

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: P332413-840

Luminaire Tested: **S123RDIW-S560D460U840-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332413-840  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-9,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S123RDIW-S560D460U840-4F0-1E-UDD-F1  
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 560 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED  
HOUSING  
UPLIGHT 460 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3770.6 lumens  
Efficiency: N/A  
Efficacy: 124.9 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.06 / 1.22  
Luminous Opening: Rectangular (W 0.25' x L: 4' x H: 0')  
CIE Type: General Diffuse

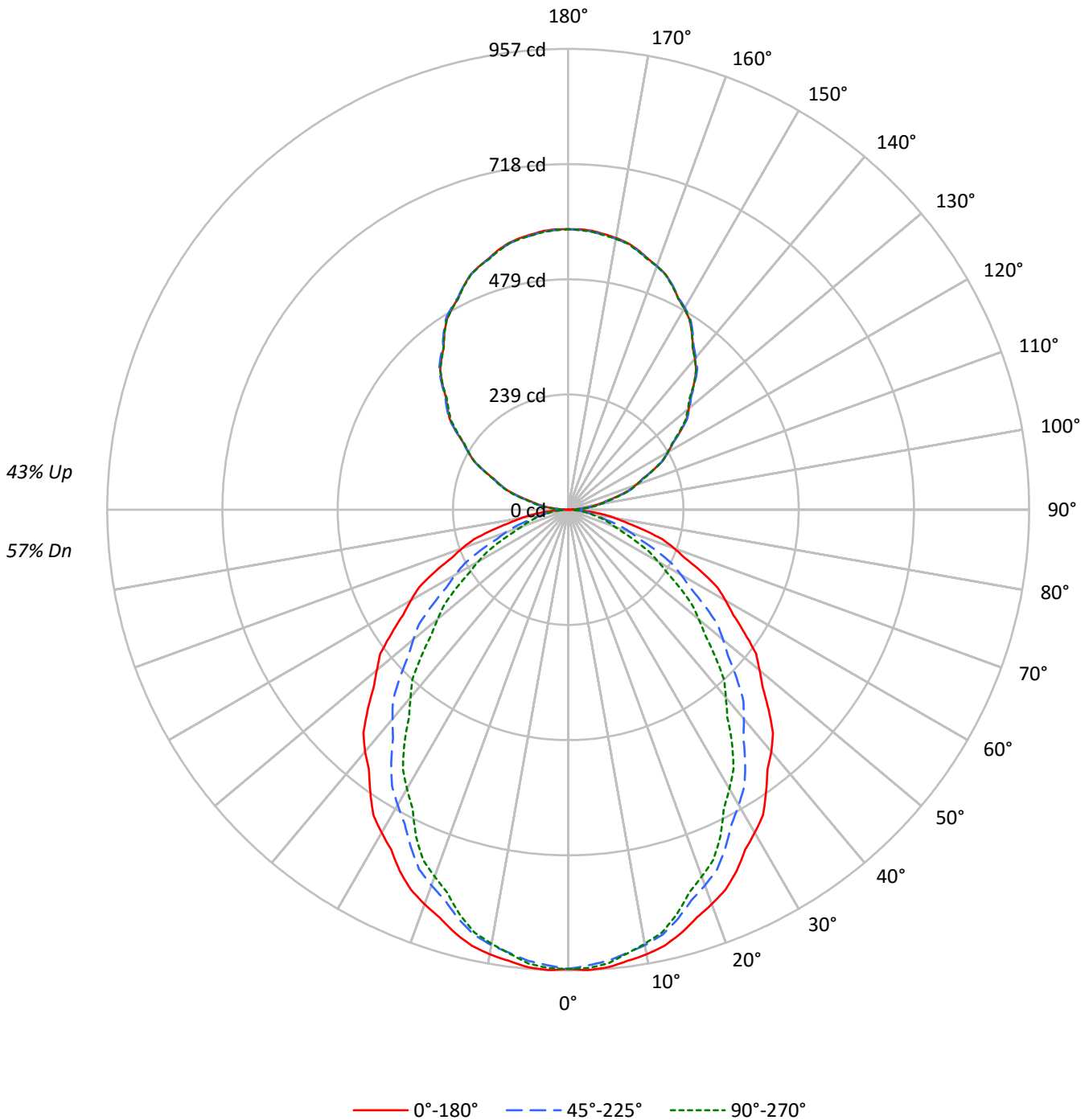
Input Watts (W): 30.2  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	109	109	109	109	101	101	101	101	87	87	87	75	75	75	63	63	63	57
1	100	96	92	88	93	89	86	83	77	75	73	66	64	63	56	55	54	49
2	91	84	78	73	85	78	73	69	68	64	61	59	56	53	50	48	46	42
3	83	74	67	61	77	69	63	58	60	55	51	52	48	45	44	42	39	36
4	76	66	58	52	71	62	55	49	54	48	44	47	42	39	40	37	34	31
5	70	59	51	45	65	55	48	43	48	43	38	42	38	34	36	33	30	27
6	65	53	45	39	60	50	43	37	44	38	34	38	34	30	33	29	27	24
7	60	48	40	34	56	45	38	33	40	34	30	35	30	27	30	27	24	21
8	56	44	36	31	52	41	34	29	36	31	27	32	27	24	28	24	21	19
9	52	40	32	27	49	38	31	26	33	28	24	29	25	22	26	22	19	17
10	49	37	30	25	46	35	28	24	31	25	22	27	23	20	24	20	18	16

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	10267	10267	10267
5°	10306	10164	10222
10°	10248	10037	10002
15°	10137	9802	9698
20°	9986	9507	9286
25°	9830	9178	8884
30°	9625	8797	8316
35°	9412	8418	7796
40°	9218	7967	7152
45°	8961	7524	6570
50°	8679	7021	5921
55°	8392	6446	5315
60°	8127	5828	4646
65°	7784	5163	3978
70°	7352	4334	3213
75°	6725	3410	3023
80°	5994	3025	2777
85°	5064	2668	2482



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	89.6	2.4
10°-20°	249.2	6.6
20°-30°	358.8	9.5
30°-40°	404.2	10.7
40°-50°	386.7	10.3
50°-60°	316.7	8.4
60°-70°	213.7	5.7
70°-80°	107.5	2.9
80°-90°	30.2	0.8
90°-100°	37.9	1.0
100°-110°	113.6	3.0
110°-120°	193.2	5.1
120°-130°	254.1	6.7
130°-140°	285.6	7.6
140°-150°	280.8	7.4
150°-160°	236.4	6.3
160°-170°	157.3	4.2
170°-180°	55.1	1.5
0°-30°	697.6	18.5
0°-40°	1101.8	29.2
0°-60°	1805.2	47.9
0°-90°	2156.5	57.2
90°-120°	344.8	9.1
90°-150°	1165.3	30.9
90°-180°	1614.0	42.8
0°-180°	3770.6	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	954	954	954	954	954	
5°	954	950	941	947	946	90
15°	910	900	880	876	870	256
25°	828	808	773	757	748	381
35°	716	687	641	608	593	448
45°	589	552	494	452	432	454
55°	447	408	344	300	283	401
65°	306	262	203	166	156	302
75°	162	124	82	75	73	172
85°	41	25	22	20	20	46
90°	0	5	11	13	14	4
95°	27	30	34	36	36	30
105°	103	104	108	108	109	110
115°	194	196	195	195	195	192
125°	285	286	285	283	281	254
135°	369	372	372	370	369	284
145°	448	449	450	450	448	280
155°	513	513	514	515	512	236
165°	559	557	557	560	557	157
175°	581	580	579	582	579	55
180°	583	583	583	583	583	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	953.8	953.8	953.8	953.8	953.8	953.8	953.8	953.8	953.8	953.8	953.8
2.5°	956.9	956.3	955.8	955.2	954.7	953.6	952.0	950.3	948.7	947.1	948.6
5°	953.8	953.0	952.1	951.3	950.4	949.0	946.8	944.8	942.7	940.7	942.2
7.5°	945.0	944.1	943.1	942.2	941.3	939.5	936.9	934.1	931.4	928.8	929.6
10°	937.6	936.3	935.1	933.9	932.8	930.6	927.6	924.4	921.3	918.3	918.4
12.5°	927.1	925.7	924.3	923.0	921.7	919.2	915.3	911.6	907.8	904.0	903.9
15°	909.7	907.9	905.9	904.0	902.2	898.8	894.0	889.2	884.3	879.6	878.7
17.5°	887.9	885.8	883.5	881.3	879.1	874.9	868.8	862.7	856.6	850.5	848.7
20°	871.8	869.1	866.4	863.5	860.8	856.2	849.6	843.1	836.6	830.0	827.8
22.5°	853.8	850.7	847.6	844.3	841.2	836.2	829.2	822.2	815.4	808.4	805.6
25°	827.7	823.4	819.1	814.9	810.5	804.5	796.5	788.6	780.7	772.8	769.2
27.5°	796.0	791.2	786.5	781.7	777.0	770.2	761.4	752.7	743.9	735.1	730.0
30°	774.4	769.2	764.1	758.9	753.8	746.3	736.7	727.1	717.4	707.8	702.0
32.5°	752.7	746.9	741.0	735.2	729.3	721.3	711.1	700.9	690.7	680.5	674.2
35°	716.3	710.1	704.0	697.8	691.6	683.2	672.5	661.9	651.2	640.6	633.1
37.5°	679.5	672.7	665.8	658.8	652.0	642.9	631.5	620.2	608.7	597.3	589.0
40°	656.0	648.4	640.9	633.3	625.7	615.8	603.7	591.5	579.3	567.0	558.1
42.5°	629.3	621.8	614.3	606.7	599.2	589.1	576.4	563.8	551.2	538.6	528.8
45°	588.7	581.0	573.2	565.5	557.7	547.2	534.0	520.8	507.6	494.3	484.5
47.5°	548.0	539.5	531.0	522.5	514.0	503.2	489.9	476.7	463.4	450.2	439.6
50°	518.3	510.2	502.1	494.0	485.9	474.9	461.0	447.2	433.2	419.3	408.6
52.5°	491.7	482.9	474.1	465.3	456.7	445.4	431.5	417.8	403.9	390.2	379.1
55°	447.2	438.7	430.3	421.8	413.4	401.9	387.3	372.7	358.1	343.5	333.5
57.5°	406.0	396.8	387.6	378.4	369.2	357.3	342.6	328.0	313.3	298.6	289.2
60°	377.5	368.1	358.6	349.1	339.7	327.8	313.6	299.3	285.0	270.7	261.5
62.5°	349.0	339.6	330.1	320.6	311.2	299.3	285.1	270.8	256.5	242.3	233.6
65°	305.6	296.1	286.7	277.2	267.7	256.3	242.9	229.5	216.1	202.7	194.3
67.5°	262.1	252.6	243.0	233.4	223.9	212.7	199.8	186.9	174.1	161.2	154.9
70°	233.6	224.3	215.1	205.8	196.5	185.8	173.8	161.8	149.8	137.7	131.7
72.5°	205.1	196.0	186.8	177.7	168.5	158.5	147.6	136.6	125.7	114.8	109.9
75°	161.7	153.4	145.2	136.9	128.7	119.8	110.4	100.9	91.5	82.0	80.3
77.5°	122.1	114.6	107.1	99.7	92.2	85.4	79.4	73.3	67.2	61.1	60.2
80°	96.7	89.7	82.6	75.5	68.5	63.2	59.6	55.9	52.3	48.8	48.2
82.5°	72.6	66.4	60.4	54.3	48.2	44.3	42.6	41.0	39.3	37.6	37.1
85°	41.0	37.3	33.4	29.7	25.9	23.7	23.2	22.7	22.2	21.6	21.3
87.5°	14.9	13.6	12.3	11.0	9.7	9.2	9.5	9.7	10.0	10.2	10.2
90°	0.5	1.5	2.5	3.5	4.5	5.7	7.0	8.4	9.7	11.0	11.4
92.5°	11.1	11.8	12.4	13.1	13.8	14.5	15.3	16.1	16.9	17.6	17.9
95°	27.0	27.7	28.4	29.2	29.9	30.6	31.4	32.2	33.0	33.8	34.2
97.5°	48.0	48.5	49.0	49.6	50.1	50.6	51.2	51.8	52.4	53.0	53.4
100°	62.2	62.8	63.4	64.0	64.6	65.2	65.7	66.2	66.8	67.3	67.6
102.5°	78.7	79.1	79.5	79.8	80.2	80.7	81.4	82.0	82.7	83.4	83.7
105°	103.0	103.2	103.4	103.6	103.8	104.3	105.2	106.1	107.0	108.0	108.0
107.5°	131.2	131.3	131.4	131.5	131.7	131.9	132.3	132.6	133.0	133.4	133.7
110°	148.8	149.0	149.2	149.4	149.6	149.8	150.0	150.2	150.4	150.6	151.0



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	167.0	167.1	167.3	167.4	167.5	167.6	167.6	167.7	167.7	167.7	168.2
115°	194.5	194.8	195.1	195.4	195.7	195.8	195.6	195.4	195.2	195.0	195.1
117.5°	222.2	222.4	222.6	222.8	223.0	222.9	222.7	222.4	222.2	221.9	221.9
120°	239.3	239.9	240.5	241.2	241.8	241.9	241.4	240.9	240.3	239.8	239.7
122.5°	257.3	257.7	258.2	258.6	259.0	259.1	258.9	258.6	258.4	258.1	257.8
125°	284.7	285.0	285.3	285.6	285.9	285.9	285.7	285.5	285.3	285.1	284.7
127.5°	309.9	310.5	311.2	311.8	312.6	312.8	312.6	312.3	312.0	311.8	311.2
130°	326.8	327.6	328.4	329.2	330.0	330.2	329.9	329.6	329.3	329.0	328.6
132.5°	343.6	344.4	345.3	346.1	346.9	347.2	346.9	346.7	346.5	346.3	345.8
135°	369.3	369.9	370.5	371.1	371.7	372.0	371.9	371.8	371.7	371.6	371.2
137.5°	393.1	393.6	394.2	394.7	395.2	395.6	395.8	396.1	396.4	396.6	396.2
140°	409.6	410.1	410.6	411.1	411.6	411.9	412.0	412.1	412.2	412.3	412.2
142.5°	424.6	425.2	425.7	426.2	426.7	427.0	427.2	427.4	427.6	427.7	427.6
145°	448.1	448.3	448.5	448.7	448.9	449.1	449.4	449.7	450.0	450.3	450.2
147.5°	468.6	468.9	469.3	469.6	470.0	470.3	470.6	470.9	471.2	471.5	471.5
150°	482.8	483.0	483.2	483.4	483.6	483.8	484.0	484.2	484.4	484.6	484.6
152.5°	494.5	494.8	495.1	495.3	495.6	495.8	495.9	496.1	496.2	496.3	496.6
155°	513.0	513.0	513.0	513.0	513.0	513.1	513.2	513.3	513.4	513.5	513.9
157.5°	528.8	528.7	528.6	528.4	528.3	528.3	528.4	528.5	528.5	528.6	529.0
160°	538.7	538.5	538.3	538.1	537.9	537.8	537.8	537.8	537.8	537.8	538.3
162.5°	547.4	547.1	546.8	546.5	546.3	546.2	546.2	546.3	546.4	546.5	547.0
165°	558.8	558.5	558.2	557.8	557.5	557.4	557.4	557.4	557.4	557.4	558.1
167.5°	567.8	567.4	567.0	566.6	566.2	566.0	566.1	566.2	566.3	566.3	567.0
170°	573.0	572.6	572.2	571.8	571.4	571.2	571.2	571.2	571.2	571.2	571.9
172.5°	577.0	576.6	576.2	575.8	575.3	575.1	575.1	575.1	575.1	575.1	575.8
175°	581.2	580.8	580.4	580.0	579.6	579.4	579.4	579.4	579.4	579.4	580.0
177.5°	583.0	582.6	582.3	582.0	581.7	581.5	581.5	581.5	581.5	581.5	582.0
180°	582.6	582.6	582.6	582.6	582.6	582.6	582.6	582.6	582.6	582.6	582.6



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	953.8	953.8	953.8	953.8	953.8	953.8	953.8	953.8
2.5°	950.1	951.6	953.1	953.7	953.4	953.1	952.9	952.6
5°	943.7	945.3	946.8	947.5	947.2	946.7	946.4	946.0
7.5°	930.5	931.3	932.2	932.3	931.7	931.2	930.6	930.0
10°	918.6	918.8	918.9	918.6	917.8	916.9	916.0	915.1
12.5°	903.8	903.7	903.6	903.0	902.0	901.0	900.1	899.1
15°	877.9	877.0	876.2	875.0	873.8	872.7	871.5	870.3
17.5°	846.9	845.1	843.1	841.4	839.6	837.8	836.0	834.2
20°	825.6	823.3	821.1	819.0	816.9	814.9	812.7	810.7
22.5°	802.8	800.0	797.3	794.9	792.9	791.0	789.1	787.2
25°	765.6	761.9	758.4	755.6	753.8	751.8	749.9	748.0
27.5°	725.0	720.0	715.0	711.0	708.1	705.3	702.4	699.4
30°	696.1	690.2	684.5	680.1	677.4	674.7	671.9	669.1
32.5°	667.8	661.4	655.0	650.4	647.5	644.6	641.7	638.8
35°	625.7	618.3	611.0	605.7	602.6	599.6	596.4	593.3
37.5°	580.6	572.2	563.8	557.7	553.9	550.1	546.2	542.4
40°	549.2	540.2	531.3	524.8	520.9	516.9	513.0	509.0
42.5°	519.1	509.3	499.5	492.8	489.3	485.7	482.2	478.7
45°	474.7	464.9	455.1	448.2	444.0	439.9	435.8	431.6
47.5°	428.9	418.3	407.6	400.4	396.8	393.0	389.4	385.7
50°	398.0	387.3	376.7	369.3	365.4	361.4	357.5	353.6
52.5°	368.1	357.0	345.9	338.6	335.1	331.5	328.0	324.5
55°	323.6	313.6	303.6	296.9	293.5	290.0	286.6	283.2
57.5°	279.7	270.3	260.9	254.8	251.9	248.9	246.0	243.1
60°	252.2	242.9	233.6	227.5	224.6	221.7	218.7	215.8
62.5°	224.8	216.1	207.3	201.5	198.4	195.3	192.3	189.2
65°	185.8	177.4	169.0	163.8	162.0	160.1	158.1	156.2
67.5°	148.7	142.3	136.0	131.9	129.9	127.8	125.8	123.8
70°	125.6	119.7	113.6	109.7	107.8	105.9	104.0	102.1
72.5°	104.9	100.1	95.1	92.3	91.5	90.7	89.9	89.1
75°	78.6	76.9	75.1	74.1	73.7	73.4	73.0	72.7
77.5°	59.3	58.4	57.4	56.8	56.5	56.0	55.7	55.3
80°	47.7	47.2	46.7	46.3	45.9	45.5	45.2	44.8
82.5°	36.6	36.1	35.5	35.2	35.1	35.1	35.0	34.9
85°	21.0	20.6	20.3	20.1	20.1	20.1	20.1	20.1
87.5°	10.1	10.1	10.0	9.9	9.8	9.8	9.7	9.6
90°	11.8	12.2	12.6	12.9	13.1	13.3	13.5	13.7
92.5°	18.2	18.6	18.9	19.0	18.9	18.7	18.6	18.5
95°	34.6	35.0	35.4	35.6	35.6	35.6	35.6	35.6
97.5°	53.9	54.4	54.8	55.0	55.0	55.0	54.9	54.9
100°	67.9	68.2	68.5	68.8	69.0	69.2	69.4	69.6
102.5°	84.0	84.3	84.6	84.7	84.7	84.6	84.6	84.5
105°	108.0	108.0	108.0	108.1	108.4	108.6	108.8	109.0
107.5°	134.0	134.3	134.6	134.7	134.6	134.5	134.4	134.3
110°	151.4	151.8	152.2	152.3	152.1	151.9	151.7	151.5





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CATALOG NUMBER: S123RDIW-S560D460U840-4F0-1E-UDD-F1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	168.7	169.3	169.8	170.0	169.9	169.9	169.9	169.8
115°	195.2	195.3	195.4	195.4	195.3	195.2	195.1	195.0
117.5°	221.9	221.8	221.8	221.7	221.4	221.1	220.8	220.5
120°	239.6	239.5	239.4	239.2	239.0	238.8	238.6	238.4
122.5°	257.6	257.3	257.0	256.8	256.5	256.2	255.9	255.6
125°	284.3	283.9	283.5	283.1	282.7	282.3	281.9	281.4
127.5°	310.7	310.1	309.5	309.0	308.6	308.1	307.6	307.2
130°	328.2	327.8	327.4	326.9	326.2	325.5	324.8	324.0
132.5°	345.3	344.8	344.3	343.8	343.3	342.6	342.1	341.5
135°	370.8	370.4	370.0	369.7	369.5	369.3	369.1	368.9
137.5°	395.8	395.4	394.9	394.5	394.0	393.7	393.3	392.9
140°	412.1	412.0	411.9	411.5	410.8	410.1	409.4	408.7
142.5°	427.5	427.4	427.3	427.0	426.5	425.9	425.4	424.7
145°	450.1	450.0	449.9	449.7	449.3	448.9	448.5	448.1
147.5°	471.5	471.5	471.5	471.2	470.6	469.9	469.3	468.7
150°	484.6	484.6	484.6	484.3	483.7	483.1	482.5	481.9
152.5°	496.7	496.9	497.1	496.9	496.3	495.7	495.2	494.7
155°	514.3	514.7	515.1	514.9	514.2	513.5	512.8	512.1
157.5°	529.5	529.9	530.3	530.2	529.7	529.1	528.5	528.0
160°	538.8	539.3	539.8	539.8	539.4	539.0	538.6	538.2
162.5°	547.5	548.1	548.6	548.5	547.9	547.1	546.5	545.8
165°	558.7	559.3	559.9	559.8	559.1	558.4	557.6	556.9
167.5°	567.6	568.3	568.9	568.9	568.3	567.6	567.0	566.3
170°	572.6	573.3	574.0	574.0	573.3	572.6	571.9	571.2
172.5°	576.4	577.0	577.6	577.6	576.9	576.2	575.5	574.8
175°	580.6	581.2	581.8	581.8	581.1	580.4	579.7	579.0
177.5°	582.5	583.0	583.4	583.4	582.8	582.3	581.7	581.1
180°	582.6	582.6	582.6	582.6	582.6	582.6	582.6	582.6

(END OF REPORT)