

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: P332092-830

Luminaire Tested: **S123DIW-S340D460U830-4F0-1E-UDD-D**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332092-830  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-5,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S123DIW-S340D460U830-4F0-1E-UDD-D  
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 340 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 460 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3094.6 lumens  
Efficiency: N/A  
Efficacy: 134.5 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

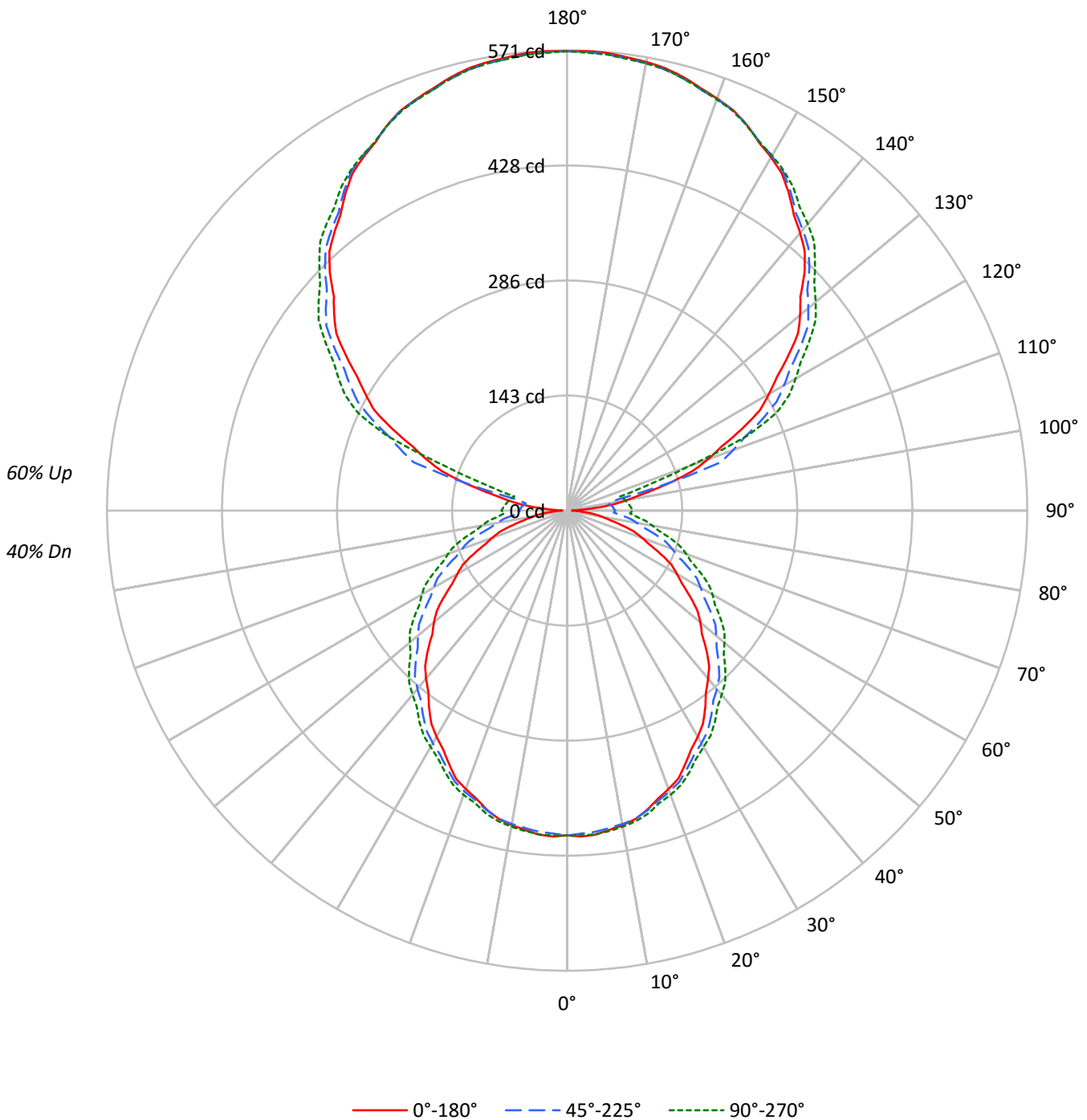
Input Watts (W): 23  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P332092-830

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### Luminous Intensity Polar Plot





TEST NUMBER: P332092-830

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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	105	105	105	105	95	95	95	95	78	78	78	62	62	62	47	47	47	40
1	95	90	86	82	86	82	78	75	67	64	62	53	51	50	40	39	38	32
2	86	78	72	66	78	71	66	61	58	54	51	46	43	41	35	33	31	26
3	78	68	61	55	71	62	56	51	51	46	42	40	37	34	31	28	26	22
4	71	60	52	46	64	55	48	43	45	40	36	36	32	29	27	25	22	18
5	65	54	45	39	59	49	42	36	40	35	31	32	28	25	24	22	19	16
6	60	48	40	34	54	44	37	31	36	31	26	29	25	22	22	19	17	14
7	55	43	35	29	50	39	32	27	33	27	23	26	22	19	20	17	15	12
8	51	39	31	26	47	36	29	24	30	24	20	24	20	17	18	16	13	11
9	48	36	28	23	43	33	26	21	27	22	18	22	18	15	17	14	12	10
10	45	32	25	20	40	30	23	19	25	20	16	20	16	14	16	13	11	9

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

	0°	45°	90°
0°	4339	4339	4339
5°	4353	4230	4232
10°	4315	4133	4112
15°	4259	4022	3980
20°	4179	3896	3836
25°	4080	3751	3684
30°	3980	3620	3529
35°	3867	3481	3406
40°	3760	3356	3274
45°	3641	3235	3169
50°	3525	3116	3054
55°	3393	2993	2948
60°	3266	2869	2842
65°	3138	2736	2714
70°	2941	2586	2582
75°	2693	2416	2450
80°	2412	2249	2299
85°	2145	2133	2211



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	38.2	1.2
10°-20°	108.9	3.5
20°-30°	163.0	5.3
30°-40°	194.6	6.3
40°-50°	203.6	6.6
50°-60°	191.1	6.2
60°-70°	159.6	5.2
70°-80°	114.2	3.7
80°-90°	69.7	2.3
90°-100°	63.4	2.1
100°-110°	130.2	4.2
110°-120°	258.2	8.3
120°-130°	314.1	10.1
130°-140°	328.2	10.6
140°-150°	303.0	9.8
150°-160°	243.5	7.9
160°-170°	157.1	5.1
170°-180°	54.2	1.7
0°-30°	310.1	10.0
0°-40°	504.7	16.3
0°-60°	899.4	29.1
0°-90°	1242.8	40.2
90°-120°	451.8	14.6
90°-150°	1397.0	45.1
90°-180°	1852.0	59.8
0°-180°	3094.6	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	403	403	403	403	403	
5°	404	403	400	403	403	38
15°	384	386	385	389	389	108
25°	347	351	353	358	358	160
35°	299	306	311	318	320	187
45°	244	255	266	274	278	188
55°	186	201	216	228	232	167
65°	129	146	165	178	183	127
75°	70	91	112	126	132	75
85°	22	44	67	81	86	23
90°	6	32	60	76	82	5
95°	31	32	57	73	78	36
105°	130	143	126	67	68	137
115°	239	247	266	281	286	236
125°	335	339	353	363	367	299
135°	416	419	425	434	435	320
145°	480	482	483	487	489	300
155°	528	527	528	529	527	243
165°	557	556	555	558	556	157
175°	570	568	568	571	568	54
180°	570	570	570	570	570	



TEST NUMBER: P332092-830

CATALOG NUMBER: S123DIW-S340D460U830-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	403.1	403.1	403.1	403.1	403.1	403.1	403.1	403.1	403.1	403.1	403.1
2.5°	404.9	404.7	404.4	404.3	404.0	403.6	402.9	402.3	401.7	401.1	401.7
5°	403.6	403.4	403.2	403.0	402.8	402.5	401.8	401.2	400.7	400.1	400.9
7.5°	399.6	399.7	399.7	399.7	399.8	399.5	399.0	398.4	397.8	397.3	398.2
10°	396.2	396.3	396.5	396.7	396.9	396.8	396.2	395.8	395.3	394.8	395.8
12.5°	391.9	392.2	392.5	392.8	393.0	392.9	392.7	392.3	392.0	391.6	392.6
15°	384.3	384.6	384.8	385.1	385.4	385.6	385.4	385.3	385.2	385.1	386.2
17.5°	374.7	375.2	375.8	376.4	376.9	377.2	377.2	377.1	377.1	377.1	378.0
20°	367.6	368.2	368.7	369.4	369.9	370.3	370.5	370.7	370.9	371.1	372.0
22.5°	360.2	360.8	361.4	361.9	362.6	363.0	363.3	363.5	363.8	364.1	365.2
25°	346.9	347.9	348.9	349.9	350.8	351.5	351.8	352.0	352.3	352.7	353.9
27.5°	333.6	334.7	335.8	337.0	338.1	338.9	339.5	340.2	340.8	341.4	342.5
30°	324.1	325.4	326.7	327.9	329.2	330.2	331.0	331.8	332.5	333.4	334.5
32.5°	313.6	315.0	316.4	317.8	319.2	320.5	321.5	322.5	323.6	324.5	325.8
35°	298.6	300.2	301.8	303.3	304.9	306.3	307.6	308.9	310.1	311.4	312.8
37.5°	282.9	284.6	286.3	288.1	289.8	291.5	293.0	294.6	296.2	297.7	299.4
40°	272.3	274.1	275.8	277.6	279.3	281.2	283.1	285.1	287.0	289.0	290.7
42.5°	260.7	262.9	264.9	267.1	269.3	271.4	273.4	275.4	277.5	279.5	281.3
45°	244.2	246.6	248.8	251.2	253.5	255.9	258.4	260.8	263.3	265.7	267.6
47.5°	226.9	229.5	232.1	234.9	237.5	240.3	243.0	245.8	248.5	251.4	253.4
50°	215.7	218.4	221.1	223.9	226.6	229.4	232.4	235.5	238.6	241.6	243.8
52.5°	203.7	206.6	209.4	212.4	215.3	218.4	221.7	225.1	228.4	231.7	234.0
55°	186.2	189.5	192.7	195.9	199.1	202.5	205.9	209.5	213.0	216.5	219.1
57.5°	169.2	172.5	175.9	179.3	182.6	186.2	190.0	193.9	197.7	201.6	204.2
60°	157.2	160.7	164.3	167.8	171.3	175.0	179.1	183.0	187.0	191.1	193.8
62.5°	146.0	149.6	153.2	156.7	160.3	164.3	168.5	172.8	177.0	181.3	183.9
65°	128.7	132.5	136.3	140.1	143.9	148.0	152.2	156.6	160.8	165.1	168.1
67.5°	111.1	115.2	119.2	123.2	127.2	131.5	135.8	140.3	144.6	149.0	152.1
70°	98.8	103.0	107.2	111.4	115.6	120.1	124.7	129.4	134.1	138.7	141.9
72.5°	87.6	91.8	96.0	100.2	104.3	108.9	113.7	118.6	123.4	128.3	131.5
75°	69.8	74.5	79.0	83.6	88.2	92.9	97.8	102.6	107.5	112.4	115.6
77.5°	54.4	59.0	63.6	68.2	72.9	77.7	82.6	87.5	92.4	97.4	100.8
80°	43.5	48.3	53.1	57.9	62.6	67.6	72.6	77.7	82.8	87.8	91.1
82.5°	34.0	38.8	43.7	48.5	53.4	58.4	63.6	68.7	73.9	79.1	82.4
85°	21.5	26.4	31.3	36.2	41.0	46.1	51.3	56.4	61.5	66.7	70.0
87.5°	11.8	16.8	21.9	27.0	32.0	37.1	42.3	47.5	52.8	58.0	61.4
90°	6.1	11.9	17.6	23.3	29.0	35.0	41.2	47.4	53.6	59.8	63.5
92.5°	13.2	17.2	21.3	25.4	29.4	34.4	40.2	46.0	51.8	57.7	61.5
95°	30.6	30.6	30.5	30.5	30.4	33.4	39.1	45.0	50.8	56.6	60.3
97.5°	56.2	58.0	59.7	61.4	63.1	62.8	60.6	58.3	56.2	53.9	57.6
100°	75.5	80.5	85.5	90.6	95.6	92.9	82.8	72.6	62.4	52.2	55.8
102.5°	97.6	101.7	105.8	110.0	114.1	110.5	98.9	87.2	75.6	64.0	64.4
105°	129.7	133.1	136.5	139.9	143.2	142.8	138.5	134.2	130.0	125.6	111.8
107.5°	163.2	166.1	168.9	171.6	174.5	178.6	183.9	189.2	194.5	199.8	190.2
110°	185.6	188.0	190.6	193.1	195.6	199.3	204.2	209.2	214.1	219.0	218.5



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	207.3	209.3	211.5	213.6	215.7	219.2	223.9	228.8	233.6	238.4	240.8
115°	238.9	240.6	242.4	244.1	245.8	248.9	253.3	257.6	262.0	266.4	269.7
117.5°	269.9	271.4	272.8	274.2	275.6	278.1	281.9	285.6	289.4	293.0	296.1
120°	288.9	290.2	291.5	292.8	294.2	296.6	300.1	303.6	307.2	310.7	313.7
122.5°	308.5	309.4	310.4	311.3	312.4	314.5	317.9	321.3	324.8	328.2	330.9
125°	335.0	335.7	336.5	337.2	338.0	340.0	343.2	346.4	349.6	352.8	355.1
127.5°	361.1	361.7	362.4	363.1	363.7	365.4	368.3	371.0	373.8	376.6	378.8
130°	377.4	378.1	378.6	379.3	379.9	381.4	383.8	386.2	388.4	390.8	393.0
132.5°	392.6	393.3	394.1	394.8	395.5	396.8	398.7	400.6	402.4	404.3	406.4
135°	416.3	416.8	417.3	417.7	418.2	419.1	420.6	422.0	423.5	424.9	427.0
137.5°	436.5	437.2	437.8	438.5	439.0	439.8	440.6	441.4	442.2	443.1	445.1
140°	449.7	450.3	450.8	451.4	451.9	452.6	453.2	453.7	454.3	454.9	456.7
142.5°	462.2	462.8	463.3	463.7	464.2	464.7	465.0	465.3	465.6	466.0	467.6
145°	479.8	480.3	480.9	481.5	482.0	482.4	482.6	482.8	483.0	483.1	484.2
147.5°	495.9	496.3	496.7	497.2	497.6	497.9	498.1	498.3	498.5	498.7	499.1
150°	506.1	506.3	506.6	506.9	507.2	507.4	507.6	507.7	507.9	508.1	508.3
152.5°	515.2	515.3	515.5	515.6	515.8	515.9	515.9	516.0	516.1	516.3	516.6
155°	528.0	527.8	527.6	527.5	527.4	527.3	527.4	527.4	527.5	527.6	528.1
157.5°	538.1	538.0	538.0	538.0	538.0	537.9	537.8	537.7	537.6	537.5	538.1
160°	544.1	544.0	543.9	543.8	543.8	543.7	543.6	543.5	543.4	543.3	543.8
162.5°	549.9	549.7	549.4	549.2	548.9	548.7	548.7	548.6	548.5	548.4	549.0
165°	556.9	556.6	556.3	556.0	555.7	555.5	555.4	555.3	555.3	555.2	555.9
167.5°	562.3	561.9	561.6	561.2	560.8	560.6	560.6	560.6	560.6	560.6	561.4
170°	565.3	565.0	564.6	564.2	563.8	563.6	563.6	563.6	563.6	563.6	564.4
172.5°	567.3	566.9	566.5	566.0	565.5	565.3	565.4	565.5	565.6	565.6	566.4
175°	570.0	569.5	569.0	568.5	568.1	567.9	568.0	568.1	568.2	568.3	568.9
177.5°	570.6	570.2	569.9	569.5	569.1	569.0	569.1	569.1	569.2	569.3	569.9
180°	570.0	570.0	570.0	570.0	570.0	570.0	570.0	570.0	570.0	570.0	570.0



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	403.1	403.1	403.1	403.1	403.1	403.1	403.1	403.1
2.5°	402.3	402.9	403.6	403.8	403.8	403.7	403.6	403.5
5°	401.6	402.5	403.2	403.6	403.5	403.3	403.2	403.1
7.5°	399.3	400.2	401.1	401.6	401.5	401.3	401.2	401.1
10°	396.8	397.8	398.7	399.1	398.9	398.7	398.5	398.3
12.5°	393.4	394.4	395.2	395.6	395.4	395.2	395.0	394.8
15°	387.1	388.0	389.1	389.5	389.4	389.3	389.2	389.1
17.5°	378.8	379.8	380.6	381.0	380.8	380.7	380.6	380.4
20°	372.9	373.7	374.7	375.1	375.2	375.3	375.4	375.5
22.5°	366.3	367.4	368.5	369.1	369.0	368.9	368.9	368.8
25°	355.2	356.5	357.7	358.4	358.4	358.4	358.4	358.4
27.5°	343.6	344.7	345.8	346.4	346.5	346.6	346.6	346.7
30°	335.6	336.9	338.0	338.6	338.6	338.6	338.6	338.6
32.5°	327.1	328.3	329.5	330.3	330.5	330.7	331.0	331.2
35°	314.3	315.8	317.3	318.2	318.6	319.0	319.3	319.7
37.5°	301.0	302.7	304.4	305.4	305.7	306.0	306.3	306.6
40°	292.3	294.0	295.6	296.6	297.0	297.5	297.8	298.2
42.5°	283.1	284.9	286.7	287.9	288.5	289.0	289.5	290.1
45°	269.4	271.3	273.1	274.5	275.2	276.0	276.8	277.6
47.5°	255.5	257.7	259.8	261.1	261.6	262.3	262.9	263.5
50°	246.0	248.3	250.5	252.0	252.7	253.4	254.0	254.8
52.5°	236.4	238.7	241.0	242.6	243.5	244.3	245.1	245.9
55°	221.8	224.4	227.1	228.8	229.5	230.4	231.1	231.9
57.5°	206.9	209.5	212.2	214.0	214.9	215.8	216.8	217.6
60°	196.5	199.3	202.0	203.9	204.9	206.0	207.1	208.2
62.5°	186.6	189.4	192.1	194.0	195.0	196.0	197.0	198.0
65°	171.0	173.9	176.8	178.8	179.7	180.8	181.7	182.7
67.5°	155.3	158.5	161.7	163.8	164.6	165.4	166.3	167.0
70°	145.1	148.2	151.3	153.4	154.3	155.2	156.3	157.2
72.5°	134.6	137.8	141.0	143.2	144.1	145.1	146.1	147.0
75°	118.9	122.1	125.4	127.5	128.7	129.9	131.0	132.2
77.5°	104.2	107.5	110.9	113.0	114.0	114.9	115.7	116.7
80°	94.4	97.8	101.1	103.2	104.2	105.2	106.2	107.2
82.5°	85.7	89.0	92.4	94.4	95.5	96.4	97.4	98.4
85°	73.4	76.7	80.0	82.2	83.1	84.2	85.1	86.1
87.5°	64.8	68.1	71.5	73.8	74.7	75.8	76.8	77.9
90°	67.2	70.9	74.6	77.0	78.1	79.4	80.5	81.6
92.5°	65.3	69.2	73.0	75.5	76.4	77.5	78.5	79.5
95°	64.0	67.7	71.4	73.7	74.6	75.6	76.6	77.6
97.5°	61.3	64.9	68.6	71.0	72.0	73.1	74.2	75.2
100°	59.4	63.0	66.5	68.8	69.9	71.0	72.0	73.1
102.5°	64.8	65.2	65.6	66.4	67.6	68.7	69.8	71.0
105°	97.8	83.9	69.9	63.5	64.7	65.7	66.7	67.9
107.5°	180.7	171.1	161.5	150.8	139.1	127.4	115.7	104.1
110°	217.9	217.4	216.8	210.2	197.6	184.8	172.2	159.5





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CATALOG NUMBER: S123DIW-S340D460U830-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	243.4	245.9	248.4	248.6	246.7	244.7	242.7	240.7
115°	272.9	276.2	279.5	281.7	282.9	284.0	285.2	286.3
117.5°	299.3	302.3	305.4	307.4	308.2	309.1	309.8	310.7
120°	316.6	319.6	322.6	324.4	325.2	325.8	326.5	327.2
122.5°	333.6	336.3	338.9	340.7	341.5	342.2	343.0	343.7
125°	357.3	359.6	361.7	363.4	364.2	365.0	366.0	366.8
127.5°	381.1	383.3	385.6	386.9	387.4	387.9	388.3	388.8
130°	395.2	397.5	399.7	401.1	401.4	401.8	402.2	402.6
132.5°	408.6	410.8	412.8	414.2	414.5	414.9	415.4	415.8
135°	429.0	431.0	433.1	434.2	434.4	434.6	434.8	435.0
137.5°	447.0	449.0	451.0	452.1	452.5	452.8	453.1	453.4
140°	458.5	460.3	462.2	463.3	463.6	463.9	464.2	464.5
142.5°	469.2	470.8	472.4	473.3	473.5	473.8	474.0	474.3
145°	485.1	486.1	487.0	487.8	488.1	488.5	488.9	489.3
147.5°	499.5	499.9	500.4	500.5	500.5	500.4	500.3	500.2
150°	508.5	508.7	508.9	509.0	508.9	508.8	508.7	508.6
152.5°	517.0	517.3	517.6	517.6	517.3	516.8	516.4	516.0
155°	528.6	529.0	529.5	529.4	528.9	528.3	527.7	527.3
157.5°	538.7	539.2	539.8	539.7	538.9	538.3	537.5	536.8
160°	544.4	545.0	545.5	545.5	544.9	544.2	543.6	542.9
162.5°	549.7	550.4	550.9	551.0	550.4	549.8	549.2	548.7
165°	556.7	557.4	558.2	558.2	557.5	556.9	556.3	555.6
167.5°	562.1	562.8	563.5	563.5	562.8	562.1	561.4	560.6
170°	565.1	565.9	566.7	566.7	565.9	565.1	564.4	563.6
172.5°	567.1	567.9	568.6	568.6	567.8	566.9	566.2	565.3
175°	569.6	570.2	570.9	570.9	570.1	569.4	568.6	567.9
177.5°	570.5	571.1	571.7	571.7	570.9	570.1	569.4	568.6
180°	570.0	570.0	570.0	570.0	570.0	570.0	570.0	570.0

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