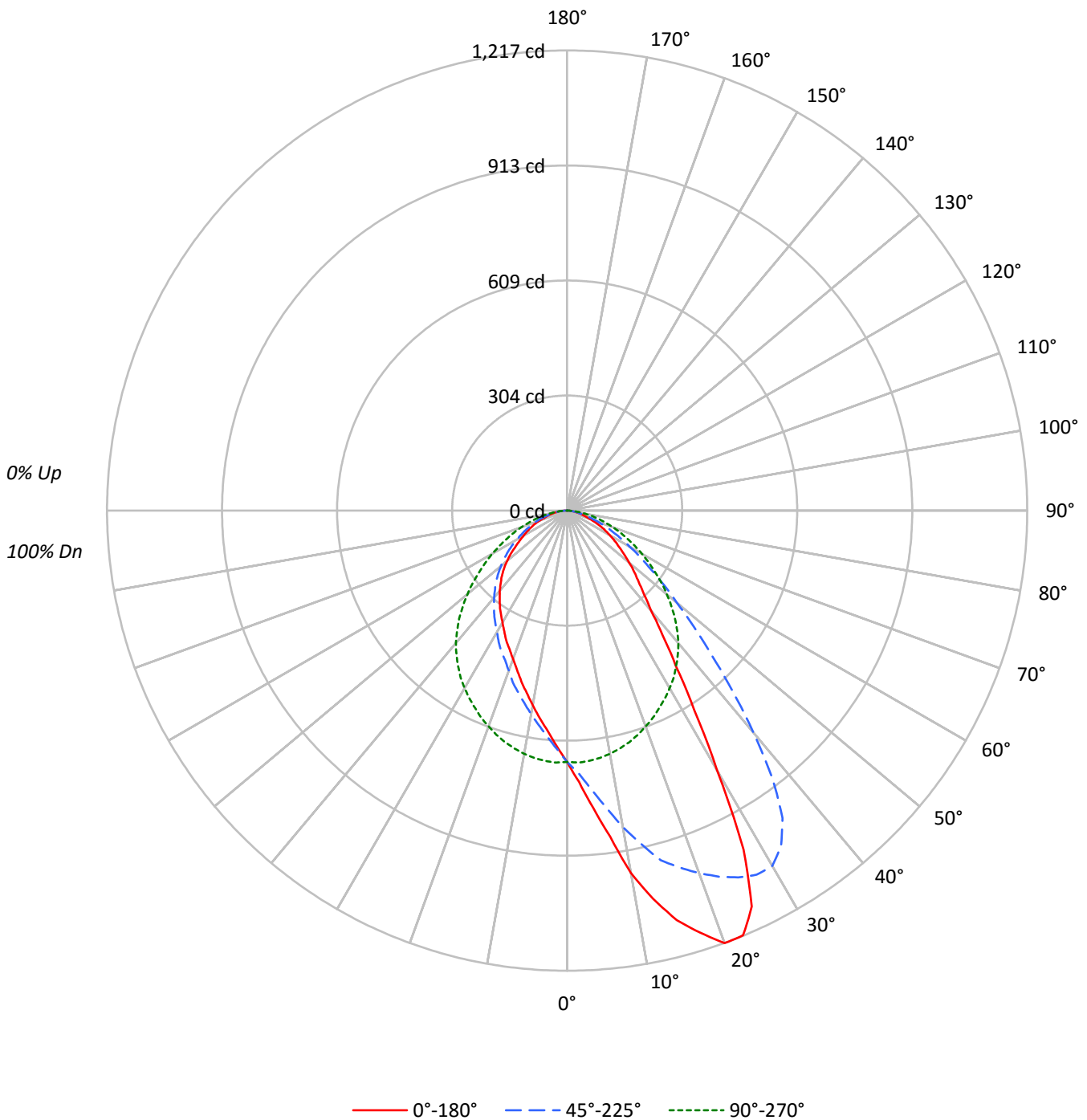
Input Watts (W): 18.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	110	106	102	99	108	104	100	97	100	97	94	96	93	91	92	90	89	87
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	74
3	93	84	76	71	91	82	75	70	79	74	69	77	72	68	74	70	66	64
4	86	75	67	61	84	74	66	61	71	65	60	69	64	59	67	62	58	56
5	80	68	60	53	78	67	59	53	65	58	53	63	57	52	61	56	52	50
6	74	62	53	47	72	61	53	47	59	52	47	57	51	46	56	50	46	44
7	69	56	48	42	67	55	48	42	54	47	42	53	46	42	51	46	41	39
8	64	52	44	38	63	51	43	38	50	43	38	48	42	38	47	42	37	36
9	60	48	40	35	59	47	40	35	46	39	34	45	39	34	44	38	34	32
10	57	44	37	32	55	44	36	32	43	36	31	42	36	31	41	35	31	29

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	8053	8053	8053
5°	9600	8088	7122
10°	11986	8041	6434
15°	14068	7958	5868
20°	15702	7836	5385
25°	15451	7706	5089
30°	11106	7587	4785
35°	7415	7433	4587
40°	5464	7245	4383
45°	4582	6919	4183
50°	4043	6489	3905
55°	3546	5997	3523
60°	3159	5530	3227
65°	2773	5025	3003
70°	2176	4575	2743
75°	1920	3995	2506
80°	1668	3392	2464
85°	1349	2726	2615



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	65.2	3.9
10°-20°	204.2	12.3
20°-30°	321.7	19.4
30°-40°	334.5	20.2
40°-50°	286.2	17.3
50°-60°	218.1	13.2
60°-70°	139.7	8.4
70°-80°	67.0	4.0
80°-90°	17.6	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°	591.2	35.7
0°-40°	925.7	56.0
0°-60°	1430.0	86.4
0°-90°	1654.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1654.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	664	664	664	664	664	
5°	789	740	665	600	585	81
15°	1121	957	634	499	468	318
25°	1155	1070	576	412	380	502
35°	501	993	502	336	310	326
45°	267	539	404	266	244	210
55°	168	269	284	192	167	151
65°	97	132	175	120	105	95
75°	41	48	85	61	54	44
85°	10	10	20	18	19	11
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°	664.4	664.4	664.4	664.4	664.4	664.4	664.4	664.4	664.4	664.4	664.4
2.5°	718.4	719.6	715.9	715.3	711.0	709.9	709.9	703.9	700.2	695.4	692.5
5°	789.0	793.5	791.2	786.1	777.6	775.6	770.2	761.6	752.0	740.0	734.3
7.5°	869.7	879.1	877.4	869.4	860.3	854.7	839.6	827.3	808.9	792.1	779.0
10°	973.8	967.3	962.2	954.5	946.2	932.9	916.9	895.0	869.7	849.8	827.6
12.5°	1051.7	1052.0	1045.2	1037.2	1024.7	1012.2	991.7	963.9	933.4	902.4	876.3
15°	1121.1	1122.8	1118.6	1110.3	1093.8	1071.4	1041.8	1030.7	988.6	957.3	926.0
17.5°	1170.6	1170.9	1170.1	1159.0	1141.1	1125.7	1098.1	1072.2	1032.4	990.0	948.2
20°	1217.3	1214.4	1215.0	1202.2	1189.7	1171.2	1144.5	1102.1	1070.8	1019.9	976.4
22.5°	1216.1	1216.1	1218.7	1216.4	1208.2	1195.1	1175.5	1141.3	1099.2	1047.8	997.4
25°	1155.3	1153.0	1166.4	1170.1	1184.6	1187.1	1180.9	1161.2	1123.4	1070.5	1009.9
27.5°	1010.2	1002.0	1029.8	1057.4	1094.1	1117.4	1141.3	1146.7	1128.8	1085.6	1022.2
30°	793.5	820.2	832.8	877.7	927.7	987.5	1039.8	1089.6	1101.8	1085.3	1035.5
32.5°	625.1	647.6	657.6	694.5	740.3	812.8	897.9	973.5	1032.7	1052.6	1027.6
35°	501.1	501.4	525.3	542.4	585.6	657.6	733.8	828.2	922.1	993.2	1000.6
37.5°	413.5	414.7	430.0	447.1	481.8	522.2	593.0	672.6	785.5	891.6	946.8
40°	345.3	347.8	358.6	375.4	398.7	427.5	479.8	553.7	644.2	765.6	864.9
42.5°	301.5	306.0	310.3	322.2	334.5	360.9	400.7	453.6	533.8	647.0	765.3
45°	267.3	269.6	273.9	279.9	292.9	311.7	340.2	378.5	446.8	539.2	653.9
47.5°	241.2	239.8	244.6	249.7	258.5	272.2	292.1	325.4	376.6	453.9	553.2
50°	214.4	214.2	217.3	221.0	229.2	238.6	254.3	277.9	316.5	378.0	467.0
52.5°	189.4	190.8	192.8	197.7	203.1	210.2	223.8	239.2	271.0	322.0	392.5
55°	167.8	168.7	171.8	174.3	178.6	186.3	195.1	209.3	232.1	269.1	330.2
57.5°	149.0	148.7	151.9	152.2	157.6	164.1	171.2	182.3	199.7	228.9	271.6
60°	130.3	129.4	132.0	134.0	136.5	141.6	147.3	158.1	171.2	191.4	226.7
62.5°	113.2	112.9	114.6	116.6	118.6	123.1	127.7	135.4	145.0	161.3	187.4
65°	96.7	97.6	98.4	99.3	100.4	103.2	107.8	113.5	120.6	132.5	152.7
67.5°	79.6	80.8	81.1	83.0	85.3	86.7	89.3	94.7	100.1	110.9	122.9
70°	61.4	61.1	61.4	62.3	65.4	68.5	72.2	75.9	79.1	86.2	95.8
72.5°	50.6	50.1	50.9	50.9	52.0	52.3	54.3	57.7	62.0	66.3	72.5
75°	41.0	41.0	41.0	41.0	42.1	42.7	43.5	44.4	45.8	48.1	53.2
77.5°	31.9	31.9	32.4	32.7	33.0	33.3	33.8	34.7	35.3	36.4	39.0
80°	23.9	24.2	23.9	24.2	24.2	24.7	25.0	25.9	26.2	27.6	28.4
82.5°	16.5	16.2	16.5	16.8	16.8	17.3	17.3	17.9	17.9	18.5	19.3
85°	9.7	9.1	9.7	9.4	10.0	9.4	9.7	10.2	10.2	10.5	11.7
87.5°	2.8	3.4	2.8	3.1	3.1	3.4	3.4	3.4	4.0	3.7	4.0
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):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	664.4	664.4	664.4	664.4	664.4	664.4	664.4	664.4	664.4	664.4	664.4
2.5°	691.4	690.5	686.6	682.0	676.0	672.1	668.9	667.2	662.1	655.8	651.6
5°	728.4	719.8	710.7	699.6	689.4	678.9	672.3	664.7	655.3	644.8	637.4
7.5°	765.1	750.3	734.1	717.3	700.2	685.1	671.2	659.8	645.6	631.1	621.2
10°	808.6	784.1	758.8	732.9	709.3	687.1	670.1	653.3	635.4	618.0	604.9
12.5°	848.1	814.0	783.8	750.6	718.7	691.1	664.7	644.2	621.7	602.9	587.6
15°	880.2	847.3	812.0	763.6	723.5	690.0	660.1	634.2	608.1	585.3	570.8
17.5°	913.8	863.8	817.4	779.9	727.5	686.8	651.9	621.7	593.3	570.0	551.8
20°	933.1	885.1	833.6	782.1	730.9	684.0	641.6	607.5	577.6	550.3	533.8
22.5°	944.8	888.8	833.9	777.6	722.4	673.2	631.4	593.0	560.0	534.4	513.1
25°	953.3	888.5	828.8	774.2	718.7	665.8	616.0	576.2	541.2	513.6	492.0
27.5°	960.2	885.1	816.5	757.1	701.1	647.3	602.4	559.7	524.7	496.0	472.4
30°	961.9	880.8	802.0	736.3	679.2	630.8	582.5	542.1	504.5	473.5	451.9
32.5°	964.1	870.3	782.4	711.6	652.7	604.9	562.3	524.2	485.5	455.1	432.9
35°	956.2	867.7	762.5	682.3	623.7	577.4	537.8	502.3	464.4	434.9	412.4
37.5°	932.0	853.8	742.6	649.6	589.0	546.4	513.4	480.9	446.0	413.5	392.8
40°	891.3	831.0	718.7	620.3	556.3	512.2	483.2	457.9	424.3	394.5	371.7
42.5°	830.8	800.0	695.9	589.6	519.3	477.2	453.9	430.6	402.2	371.7	350.7
45°	754.0	758.8	663.2	556.6	485.8	443.1	420.1	403.6	377.4	352.4	330.5
47.5°	660.7	701.1	628.3	521.9	449.4	409.3	389.1	374.0	355.8	329.9	309.7
50°	569.7	634.2	584.5	486.9	415.5	375.7	355.8	344.1	328.8	309.4	290.4
52.5°	485.8	556.3	531.6	447.9	378.8	343.3	323.9	314.8	303.5	285.5	268.8
55°	409.8	480.1	473.3	408.7	342.1	309.4	294.6	283.8	275.6	261.9	248.3
57.5°	343.9	411.8	413.2	365.2	310.3	277.0	264.2	255.7	250.0	239.2	225.8
60°	282.1	343.3	355.2	321.1	275.6	247.2	234.6	228.1	223.8	215.6	205.9
62.5°	230.9	280.7	294.6	272.5	242.3	216.2	207.1	200.8	198.2	191.4	183.2
65°	184.6	227.8	240.9	227.2	209.9	188.6	180.6	175.2	172.6	168.7	162.4
67.5°	145.6	179.2	193.4	182.0	175.5	160.4	155.0	151.9	149.6	146.8	141.4
70°	111.5	134.8	149.6	147.0	141.9	134.8	131.1	129.1	126.8	124.6	120.0
72.5°	84.2	98.4	112.1	114.3	110.4	110.4	107.2	106.7	105.5	102.7	100.7
75°	59.4	70.5	80.2	83.9	85.6	87.0	85.6	85.3	85.0	82.8	81.3
77.5°	41.2	48.3	54.9	61.4	63.7	65.7	66.0	67.1	66.3	64.8	64.3
80°	29.9	31.3	35.6	41.0	45.2	46.9	48.1	48.6	48.3	48.1	46.9
82.5°	19.6	20.8	22.2	25.6	29.0	32.1	32.7	32.4	33.3	33.6	32.7
85°	11.7	11.9	12.5	13.1	15.1	18.2	19.1	19.6	20.2	20.2	18.5
87.5°	4.6	4.3	4.8	4.8	5.7	6.0	7.7	9.1	9.4	8.2	8.2
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):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	664.4	664.4	664.4	664.4	664.4	664.4	664.4	664.4	664.4	664.4	664.4
2.5°	650.2	646.5	643.9	638.2	634.5	630.5	626.6	629.1	628.8	628.5	628.5
5°	631.1	624.6	618.6	610.9	606.1	600.1	595.6	595.0	596.1	592.1	589.9
7.5°	613.2	604.7	596.1	588.2	579.3	572.5	568.3	566.5	563.4	560.9	558.6
10°	594.1	583.6	575.4	564.8	555.2	546.6	541.2	537.5	535.5	533.6	529.9
12.5°	574.5	564.3	553.2	540.9	531.8	521.6	517.9	513.6	509.4	507.1	501.7
15°	555.5	542.1	531.0	518.5	508.2	498.6	492.9	484.6	483.5	480.7	475.5
17.5°	537.0	522.2	506.0	497.4	487.2	477.0	467.9	465.3	456.8	453.9	449.1
20°	514.2	500.8	489.2	477.0	460.2	450.8	444.0	440.3	433.7	429.7	426.9
22.5°	494.6	480.9	467.0	452.2	439.1	428.3	423.8	417.5	414.7	408.7	405.6
25°	476.1	461.3	445.1	429.7	419.8	411.8	403.9	398.7	393.6	391.1	385.4
27.5°	453.6	438.8	423.2	411.3	399.9	391.9	384.2	380.0	373.4	369.2	366.0
30°	435.7	417.5	404.4	393.9	378.3	370.9	365.5	359.8	355.2	350.7	347.5
32.5°	415.0	398.7	386.5	372.9	361.8	353.5	346.1	341.3	337.6	333.3	330.2
35°	393.1	379.1	366.3	353.2	344.4	336.2	327.9	323.7	320.0	316.0	313.1
37.5°	373.1	360.1	348.1	335.6	324.8	317.7	310.9	308.0	302.9	300.1	297.2
40°	354.9	342.1	329.1	317.1	305.7	300.6	294.6	289.8	285.3	283.3	280.1
42.5°	335.0	322.2	311.7	298.6	289.8	282.4	277.0	271.6	268.5	265.4	263.9
45°	315.4	304.0	293.2	280.4	271.6	265.6	259.4	254.5	251.4	249.4	246.3
47.5°	296.6	285.0	274.2	262.8	254.3	247.4	240.9	237.8	233.5	231.2	228.9
50°	275.9	265.6	254.0	243.7	235.2	228.4	223.3	219.0	215.3	212.2	210.7
52.5°	256.8	245.7	236.1	226.7	217.6	209.6	205.1	200.5	197.9	194.3	192.5
55°	235.5	225.0	216.4	207.1	198.2	191.7	186.0	182.0	179.2	175.2	172.9
57.5°	215.9	206.8	196.2	188.0	178.6	173.5	168.7	163.0	159.6	156.4	154.1
60°	196.0	185.2	176.3	168.7	160.7	153.6	149.3	145.0	141.4	138.2	136.2
62.5°	175.2	166.1	157.8	149.3	142.2	136.2	131.1	127.7	124.6	122.9	120.9
65°	153.9	146.5	137.9	131.1	124.3	119.7	115.8	112.6	110.4	108.9	107.2
67.5°	134.2	127.1	119.5	112.3	107.8	104.1	101.2	98.4	97.3	95.6	94.4
70°	115.2	107.8	101.2	96.1	91.6	89.0	87.3	85.3	84.2	81.9	80.8
72.5°	94.4	89.6	85.3	81.3	77.9	75.7	73.4	70.8	68.8	66.3	65.1
75°	77.6	72.8	69.1	66.3	64.0	60.9	57.7	55.2	54.3	53.5	53.2
77.5°	60.6	57.5	54.6	52.3	49.2	46.4	45.5	44.9	44.7	44.1	44.1
80°	45.2	42.4	40.4	37.5	35.8	35.8	35.8	35.3	35.6	35.6	35.6
82.5°	30.7	28.2	27.3	26.7	26.7	27.0	27.0	27.3	27.0	27.6	27.3
85°	17.3	17.6	18.2	17.9	18.2	18.2	18.8	18.5	18.8	18.2	18.8
87.5°	8.0	8.8	9.1	9.4	9.7	9.4	9.7	9.7	10.0	10.0	10.0
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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CATALOG NUMBER: S123RDR-S560D927-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	664.4	664.4	664.4	664.4
2.5°	625.1	624.8	625.1	624.0
5°	589.0	588.7	587.9	585.3
7.5°	556.3	555.7	553.5	554.0
10°	527.9	528.1	524.7	522.7
12.5°	500.3	498.6	496.0	493.7
15°	476.7	473.8	467.0	467.6
17.5°	447.4	445.1	444.8	440.8
20°	422.3	420.9	421.5	417.5
22.5°	402.7	401.3	398.2	397.6
25°	383.7	381.4	379.1	380.5
27.5°	364.3	362.6	360.1	360.1
30°	346.1	344.4	343.3	341.9
32.5°	327.6	327.6	325.4	325.4
35°	312.0	310.3	309.7	310.0
37.5°	296.9	294.6	293.5	292.4
40°	280.4	278.2	277.6	277.0
42.5°	261.9	261.4	261.1	260.0
45°	245.4	245.2	243.5	244.0
47.5°	227.8	226.4	225.5	226.4
50°	209.6	209.0	206.5	207.1
52.5°	191.4	188.8	188.3	187.7
55°	170.9	168.4	167.2	166.7
57.5°	150.7	149.9	148.7	149.6
60°	133.4	133.4	133.4	133.1
62.5°	120.0	119.2	118.9	119.5
65°	106.4	106.1	104.9	104.7
67.5°	93.9	92.7	92.7	92.1
70°	79.4	78.8	77.1	77.4
72.5°	63.7	63.1	63.1	62.6
75°	52.9	52.6	52.3	53.5
77.5°	44.1	44.1	44.4	43.8
80°	35.6	35.6	35.3	35.3
82.5°	26.7	27.0	27.3	26.7
85°	18.8	18.5	19.1	18.8
87.5°	10.5	10.0	10.0	10.2
90°	0.0	0.0	0.0	0.0

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