

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: P243317

Luminaire Tested: **S123DR-H560D927-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P243317
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-H560D927-X4F0-XX-UDD-A-W
Description: DEFINE 3 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 2700K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1738.0 lumens
Efficiency: N/A
Efficacy: 101.0 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

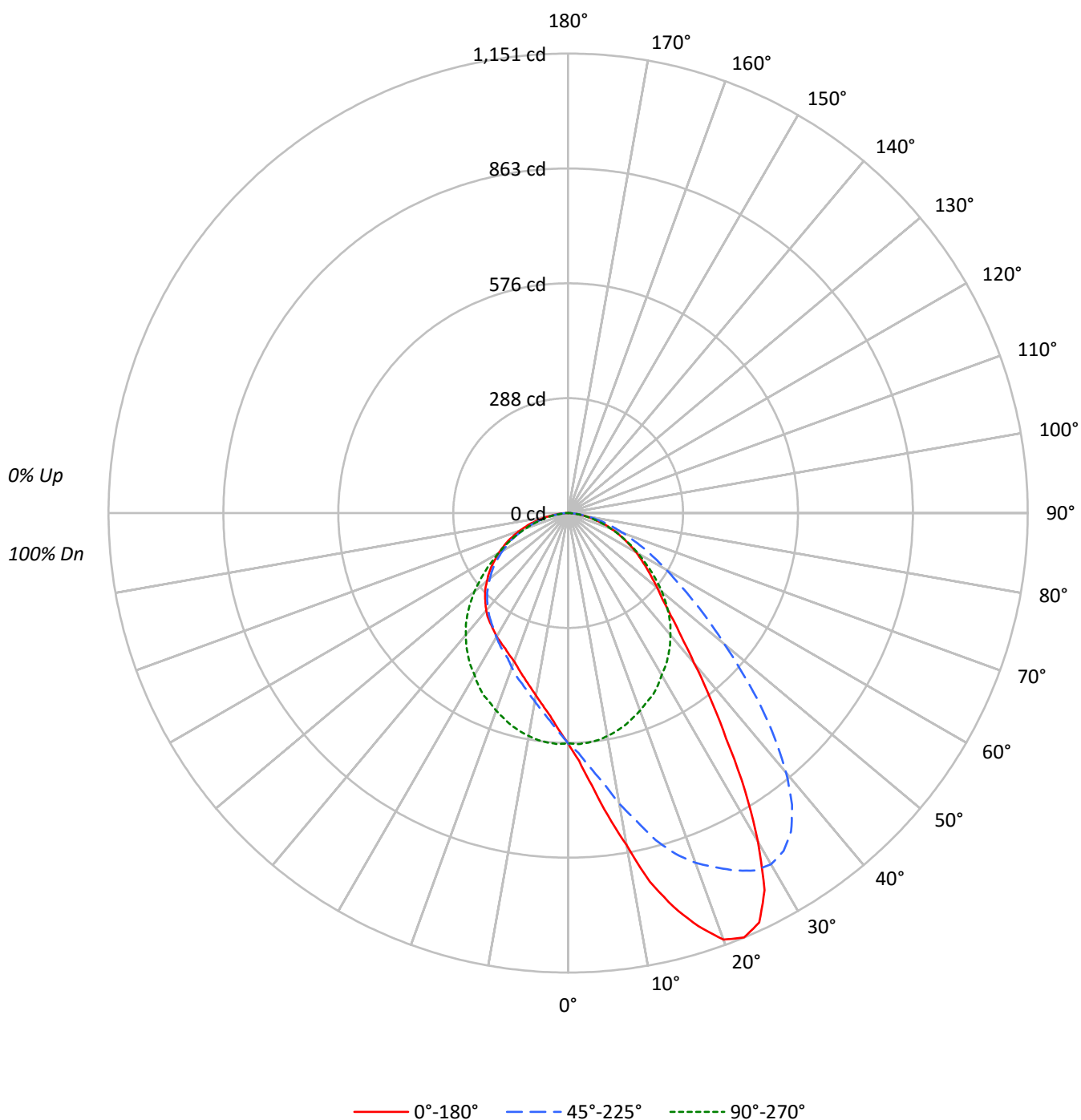
Input Watts (W): 17.2
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot



TEST NUMBER: P243317

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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°	6990	6990	6990
5°	8327	7023	6207
10°	10400	6981	5707
15°	12816	6906	5355
20°	14666	6795	5095
25°	15136	6721	5001
30°	13297	6560	5004
35°	10206	6462	5009
40°	7763	6304	5048
45°	6247	6101	5041
50°	5497	5776	4999
55°	5068	5351	4966
60°	4776	4897	4865
65°	4437	4477	4773
70°	4061	4015	4568
75°	3611	3498	4252
80°	3022	2897	3721
85°	2128	2100	2795

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	56.7	3.3
10°-20°	182.2	10.5
20°-30°	300.9	17.3
30°-40°	344.3	19.8
40°-50°	312.0	18.0
50°-60°	252.1	14.5
60°-70°	175.7	10.1
70°-80°	92.1	5.3
80°-90°	22.0	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°	539.8	31.1
0°-40°	884.1	50.9
0°-60°	1448.2	83.3
0°-90°	1738.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1738.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	577	577	577	577	577	
5°	684	640	577	522	510	70
15°	1021	848	550	443	427	291
25°	1132	988	502	383	374	506
35°	690	974	437	335	338	437
45°	364	680	356	287	294	287
55°	240	382	253	225	235	215
65°	155	209	156	154	166	153
75°	77	95	75	78	91	82
85°	15	20	15	17	20	20
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°	576.7	576.7	576.7	576.7	576.7	576.7	576.7	576.7	576.7	576.7	576.7
2.5°	621.0	622.4	620.2	621.6	618.4	616.6	613.6	612.3	606.0	601.5	599.9
5°	684.4	684.4	684.9	681.8	678.1	671.5	662.8	657.2	650.9	640.1	634.5
7.5°	764.2	760.2	757.6	751.7	746.7	735.9	726.4	715.0	700.3	682.3	672.8
10°	845.0	849.2	846.5	840.5	827.5	809.8	795.8	779.5	756.5	739.1	714.2
12.5°	945.8	940.3	936.0	926.8	912.5	893.8	872.1	847.9	818.3	789.5	761.8
15°	1021.3	1022.1	1021.9	1009.7	995.7	970.4	950.3	909.9	872.4	848.1	802.2
17.5°	1085.2	1088.7	1084.7	1066.5	1054.1	1039.0	1013.4	968.5	934.5	895.1	844.4
20°	1137.0	1137.5	1131.2	1117.7	1103.5	1086.6	1052.8	1018.4	985.2	932.4	884.0
22.5°	1150.7	1152.0	1150.7	1144.9	1133.3	1115.3	1090.0	1058.3	1016.3	960.1	915.2
25°	1131.7	1130.9	1135.4	1132.0	1131.4	1125.6	1109.0	1083.4	1041.9	987.8	930.8
27.5°	1065.2	1059.6	1071.0	1085.8	1087.9	1097.1	1097.4	1085.5	1055.7	1009.5	947.4
30°	950.0	955.3	960.9	991.8	1008.9	1033.0	1053.8	1061.5	1050.1	1016.1	958.0
32.5°	824.9	841.8	857.4	878.8	903.8	944.5	977.5	1006.6	1019.0	1003.9	958.0
35°	689.7	698.7	723.2	750.4	786.6	818.3	883.8	926.0	963.8	973.5	945.8
37.5°	584.1	592.3	600.7	621.8	662.5	715.3	769.4	824.9	880.9	921.0	919.4
40°	490.6	492.4	499.8	518.1	551.9	598.9	655.6	722.4	795.0	849.7	872.7
42.5°	418.8	418.8	428.0	449.1	468.7	503.0	557.9	616.8	696.3	766.5	815.6
45°	364.4	364.9	372.3	387.4	402.7	429.6	470.3	525.7	607.6	680.2	748.6
47.5°	320.0	325.0	329.3	337.2	352.5	376.3	405.8	453.1	511.5	590.7	670.4
50°	291.5	292.6	295.7	300.5	312.4	327.9	353.6	389.5	441.2	511.5	592.0
52.5°	263.5	263.5	266.7	272.5	279.4	292.0	310.5	340.4	379.2	442.8	515.2
55°	239.8	240.5	241.1	245.8	251.6	261.1	275.7	295.2	330.9	381.8	444.9
57.5°	216.5	219.4	218.6	222.3	226.6	233.4	243.7	260.6	287.8	326.6	383.4
60°	197.0	196.5	197.8	199.4	202.3	207.0	216.5	228.9	251.6	284.1	330.6
62.5°	174.8	174.3	175.9	177.7	180.3	184.3	191.2	200.7	218.6	242.9	283.3
65°	154.7	154.2	155.0	156.1	159.0	162.1	167.4	175.3	187.2	208.6	239.5
67.5°	134.7	134.7	135.2	136.2	138.1	140.5	144.7	149.5	161.3	175.6	199.9
70°	114.6	114.9	114.9	115.9	117.5	119.3	122.8	127.0	134.4	147.1	166.6
72.5°	97.2	97.2	96.6	97.2	98.2	99.0	101.1	105.1	110.6	119.9	134.7
75°	77.1	78.4	78.2	77.9	78.7	80.0	81.9	85.0	88.5	95.1	106.1
77.5°	59.1	59.9	59.9	60.2	61.0	62.1	62.6	65.7	68.9	72.9	81.1
80°	43.3	43.8	43.3	43.6	44.1	45.2	46.2	46.7	49.1	52.5	56.5
82.5°	29.0	28.3	29.3	29.0	29.6	29.8	30.4	30.6	32.2	34.3	37.0
85°	15.3	16.6	16.4	16.9	16.4	16.6	16.9	18.0	18.2	19.5	21.1
87.5°	5.8	6.3	6.3	6.3	6.3	6.3	6.9	7.1	7.7	7.9	8.4
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°	576.7	576.7	576.7	576.7	576.7	576.7	576.7	576.7	576.7	576.7	576.7
2.5°	601.0	598.6	595.2	591.5	587.5	583.5	581.7	579.3	574.6	569.8	566.1
5°	630.0	623.4	614.4	607.8	598.3	589.4	582.2	577.2	569.6	560.3	554.2
7.5°	662.5	650.6	636.4	621.8	607.6	594.1	583.0	573.5	561.6	550.3	541.0
10°	700.8	677.8	658.0	636.9	615.8	596.7	580.9	567.2	551.9	538.1	526.8
12.5°	734.6	707.9	680.5	650.6	622.1	597.5	577.2	559.3	540.8	524.9	513.3
15°	771.8	734.3	696.3	662.5	627.9	597.8	571.1	550.3	529.2	511.2	497.7
17.5°	814.6	764.4	716.6	668.0	637.4	598.6	565.9	538.4	516.7	498.8	481.4
20°	839.9	790.0	731.4	681.5	630.8	590.9	554.5	526.8	501.4	480.8	466.6
22.5°	853.7	801.1	739.9	688.6	629.5	584.9	546.1	513.3	486.1	465.5	449.4
25°	872.9	801.1	744.4	682.8	631.6	577.7	533.9	502.5	474.0	450.2	433.3
27.5°	881.7	808.3	744.9	671.7	618.9	564.3	519.9	486.6	455.0	431.7	417.2
30°	888.8	809.6	734.3	663.0	604.1	549.2	505.9	468.7	439.1	416.9	401.6
32.5°	889.3	806.1	720.1	646.7	584.3	531.5	489.3	454.2	423.3	399.8	384.7
35°	884.6	797.7	703.7	621.6	561.4	513.3	471.1	436.7	405.3	382.9	367.6
37.5°	872.4	788.2	688.4	598.1	534.2	487.4	451.5	418.8	387.6	365.2	352.5
40°	846.5	772.9	668.3	573.0	506.7	460.0	428.5	398.4	370.7	347.5	334.8
42.5°	812.2	749.9	644.0	546.3	476.1	430.9	403.2	378.9	350.7	330.6	317.6
45°	763.6	718.7	619.7	518.3	445.7	401.4	376.0	355.9	331.6	311.6	300.2
47.5°	708.7	681.2	588.3	486.9	413.8	372.0	348.0	331.9	311.3	294.1	282.8
50°	646.9	636.6	553.7	455.2	383.9	341.1	319.0	306.3	288.9	275.1	265.4
52.5°	579.8	586.2	517.3	423.0	355.1	311.8	290.7	279.1	268.0	256.4	247.1
55°	511.7	526.8	473.2	387.9	322.1	284.4	263.8	253.2	245.0	235.3	228.7
57.5°	447.8	471.3	427.5	350.4	291.8	255.6	236.1	226.8	220.7	215.5	209.4
60°	385.8	413.0	380.5	315.3	261.4	228.4	211.0	202.0	199.1	195.1	189.3
62.5°	330.9	358.6	334.3	279.1	230.8	202.5	186.7	179.3	175.1	173.7	170.3
65°	279.4	305.2	286.8	241.3	201.7	176.6	162.7	156.1	153.7	153.4	150.8
67.5°	234.7	259.8	242.9	204.6	171.1	150.8	140.2	134.9	132.6	132.8	131.0
70°	193.5	211.2	201.2	171.1	145.2	127.3	119.1	113.3	111.4	111.4	110.9
72.5°	155.3	169.3	161.6	138.6	118.3	104.6	97.4	94.0	92.4	92.2	92.4
75°	121.5	133.6	126.7	108.8	93.5	83.2	77.1	74.7	73.9	73.4	73.7
77.5°	90.8	98.5	94.3	82.6	70.0	62.8	59.9	57.6	56.8	57.0	57.6
80°	64.2	68.4	66.0	58.6	50.2	45.4	43.3	41.5	40.7	41.5	41.5
82.5°	40.7	43.8	41.7	37.0	32.7	29.6	27.5	26.9	26.7	26.1	26.9
85°	22.2	23.8	22.7	21.1	18.2	16.9	15.3	15.1	15.1	15.1	15.1
87.5°	8.7	9.8	8.4	8.4	7.9	6.6	6.6	6.3	6.1	6.3	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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CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	576.7	576.7	576.7	576.7	576.7	576.7	576.7	576.7	576.7	576.7	576.7
2.5°	564.5	561.1	559.0	556.1	552.7	548.2	546.3	548.2	547.1	545.3	546.1
5°	549.0	544.5	538.7	533.9	528.6	522.0	519.9	518.9	517.3	516.5	515.2
7.5°	533.6	527.0	519.9	513.3	505.7	499.8	497.2	495.4	494.8	490.9	489.3
10°	517.8	509.6	502.5	493.5	486.9	479.2	476.1	474.0	471.6	468.9	467.1
12.5°	501.2	493.0	484.0	475.6	468.9	460.5	456.3	453.9	452.0	450.2	448.1
15°	486.6	478.5	466.0	459.7	451.8	443.3	440.7	435.4	435.9	432.8	430.7
17.5°	471.3	459.2	450.5	441.0	435.2	429.1	424.1	418.5	417.7	415.3	414.6
20°	454.2	441.5	435.4	425.6	417.7	411.7	407.2	406.6	405.0	401.6	400.3
22.5°	437.3	427.0	418.5	409.5	402.4	394.5	392.4	393.2	390.3	389.5	386.6
25°	421.9	413.0	402.4	394.0	388.2	383.1	380.2	379.2	378.1	377.3	376.0
27.5°	405.6	396.1	387.1	380.2	374.7	371.3	369.4	367.0	366.8	366.8	366.2
30°	389.2	380.8	374.7	366.0	361.0	358.8	357.3	356.5	357.3	357.3	357.5
32.5°	374.2	366.0	358.8	352.8	347.8	346.2	345.9	345.9	347.0	347.0	347.8
35°	358.6	350.4	343.8	339.6	335.3	335.1	335.3	335.9	337.2	337.5	338.5
37.5°	341.7	335.3	330.3	325.0	324.0	324.5	325.0	325.6	326.1	328.2	328.2
40°	326.1	321.3	316.3	312.9	311.0	312.4	313.2	313.4	315.0	316.3	317.4
42.5°	310.8	306.3	302.3	299.4	298.6	299.7	300.5	301.3	302.9	303.9	305.8
45°	293.6	290.7	287.3	284.9	285.2	286.8	286.8	289.4	290.5	291.0	292.3
47.5°	277.8	274.6	272.2	271.2	270.9	272.2	273.0	275.1	275.7	277.5	278.6
50°	260.9	258.5	256.7	255.3	255.6	256.1	258.0	260.1	260.6	262.7	264.6
52.5°	243.2	241.1	239.5	240.0	240.8	240.8	242.7	244.0	245.3	246.9	248.7
55°	225.8	222.9	223.1	222.3	223.1	225.0	225.8	227.9	228.9	229.7	232.4
57.5°	206.7	206.2	205.4	204.6	206.2	207.0	208.3	209.7	211.5	212.6	214.4
60°	187.2	186.4	186.4	187.5	188.0	189.6	191.7	192.5	193.0	195.1	197.5
62.5°	169.3	168.5	168.2	169.8	169.8	171.4	172.2	173.5	175.6	176.4	179.6
65°	150.0	149.5	149.5	150.8	151.0	153.9	153.9	153.9	155.3	158.2	159.7
67.5°	129.9	130.2	131.0	131.8	132.8	133.6	133.9	135.5	137.6	139.4	142.6
70°	109.8	111.2	112.7	112.5	113.3	114.6	114.9	116.4	118.3	120.7	124.4
72.5°	91.9	92.7	94.3	94.3	95.3	96.1	97.4	98.5	100.9	103.0	104.6
75°	73.9	74.2	75.5	76.3	77.1	77.6	79.0	80.8	82.1	84.0	86.3
77.5°	58.1	57.6	58.6	58.9	59.4	60.5	61.5	63.4	64.4	66.5	67.3
80°	41.2	42.2	42.5	42.8	43.3	44.6	45.4	46.2	47.3	49.1	49.9
82.5°	27.2	27.7	28.5	28.8	29.3	29.6	29.8	31.2	31.9	32.5	35.1
85°	15.8	16.6	16.1	16.1	16.6	16.9	18.0	18.0	19.0	18.5	19.8
87.5°	6.9	6.6	6.6	6.9	6.6	6.3	7.1	7.1	6.9	7.1	7.1
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: S123DR-H560D927-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	576.7	576.7	576.7	576.7
2.5°	544.7	544.7	542.6	543.4
5°	512.5	513.6	510.9	510.1
7.5°	488.8	487.7	485.8	485.8
10°	465.5	464.5	463.7	463.7
12.5°	445.4	444.4	442.8	444.1
15°	427.5	427.8	426.7	426.7
17.5°	413.8	411.4	410.6	410.3
20°	397.4	397.9	396.9	395.0
22.5°	387.1	385.8	384.7	384.5
25°	376.5	375.2	374.9	373.9
27.5°	366.0	366.2	365.4	365.4
30°	357.3	358.0	357.3	357.5
32.5°	348.5	348.5	348.5	347.5
35°	339.0	339.3	339.0	338.5
37.5°	329.3	329.3	329.5	330.1
40°	318.4	318.4	319.0	319.0
42.5°	305.5	306.8	307.6	306.3
45°	293.9	294.1	294.4	294.1
47.5°	280.9	280.2	280.4	280.9
50°	264.8	266.7	266.7	265.1
52.5°	249.3	249.8	250.8	250.8
55°	233.9	234.2	234.5	235.0
57.5°	216.5	216.8	216.8	216.5
60°	199.1	200.7	200.4	200.7
62.5°	180.3	182.7	183.5	183.2
65°	162.7	163.2	164.5	166.4
67.5°	143.9	145.2	147.3	146.8
70°	125.4	127.3	127.8	128.9
72.5°	106.9	109.3	109.8	110.4
75°	89.0	90.0	91.1	90.8
77.5°	69.4	71.0	72.9	71.8
80°	52.0	52.3	53.9	53.3
82.5°	34.3	36.4	36.4	35.4
85°	20.1	20.1	20.1	20.1
87.5°	6.9	6.6	7.1	6.9
90°	0.0	0.0	0.0	0.0

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