

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: P332093-927

Luminaire Tested: **S123DIW-S340D460U927-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332093-927  
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: S123DIW-S340D460U927-4F0-1E-UDD-D1  
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 340 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 460 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2406.2 lumens  
Efficiency: N/A  
Efficacy: 104.6 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.37  
Luminous Opening: Rectangular w/ Sides (W: 0.25' x L: 4' x H: 0.08')  
CIE Type: General Diffuse

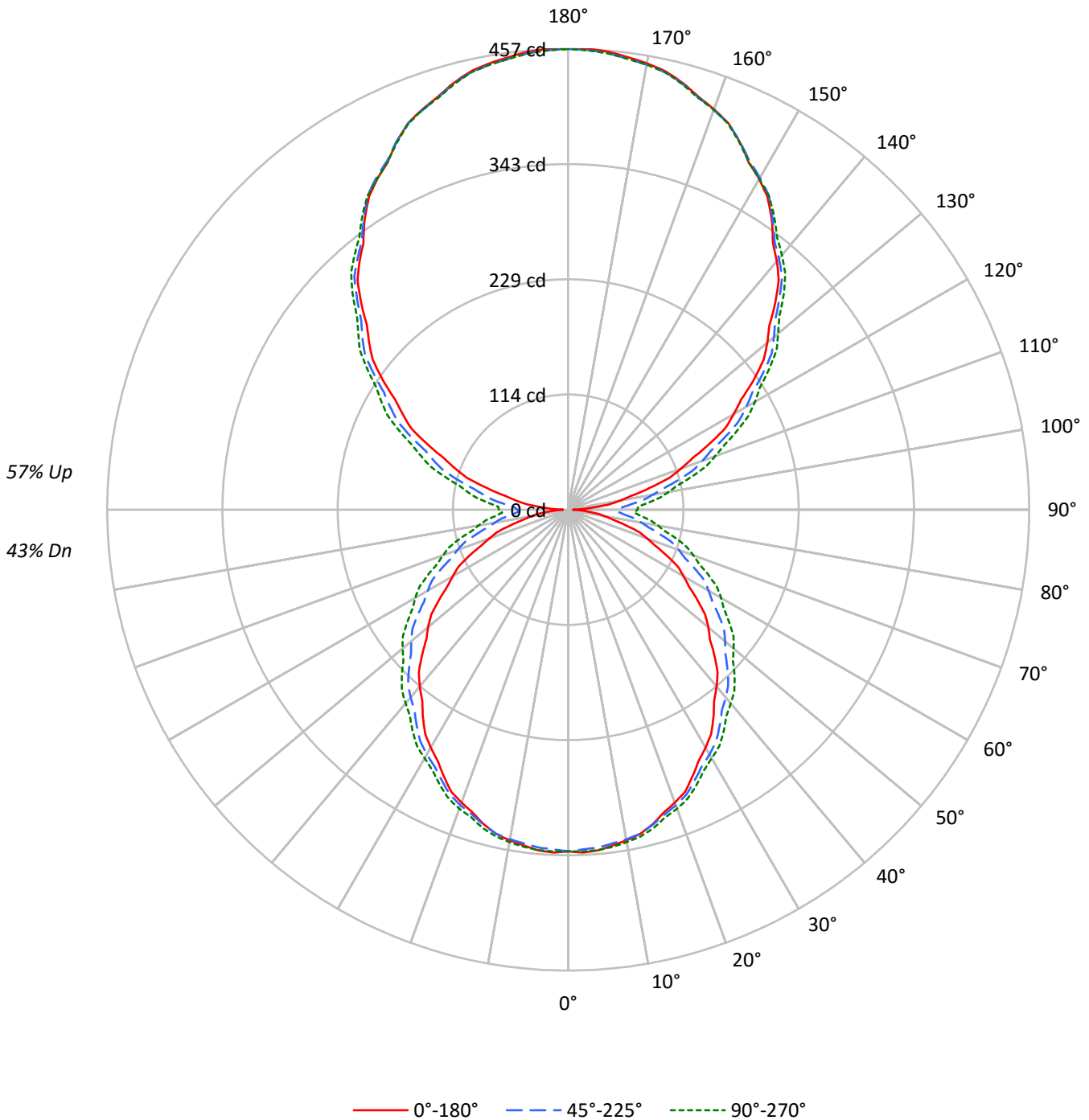
Input Watts (W): 23  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	106	106	106	106	97	97	97	97	80	80	80	64	64	64	50	50	50	43
1	95	91	86	83	87	83	79	76	68	66	63	55	53	52	43	42	40	35
2	86	79	72	67	79	72	66	62	59	55	52	48	45	42	37	35	33	28
3	79	69	61	55	71	63	56	51	52	47	43	42	38	35	33	30	28	24
4	72	61	53	46	65	56	49	43	46	41	36	37	33	30	29	26	24	20
5	66	54	46	39	60	49	42	37	41	35	31	33	29	26	26	23	21	17
6	60	48	40	34	55	44	37	32	37	31	27	30	26	23	23	20	18	15
7	56	43	35	30	51	40	33	28	33	28	24	27	23	20	21	18	16	13
8	52	39	32	26	47	36	29	24	30	25	21	25	21	18	20	17	14	12
9	48	36	28	23	44	33	26	22	28	22	19	23	19	16	18	15	13	11
10	45	33	26	21	41	30	24	19	26	20	17	21	17	14	17	14	12	10

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

	0°	45°	90°
0°	3647	3647	3647
5°	3658	3556	3557
10°	3626	3473	3456
15°	3579	3380	3345
20°	3513	3274	3224
25°	3430	3152	3096
30°	3345	3043	2966
35°	3251	2926	2863
40°	3161	2820	2752
45°	3061	2718	2664
50°	2962	2618	2566
55°	2852	2516	2478
60°	2745	2411	2388
65°	2636	2300	2280
70°	2471	2174	2170
75°	2265	2031	2059
80°	2023	1890	1932
85°	1805	1794	1856



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	32.1	1.3
10°-20°	91.6	3.8
20°-30°	137.0	5.7
30°-40°	163.6	6.8
40°-50°	171.1	7.1
50°-60°	160.6	6.7
60°-70°	134.1	5.6
70°-80°	96.0	4.0
80°-90°	58.6	2.4
90°-100°	65.7	2.7
100°-110°	115.5	4.8
110°-120°	169.2	7.0
120°-130°	209.4	8.7
130°-140°	228.6	9.5
140°-150°	221.2	9.2
150°-160°	185.4	7.7
160°-170°	123.4	5.1
170°-180°	43.2	1.8
0°-30°	260.6	10.8
0°-40°	424.2	17.6
0°-60°	755.9	31.4
0°-90°	1044.6	43.4
90°-120°	350.4	14.6
90°-150°	1009.6	42.0
90°-180°	1362.0	56.6
0°-180°	2406.2	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	339	339	339	339	339	
5°	339	338	336	339	339	32
15°	323	324	324	327	327	91
25°	292	295	296	301	301	134
35°	251	257	262	267	269	157
45°	205	214	223	230	233	158
55°	156	169	182	192	195	140
65°	108	123	139	149	154	107
75°	59	76	94	106	111	63
85°	18	37	56	68	72	19
90°	5	27	50	64	69	5
95°	25	42	63	75	80	27
105°	84	94	112	122	127	89
115°	154	160	172	181	184	153
125°	224	226	235	242	243	200
135°	290	292	296	301	302	224
145°	352	352	353	356	356	220
155°	402	402	403	404	402	185
165°	438	437	437	439	437	124
175°	456	455	454	456	454	43
180°	457	457	457	457	457	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	338.8	338.8	338.8	338.8	338.8	338.8	338.8	338.8	338.8	338.8	338.8
2.5°	340.3	340.2	339.9	339.8	339.5	339.2	338.7	338.1	337.6	337.1	337.6
5°	339.2	339.1	338.9	338.7	338.6	338.3	337.7	337.2	336.8	336.3	336.9
7.5°	335.9	336.0	336.0	336.0	336.0	335.8	335.3	334.9	334.4	333.9	334.7
10°	333.0	333.1	333.3	333.4	333.6	333.5	333.0	332.6	332.2	331.8	332.6
12.5°	329.4	329.6	329.9	330.1	330.3	330.3	330.0	329.7	329.5	329.2	329.9
15°	323.0	323.2	323.4	323.7	323.9	324.1	323.9	323.8	323.8	323.7	324.6
17.5°	314.9	315.4	315.8	316.3	316.8	317.0	317.0	317.0	317.0	317.0	317.7
20°	309.0	309.4	309.9	310.5	310.9	311.2	311.4	311.6	311.7	311.9	312.7
22.5°	302.8	303.2	303.7	304.2	304.8	305.1	305.3	305.5	305.8	306.0	307.0
25°	291.6	292.4	293.3	294.1	294.9	295.4	295.6	295.9	296.1	296.4	297.5
27.5°	280.4	281.3	282.3	283.2	284.2	284.9	285.3	285.9	286.5	286.9	287.9
30°	272.4	273.5	274.6	275.6	276.7	277.5	278.2	278.8	279.5	280.2	281.1
32.5°	263.6	264.7	265.9	267.1	268.3	269.3	270.2	271.1	272.0	272.7	273.9
35°	251.0	252.3	253.7	254.9	256.3	257.5	258.5	259.6	260.6	261.7	262.9
37.5°	237.7	239.2	240.7	242.2	243.6	245.0	246.3	247.6	249.0	250.3	251.7
40°	228.9	230.4	231.8	233.3	234.7	236.3	238.0	239.6	241.2	242.9	244.3
42.5°	219.1	220.9	222.7	224.5	226.3	228.1	229.8	231.5	233.2	234.9	236.5
45°	205.3	207.2	209.1	211.1	213.1	215.1	217.1	219.2	221.3	223.3	224.9
47.5°	190.7	192.9	195.1	197.4	199.6	201.9	204.2	206.6	208.9	211.3	213.0
50°	181.3	183.5	185.8	188.1	190.4	192.8	195.4	198.0	200.5	203.0	204.9
52.5°	171.2	173.6	176.0	178.5	180.9	183.5	186.3	189.2	191.9	194.7	196.7
55°	156.5	159.2	161.9	164.6	167.3	170.2	173.1	176.1	179.0	182.0	184.2
57.5°	142.2	145.0	147.8	150.7	153.4	156.5	159.7	163.0	166.2	169.4	171.7
60°	132.1	135.1	138.1	141.0	143.9	147.1	150.5	153.8	157.2	160.6	162.9
62.5°	122.7	125.7	128.7	131.7	134.8	138.1	141.6	145.2	148.8	152.3	154.6
65°	108.1	111.4	114.5	117.7	121.0	124.4	127.9	131.6	135.1	138.8	141.2
67.5°	93.4	96.8	100.2	103.5	106.9	110.5	114.2	117.9	121.5	125.2	127.9
70°	83.0	86.6	90.1	93.6	97.1	100.9	104.8	108.8	112.7	116.6	119.3
72.5°	73.6	77.2	80.6	84.2	87.7	91.5	95.5	99.7	103.7	107.8	110.5
75°	58.7	62.6	66.4	70.3	74.1	78.1	82.2	86.3	90.4	94.5	97.2
77.5°	45.7	49.6	53.5	57.4	61.2	65.3	69.4	73.5	77.6	81.8	84.7
80°	36.5	40.6	44.6	48.6	52.6	56.8	61.0	65.3	69.6	73.8	76.6
82.5°	28.6	32.6	36.8	40.8	44.9	49.1	53.5	57.8	62.1	66.5	69.2
85°	18.1	22.2	26.3	30.4	34.5	38.7	43.1	47.4	51.7	56.1	58.9
87.5°	9.9	14.1	18.4	22.7	26.9	31.2	35.6	40.0	44.4	48.7	51.6
90°	5.1	10.0	14.8	19.6	24.4	29.5	34.7	39.8	45.1	50.3	53.5
92.5°	13.2	17.3	21.5	25.7	29.9	34.3	39.0	43.7	48.4	53.2	56.1
95°	25.3	29.0	32.7	36.5	40.2	44.4	49.1	53.8	58.5	63.1	66.0
97.5°	41.3	44.5	47.8	51.2	54.4	58.2	62.6	66.9	71.1	75.5	78.3
100°	52.1	55.2	58.4	61.5	64.6	68.2	72.4	76.5	80.7	84.9	87.5
102.5°	64.8	67.4	70.1	72.7	75.3	78.8	83.0	87.3	91.5	95.8	98.3
105°	83.7	85.9	88.0	90.2	92.2	95.5	99.7	103.9	108.1	112.4	114.7
107.5°	105.4	107.2	108.9	110.7	112.5	115.2	118.8	122.5	126.1	129.7	132.1
110°	118.9	120.5	122.2	123.8	125.4	127.9	131.4	134.8	138.3	141.7	144.2



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	133.2	134.6	135.9	137.2	138.5	140.8	143.9	147.1	150.3	153.4	155.9
115°	154.4	155.7	156.9	158.1	159.3	161.3	164.1	166.9	169.7	172.5	174.5
117.5°	176.0	176.8	177.5	178.3	179.1	180.8	183.3	185.9	188.5	191.0	193.0
120°	189.3	190.1	191.0	191.9	192.8	194.4	196.7	199.0	201.3	203.6	205.4
122.5°	203.3	203.9	204.5	205.0	205.6	207.0	209.4	211.8	214.1	216.5	218.1
125°	224.4	224.7	224.9	225.1	225.4	226.6	228.8	231.0	233.2	235.4	236.9
127.5°	244.2	244.6	245.1	245.5	246.0	247.1	248.8	250.6	252.4	254.2	255.4
130°	257.5	258.0	258.6	259.1	259.7	260.6	262.1	263.4	264.8	266.3	267.4
132.5°	270.4	271.0	271.6	272.2	272.8	273.7	274.9	276.0	277.1	278.3	279.4
135°	290.4	290.8	291.2	291.6	292.0	292.6	293.5	294.3	295.1	296.0	297.1
137.5°	309.0	309.3	309.7	310.1	310.4	310.9	311.6	312.4	313.1	313.8	314.7
140°	321.7	322.1	322.5	322.9	323.3	323.6	323.9	324.3	324.6	325.0	326.1
142.5°	333.4	333.7	334.1	334.5	334.8	335.0	335.3	335.4	335.6	335.8	336.8
145°	351.8	351.9	352.0	352.0	352.1	352.3	352.5	352.8	353.0	353.2	353.9
147.5°	367.6	367.8	368.1	368.4	368.7	368.9	369.2	369.4	369.6	369.9	370.0
150°	378.7	378.9	379.1	379.2	379.4	379.5	379.7	379.9	380.0	380.2	380.2
152.5°	387.9	388.2	388.4	388.6	388.8	389.0	389.0	389.2	389.3	389.4	389.5
155°	402.4	402.4	402.4	402.4	402.4	402.5	402.6	402.7	402.7	402.8	403.1
157.5°	414.8	414.7	414.6	414.5	414.4	414.4	414.5	414.5	414.5	414.6	414.9
160°	422.6	422.4	422.2	422.1	421.9	421.8	421.8	421.8	421.8	421.8	422.2
162.5°	429.4	429.2	429.0	428.7	428.6	428.5	428.5	428.6	428.6	428.7	429.1
165°	438.3	438.1	437.8	437.6	437.4	437.3	437.3	437.3	437.3	437.3	437.8
167.5°	445.4	445.1	444.8	444.5	444.2	444.0	444.1	444.2	444.3	444.3	444.8
170°	449.5	449.2	448.9	448.5	448.2	448.1	448.1	448.1	448.1	448.1	448.6
172.5°	452.7	452.3	452.0	451.7	451.3	451.1	451.1	451.1	451.1	451.1	451.7
175°	455.9	455.6	455.3	455.0	454.6	454.5	454.5	454.5	454.5	454.5	455.0
177.5°	457.3	457.0	456.8	456.5	456.3	456.1	456.1	456.1	456.1	456.1	456.5
180°	457.0	457.0	457.0	457.0	457.0	457.0	457.0	457.0	457.0	457.0	457.0



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	338.8	338.8	338.8	338.8	338.8	338.8	338.8	338.8
2.5°	338.1	338.7	339.2	339.4	339.4	339.3	339.2	339.1
5°	337.5	338.3	338.9	339.2	339.1	339.0	338.9	338.8
7.5°	335.6	336.4	337.2	337.5	337.5	337.3	337.2	337.2
10°	333.5	334.3	335.1	335.4	335.3	335.1	334.9	334.8
12.5°	330.7	331.4	332.2	332.5	332.3	332.2	332.0	331.8
15°	325.3	326.1	327.0	327.3	327.3	327.2	327.1	327.0
17.5°	318.4	319.2	319.9	320.2	320.0	320.0	319.9	319.7
20°	313.4	314.1	314.9	315.3	315.4	315.4	315.5	315.6
22.5°	307.8	308.8	309.7	310.2	310.1	310.1	310.1	310.0
25°	298.5	299.6	300.6	301.2	301.2	301.2	301.2	301.2
27.5°	288.8	289.7	290.7	291.1	291.2	291.3	291.3	291.4
30°	282.1	283.1	284.1	284.6	284.6	284.6	284.6	284.6
32.5°	274.9	275.9	276.9	277.6	277.8	278.0	278.2	278.4
35°	264.2	265.4	266.6	267.4	267.8	268.1	268.4	268.7
37.5°	253.0	254.4	255.9	256.7	256.9	257.2	257.5	257.7
40°	245.7	247.1	248.4	249.3	249.6	250.0	250.3	250.6
42.5°	238.0	239.5	241.0	242.0	242.5	242.9	243.4	243.8
45°	226.4	228.0	229.6	230.7	231.3	232.0	232.7	233.3
47.5°	214.8	216.6	218.3	219.4	219.9	220.5	220.9	221.5
50°	206.8	208.7	210.6	211.8	212.4	212.9	213.5	214.1
52.5°	198.7	200.6	202.6	203.9	204.6	205.3	206.0	206.7
55°	186.4	188.6	190.8	192.3	192.9	193.6	194.2	194.9
57.5°	173.9	176.1	178.3	179.8	180.6	181.4	182.2	182.9
60°	165.2	167.5	169.8	171.3	172.2	173.2	174.0	175.0
62.5°	156.9	159.1	161.4	163.0	163.9	164.7	165.6	166.4
65°	143.7	146.2	148.6	150.3	151.1	151.9	152.7	153.5
67.5°	130.6	133.2	135.9	137.7	138.3	139.0	139.7	140.4
70°	121.9	124.5	127.1	128.9	129.7	130.5	131.3	132.1
72.5°	113.1	115.8	118.5	120.3	121.1	121.9	122.8	123.6
75°	99.9	102.6	105.4	107.2	108.1	109.2	110.1	111.1
77.5°	87.5	90.4	93.2	95.0	95.8	96.6	97.3	98.1
80°	79.4	82.2	85.0	86.7	87.6	88.4	89.3	90.1
82.5°	72.0	74.8	77.6	79.4	80.2	81.0	81.8	82.7
85°	61.7	64.5	67.3	69.1	69.9	70.7	71.5	72.3
87.5°	54.4	57.3	60.1	62.0	62.9	63.7	64.6	65.4
90°	56.6	59.7	62.7	64.8	65.8	66.8	67.7	68.7
92.5°	59.1	62.1	65.0	66.9	67.5	68.2	68.8	69.5
95°	68.8	71.7	74.5	76.4	77.2	78.0	78.8	79.7
97.5°	81.0	83.9	86.7	88.5	89.3	90.1	90.9	91.7
100°	90.2	92.8	95.4	97.1	98.2	99.1	100.1	101.1
102.5°	100.8	103.4	106.0	107.7	108.4	109.2	110.0	110.7
105°	117.0	119.3	121.6	123.2	124.1	125.0	125.9	126.7
107.5°	134.6	137.0	139.5	141.1	141.7	142.4	142.9	143.5
110°	146.6	149.1	151.5	153.0	153.5	154.0	154.5	155.0





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CATALOG NUMBER: S123DIW-S340D460U927-4F0-1E-UDD-D1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	158.4	160.8	163.3	164.9	165.5	166.2	166.9	167.6
115°	176.6	178.6	180.7	182.0	182.6	183.2	183.7	184.3
117.5°	194.9	196.9	198.8	199.9	200.3	200.7	201.2	201.6
120°	207.2	209.1	210.9	212.0	212.4	212.8	213.2	213.7
122.5°	219.8	221.3	222.9	223.9	224.3	224.7	225.0	225.4
125°	238.3	239.7	241.1	241.9	242.2	242.4	242.6	243.0
127.5°	256.6	257.8	259.0	259.6	259.8	260.0	260.2	260.4
130°	268.7	270.0	271.2	271.8	271.7	271.6	271.6	271.5
132.5°	280.5	281.6	282.7	283.3	283.4	283.6	283.7	283.8
135°	298.3	299.4	300.6	301.3	301.5	301.7	302.0	302.3
137.5°	315.7	316.6	317.6	318.1	318.2	318.4	318.5	318.5
140°	327.3	328.4	329.5	330.0	329.9	329.7	329.6	329.5
142.5°	337.9	338.9	339.9	340.4	340.4	340.3	340.3	340.3
145°	354.4	355.0	355.5	355.8	355.8	355.8	355.8	355.8
147.5°	370.3	370.4	370.7	370.7	370.4	370.3	370.1	369.9
150°	380.2	380.2	380.2	380.0	379.7	379.4	379.1	378.7
152.5°	389.6	389.8	389.9	389.8	389.4	389.0	388.6	388.2
155°	403.5	403.8	404.1	403.9	403.4	402.8	402.3	401.7
157.5°	415.3	415.7	416.0	415.9	415.5	415.0	414.5	414.2
160°	422.6	423.0	423.4	423.4	423.1	422.8	422.5	422.2
162.5°	429.5	429.9	430.3	430.2	429.8	429.2	428.7	428.2
165°	438.2	438.7	439.2	439.1	438.6	438.0	437.4	436.9
167.5°	445.3	445.8	446.2	446.2	445.8	445.3	444.8	444.3
170°	449.2	449.7	450.3	450.3	449.7	449.2	448.6	448.1
172.5°	452.2	452.7	453.1	453.1	452.6	452.0	451.5	450.9
175°	455.4	455.9	456.4	456.4	455.8	455.3	454.7	454.2
177.5°	456.9	457.3	457.6	457.6	457.2	456.8	456.3	455.8
180°	457.0	457.0	457.0	457.0	457.0	457.0	457.0	457.0

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