

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: P332092-840

Luminaire Tested: **S123DIW-S340D460U840-4F0-1E-UDD-D**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332092-840
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-S340D460U840-4F0-1E-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: 3315.6 lumens
Efficiency: N/A
Efficacy: 144.2 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

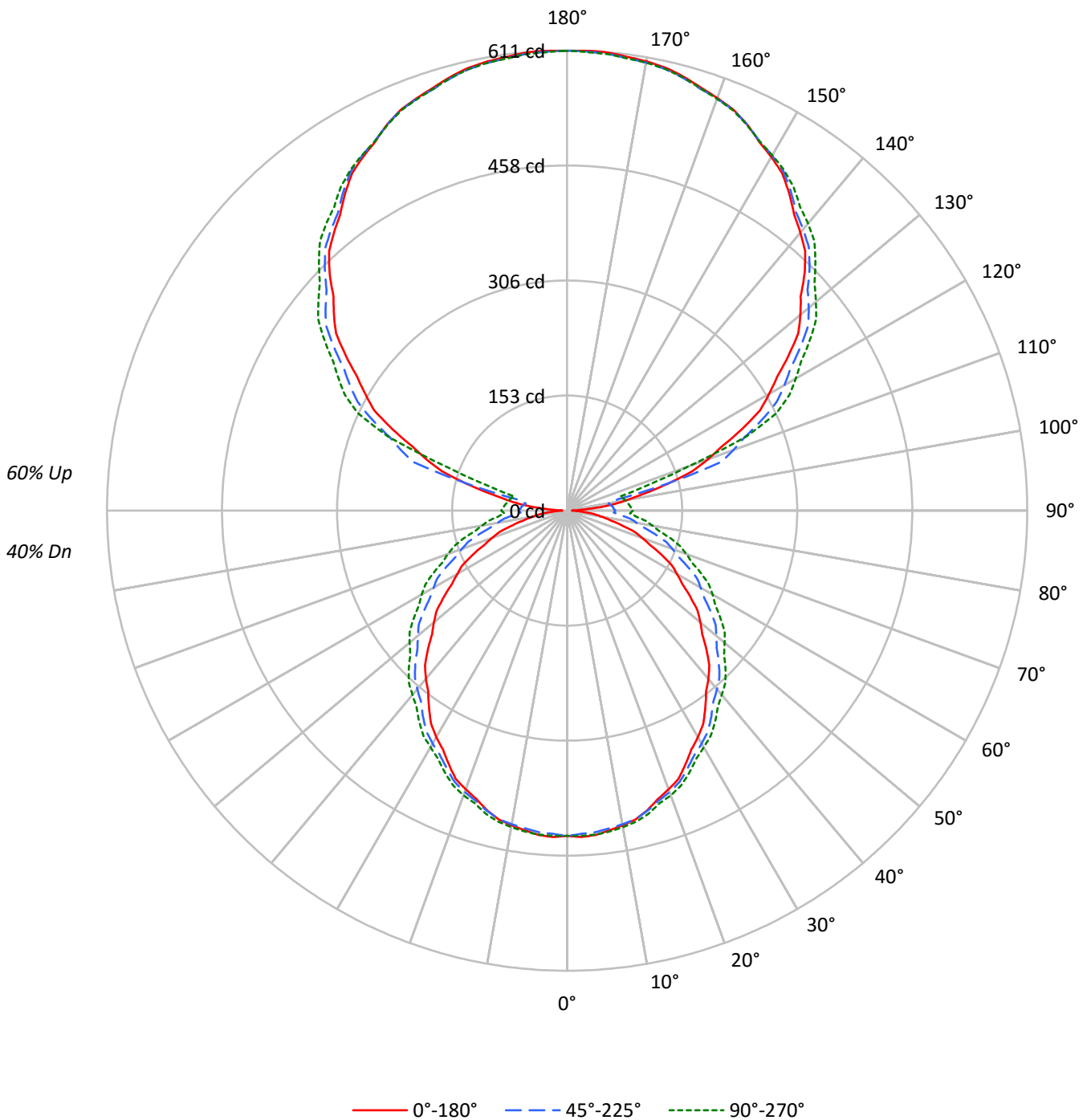
Input Watts (W): 23
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4649	4649	4649
5°	4664	4533	4534
10°	4622	4428	4406
15°	4562	4309	4265
20°	4477	4174	4110
25°	4372	4019	3947
30°	4265	3879	3780
35°	4143	3731	3649
40°	4030	3595	3508
45°	3902	3466	3395
50°	3776	3338	3272
55°	3636	3207	3158
60°	3499	3074	3045
65°	3360	2931	2907
70°	3149	2772	2766
75°	2886	2590	2626
80°	2583	2410	2462
85°	2294	2286	2367



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	40.9	1.2
10°-20°	116.7	3.5
20°-30°	174.6	5.3
30°-40°	208.5	6.3
40°-50°	218.1	6.6
50°-60°	204.7	6.2
60°-70°	171.0	5.2
70°-80°	122.3	3.7
80°-90°	74.7	2.3
90°-100°	68.0	2.1
100°-110°	139.5	4.2
110°-120°	276.6	8.3
120°-130°	336.5	10.1
130°-140°	351.6	10.6
140°-150°	324.6	9.8
150°-160°	260.9	7.9
160°-170°	168.4	5.1
170°-180°	58.0	1.7
0°-30°	332.3	10.0
0°-40°	540.8	16.3
0°-60°	963.6	29.1
0°-90°	1331.6	40.2
90°-120°	484.1	14.6
90°-150°	1496.8	45.1
90°-180°	1984.0	59.8
0°-180°	3315.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	432	432	432	432	432	
5°	432	431	429	432	432	41
15°	412	413	413	417	417	116
25°	372	376	378	384	384	171
35°	320	327	334	340	342	200
45°	262	273	285	293	297	202
55°	200	215	232	244	248	179
65°	138	156	177	191	196	136
75°	75	97	120	135	142	80
85°	23	47	72	87	92	24
90°	7	34	64	81	88	5
95°	33	34	61	78	83	38
105°	139	153	135	72	73	147
115°	256	265	285	301	307	253
125°	359	363	378	388	393	321
135°	446	449	455	465	466	343
145°	514	517	518	522	524	322
155°	566	565	565	567	565	261
165°	597	595	595	598	595	169
175°	611	608	609	612	608	58
180°	611	611	611	611	611	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	431.9	431.9	431.9	431.9	431.9	431.9	431.9	431.9	431.9	431.9	431.9
2.5°	433.8	433.6	433.3	433.1	432.8	432.4	431.7	431.0	430.4	429.7	430.4
5°	432.4	432.2	432.0	431.8	431.6	431.2	430.5	429.9	429.3	428.7	429.5
7.5°	428.2	428.3	428.3	428.3	428.4	428.1	427.5	426.9	426.3	425.7	426.7
10°	424.4	424.6	424.9	425.1	425.3	425.2	424.5	424.0	423.5	423.0	424.0
12.5°	419.9	420.2	420.5	420.8	421.1	421.0	420.7	420.3	420.0	419.6	420.6
15°	411.7	412.0	412.3	412.6	412.9	413.1	412.9	412.8	412.7	412.6	413.7
17.5°	401.4	402.0	402.6	403.2	403.8	404.1	404.1	404.0	404.0	404.0	405.0
20°	393.8	394.5	395.1	395.8	396.4	396.8	397.0	397.2	397.4	397.6	398.6
22.5°	386.0	386.6	387.2	387.8	388.5	388.9	389.2	389.5	389.8	390.1	391.3
25°	371.7	372.7	373.9	374.9	375.9	376.6	376.9	377.2	377.5	377.9	379.2
27.5°	357.4	358.6	359.8	361.0	362.2	363.1	363.8	364.5	365.2	365.8	367.0
30°	347.3	348.6	350.0	351.3	352.7	353.8	354.7	355.5	356.3	357.2	358.4
32.5°	336.0	337.5	339.0	340.5	342.0	343.4	344.5	345.6	346.7	347.7	349.1
35°	319.9	321.6	323.4	325.0	326.7	328.2	329.5	330.9	332.2	333.7	335.2
37.5°	303.1	304.9	306.8	308.7	310.5	312.4	314.0	315.7	317.4	319.0	320.8
40°	291.8	293.7	295.5	297.4	299.2	301.2	303.4	305.5	307.5	309.6	311.4
42.5°	279.3	281.7	283.9	286.2	288.5	290.7	293.0	295.1	297.3	299.4	301.4
45°	261.7	264.2	266.6	269.1	271.7	274.2	276.8	279.4	282.1	284.7	286.7
47.5°	243.1	245.9	248.7	251.7	254.5	257.4	260.3	263.4	266.3	269.3	271.6
50°	231.1	234.0	236.9	239.8	242.8	245.8	249.0	252.4	255.6	258.8	261.3
52.5°	218.2	221.4	224.4	227.5	230.7	234.0	237.5	241.2	244.7	248.2	250.7
55°	199.5	203.0	206.4	209.8	213.3	216.9	220.7	224.5	228.2	232.0	234.8
57.5°	181.3	184.8	188.4	192.1	195.6	199.5	203.6	207.7	211.9	216.0	218.8
60°	168.4	172.2	176.0	179.8	183.5	187.5	191.9	196.1	200.4	204.7	207.6
62.5°	156.4	160.3	164.1	167.9	171.8	176.0	180.6	185.1	189.7	194.2	197.0
65°	137.8	142.0	146.0	150.1	154.2	158.5	163.1	167.7	172.3	176.9	180.1
67.5°	119.1	123.4	127.7	132.0	136.3	140.9	145.5	150.3	154.9	159.7	163.0
70°	105.8	110.4	114.8	119.4	123.8	128.7	133.6	138.7	143.7	148.7	152.1
72.5°	93.8	98.4	102.8	107.3	111.8	116.6	121.8	127.0	132.2	137.4	140.9
75°	74.8	79.8	84.6	89.6	94.5	99.6	104.8	110.0	115.2	120.5	123.9
77.5°	58.3	63.2	68.2	73.1	78.1	83.2	88.5	93.7	99.0	104.3	108.0
80°	46.6	51.7	56.9	62.0	67.1	72.4	77.8	83.2	88.7	94.1	97.7
82.5°	36.5	41.6	46.9	52.0	57.3	62.6	68.2	73.6	79.2	84.7	88.3
85°	23.0	28.3	33.5	38.8	43.9	49.4	54.9	60.4	65.9	71.5	75.0
87.5°	12.6	18.0	23.4	28.9	34.2	39.8	45.3	50.9	56.6	62.1	65.7
90°	6.6	12.7	18.9	24.9	31.1	37.5	44.1	50.8	57.5	64.0	68.1
92.5°	14.1	18.5	22.8	27.2	31.5	36.9	43.0	49.3	55.5	61.8	65.8
95°	32.8	32.8	32.7	32.7	32.6	35.7	41.9	48.2	54.4	60.7	64.6
97.5°	60.2	62.1	63.9	65.7	67.6	67.3	64.9	62.5	60.2	57.8	61.7
100°	80.9	86.2	91.6	97.0	102.4	99.6	88.7	77.8	66.9	55.9	59.8
102.5°	104.5	109.0	113.4	117.9	122.3	118.4	105.9	93.4	81.0	68.6	69.0
105°	139.0	142.6	146.2	149.9	153.4	153.0	148.3	143.8	139.3	134.6	119.8
107.5°	174.9	177.9	181.0	183.9	186.9	191.4	197.0	202.7	208.4	214.1	203.8
110°	198.8	201.5	204.2	206.9	209.5	213.6	218.8	224.2	229.4	234.7	234.1



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	222.1	224.3	226.6	228.8	231.2	234.9	239.9	245.1	250.2	255.4	258.0
115°	256.0	257.8	259.7	261.6	263.4	266.7	271.4	276.0	280.7	285.4	288.9
117.5°	289.2	290.7	292.3	293.8	295.3	298.0	302.1	306.0	310.0	314.0	317.3
120°	309.5	310.9	312.4	313.8	315.2	317.8	321.5	325.3	329.1	332.9	336.1
122.5°	330.5	331.5	332.5	333.6	334.7	337.0	340.6	344.3	348.0	351.6	354.6
125°	358.9	359.7	360.5	361.3	362.1	364.3	367.7	371.1	374.6	378.0	380.4
127.5°	386.9	387.6	388.3	389.0	389.7	391.5	394.6	397.5	400.5	403.5	405.9
130°	404.3	405.1	405.7	406.4	407.1	408.7	411.2	413.7	416.2	418.7	421.1
132.5°	420.6	421.4	422.2	423.0	423.7	425.2	427.2	429.2	431.1	433.1	435.5
135°	446.1	446.6	447.1	447.6	448.1	449.1	450.6	452.1	453.7	455.2	457.5
137.5°	467.7	468.4	469.1	469.8	470.4	471.2	472.1	472.9	473.8	474.7	476.9
140°	481.8	482.4	483.0	483.6	484.2	484.9	485.5	486.1	486.8	487.4	489.3
142.5°	495.2	495.8	496.3	496.9	497.4	497.9	498.2	498.6	498.9	499.3	501.0
145°	514.0	514.6	515.2	515.8	516.4	516.8	517.1	517.3	517.5	517.7	518.8
147.5°	531.3	531.8	532.2	532.7	533.1	533.5	533.7	533.9	534.1	534.3	534.7
150°	542.2	542.5	542.8	543.1	543.4	543.6	543.8	544.0	544.2	544.4	544.6
152.5°	552.0	552.1	552.3	552.4	552.6	552.7	552.8	552.9	553.0	553.2	553.5
155°	565.7	565.5	565.3	565.2	565.0	564.9	565.0	565.1	565.2	565.3	565.8
157.5°	576.5	576.4	576.4	576.4	576.4	576.3	576.2	576.1	576.0	575.9	576.5
160°	583.0	582.9	582.8	582.7	582.6	582.5	582.4	582.3	582.2	582.1	582.7
162.5°	589.2	589.0	588.7	588.4	588.1	587.9	587.8	587.7	587.6	587.5	588.2
165°	596.6	596.3	596.0	595.7	595.4	595.2	595.1	595.0	594.9	594.8	595.6
167.5°	602.5	602.1	601.7	601.3	600.9	600.7	600.7	600.7	600.7	600.7	601.5
170°	605.7	605.3	604.9	604.5	604.1	603.9	603.9	603.9	603.9	603.9	604.7
172.5°	607.8	607.4	606.9	606.4	605.9	605.7	605.8	605.9	606.0	606.0	606.8
175°	610.7	610.2	609.7	609.2	608.6	608.4	608.5	608.6	608.7	608.8	609.6
177.5°	611.4	611.0	610.6	610.2	609.8	609.7	609.8	609.8	609.9	610.0	610.6
180°	610.7	610.7	610.7	610.7	610.7	610.7	610.7	610.7	610.7	610.7	610.7



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	431.9	431.9	431.9	431.9	431.9	431.9	431.9	431.9
2.5°	431.0	431.7	432.4	432.6	432.6	432.5	432.4	432.3
5°	430.3	431.2	432.0	432.4	432.3	432.1	432.0	431.9
7.5°	427.8	428.8	429.8	430.3	430.2	430.0	429.9	429.8
10°	425.2	426.2	427.2	427.6	427.4	427.2	427.0	426.8
12.5°	421.5	422.5	423.4	423.8	423.6	423.4	423.2	423.0
15°	414.8	415.8	416.9	417.3	417.2	417.1	417.0	416.9
17.5°	405.9	406.9	407.8	408.2	408.0	407.9	407.8	407.6
20°	399.5	400.4	401.4	401.9	402.0	402.1	402.2	402.3
22.5°	392.4	393.6	394.9	395.5	395.4	395.3	395.3	395.2
25°	380.5	381.9	383.2	384.0	384.0	384.0	384.0	384.0
27.5°	368.1	369.3	370.5	371.1	371.2	371.3	371.3	371.4
30°	359.6	360.9	362.1	362.7	362.7	362.7	362.7	362.7
32.5°	350.4	351.7	353.0	353.9	354.2	354.4	354.7	354.9
35°	336.8	338.3	339.9	340.9	341.3	341.7	342.1	342.5
37.5°	322.6	324.4	326.2	327.2	327.5	327.9	328.2	328.5
40°	313.2	315.0	316.7	317.8	318.2	318.7	319.1	319.5
42.5°	303.4	305.3	307.2	308.5	309.1	309.6	310.2	310.8
45°	288.6	290.6	292.7	294.1	294.9	295.7	296.6	297.4
47.5°	273.8	276.1	278.3	279.7	280.3	281.0	281.7	282.4
50°	263.6	266.0	268.4	270.0	270.7	271.5	272.2	273.0
52.5°	253.3	255.7	258.2	259.9	260.8	261.8	262.6	263.5
55°	237.6	240.4	243.3	245.1	245.9	246.8	247.6	248.4
57.5°	221.7	224.5	227.3	229.2	230.2	231.3	232.3	233.2
60°	210.6	213.5	216.4	218.4	219.5	220.8	221.9	223.1
62.5°	200.0	202.9	205.8	207.8	208.9	210.0	211.1	212.2
65°	183.2	186.3	189.5	191.6	192.6	193.7	194.7	195.7
67.5°	166.4	169.9	173.3	175.5	176.3	177.2	178.1	178.9
70°	155.4	158.8	162.1	164.3	165.3	166.3	167.4	168.4
72.5°	144.2	147.6	151.1	153.4	154.4	155.4	156.5	157.5
75°	127.3	130.8	134.3	136.6	137.8	139.2	140.4	141.7
77.5°	111.6	115.2	118.9	121.1	122.1	123.1	124.0	125.0
80°	101.2	104.8	108.4	110.6	111.7	112.7	113.8	114.8
82.5°	91.8	95.3	99.0	101.2	102.3	103.3	104.3	105.4
85°	78.7	82.2	85.7	88.1	89.1	90.2	91.2	92.2
87.5°	69.4	73.0	76.6	79.1	80.1	81.2	82.3	83.4
90°	72.0	75.9	79.9	82.5	83.7	85.0	86.2	87.5
92.5°	70.0	74.1	78.3	80.9	81.9	83.0	84.1	85.1
95°	68.6	72.5	76.4	79.0	80.0	81.0	82.1	83.1
97.5°	65.6	69.6	73.5	76.0	77.2	78.4	79.5	80.6
100°	63.6	67.5	71.3	73.7	74.9	76.0	77.2	78.4
102.5°	69.5	69.9	70.3	71.2	72.4	73.6	74.8	76.0
105°	104.8	89.9	74.9	68.1	69.3	70.4	71.5	72.7
107.5°	193.6	183.3	173.0	161.6	149.1	136.5	124.0	111.5
110°	233.5	232.9	232.3	225.2	211.7	198.0	184.5	170.9



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CATALOG NUMBER: S123DIW-S340D460U840-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	260.7	263.5	266.1	266.4	264.3	262.2	260.0	257.9
115°	292.4	295.9	299.4	301.8	303.1	304.3	305.6	306.8
117.5°	320.6	323.9	327.2	329.3	330.2	331.1	331.9	332.9
120°	339.2	342.4	345.7	347.6	348.4	349.1	349.8	350.5
122.5°	357.4	360.3	363.1	365.1	365.9	366.7	367.5	368.3
125°	382.8	385.3	387.6	389.3	390.2	391.1	392.1	393.0
127.5°	408.3	410.7	413.1	414.5	415.1	415.6	416.1	416.6
130°	423.4	425.9	428.3	429.7	430.1	430.5	430.9	431.3
132.5°	437.8	440.1	442.3	443.7	444.1	444.5	445.0	445.5
135°	459.7	461.8	464.0	465.2	465.4	465.6	465.9	466.1
137.5°	479.0	481.1	483.2	484.4	484.8	485.1	485.4	485.7
140°	491.3	493.2	495.2	496.3	496.8	497.1	497.4	497.7
142.5°	502.7	504.4	506.1	507.2	507.4	507.7	507.9	508.2
145°	519.8	520.8	521.8	522.6	523.0	523.4	523.8	524.2
147.5°	535.2	535.6	536.1	536.2	536.2	536.1	536.0	535.9
150°	544.8	545.0	545.2	545.3	545.2	545.1	545.0	544.9
152.5°	553.9	554.2	554.6	554.6	554.2	553.7	553.3	552.9
155°	566.3	566.8	567.3	567.2	566.6	566.0	565.4	564.9
157.5°	577.1	577.7	578.3	578.2	577.4	576.7	575.9	575.1
160°	583.3	583.9	584.5	584.5	583.8	583.1	582.4	581.7
162.5°	589.0	589.7	590.3	590.4	589.7	589.1	588.4	587.8
165°	596.4	597.2	598.0	598.0	597.3	596.7	596.0	595.3
167.5°	602.3	603.0	603.8	603.8	603.0	602.3	601.5	600.7
170°	605.5	606.3	607.1	607.1	606.3	605.5	604.7	603.9
172.5°	607.6	608.4	609.3	609.3	608.3	607.4	606.6	605.7
175°	610.3	611.0	611.7	611.7	610.9	610.1	609.3	608.4
177.5°	611.3	611.9	612.6	612.5	611.7	610.9	610.1	609.3
180°	610.7	610.7	610.7	610.7	610.7	610.7	610.7	610.7

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