

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: P331922-830

Luminaire Tested: **S123DIP-S560D585U830-4F0-1E-UDD-D**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331922-830  
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: S123DIP-S560D585U830-4F0-1E-UDD-D  
Description: DEFINE 3 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 560 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 585 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4435.9 lumens  
Efficiency: N/A  
Efficacy: 135.2 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

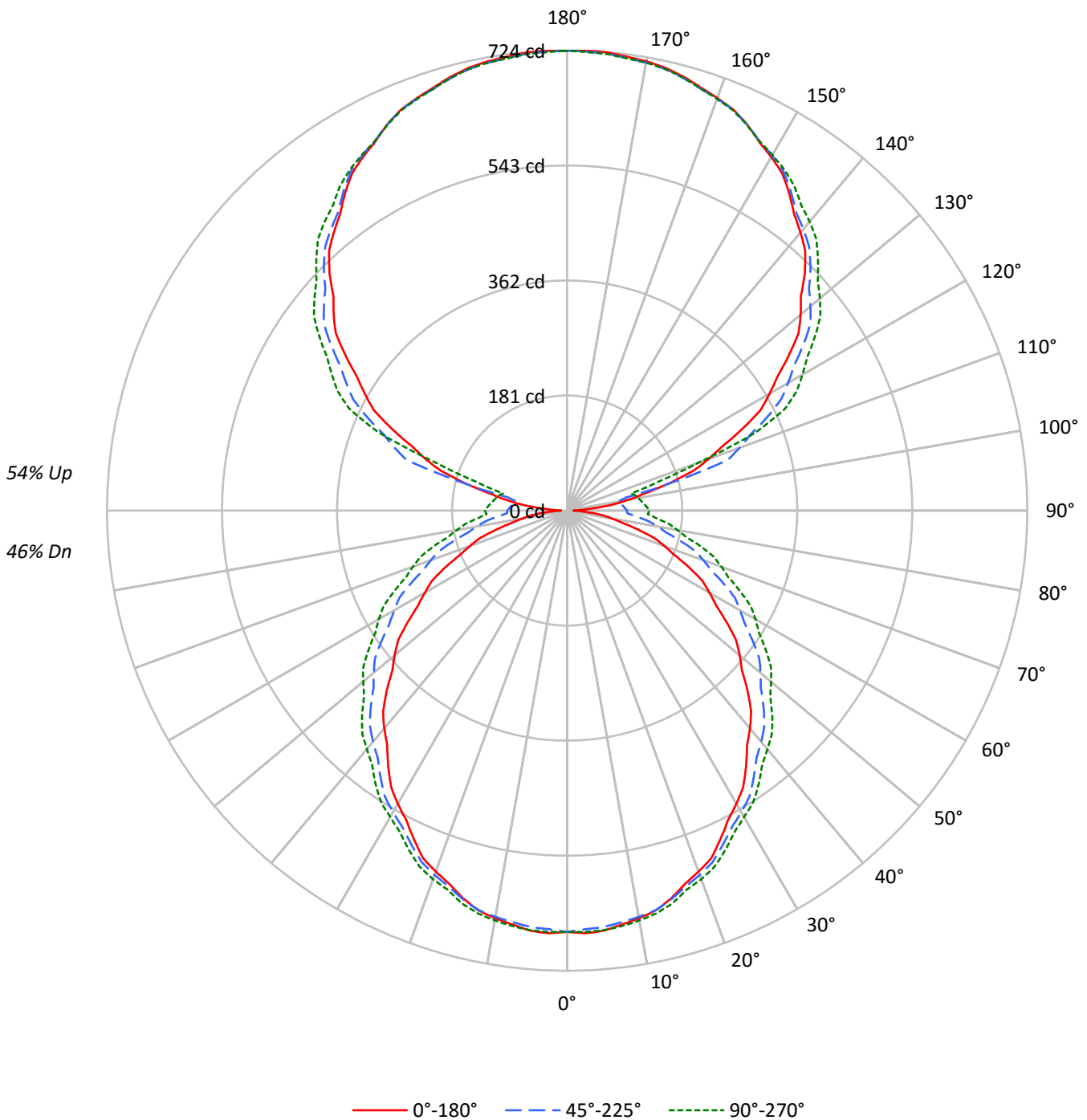
Input Watts (W): 32.8  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





TEST NUMBER: P331922-830

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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	106	106	106	106	97	97	97	97	81	81	81		66	66	66		52	52	52	46
1	96	91	87	83	88	84	80	77	70	67	65		57	55	53		45	44	42	37
2	87	79	73	67	79	73	67	62	60	56	53		49	46	44		39	37	35	30
3	79	69	62	55	72	64	57	51	53	48	44		43	40	36		34	32	29	25
4	72	61	53	47	66	56	49	43	47	41	37		38	34	31		30	27	25	21
5	66	54	46	40	60	50	43	37	42	36	32		34	30	27		27	24	22	18
6	61	48	40	34	55	45	37	32	38	32	28		31	27	23		25	21	19	16
7	56	44	36	30	51	40	33	28	34	28	24		28	24	20		22	19	17	14
8	52	40	32	26	48	37	30	25	31	25	21		26	21	18		21	17	15	12
9	48	36	28	23	44	33	27	22	28	23	19		24	19	16		19	16	13	11
10	45	33	26	21	41	31	24	20	26	21	17		22	18	15		18	14	12	10

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

	0°	45°	90°
0°	7134	7134	7134
5°	7156	6954	6959
10°	7093	6795	6761
15°	7001	6612	6544
20°	6871	6405	6306
25°	6709	6166	6056
30°	6544	5951	5803
35°	6359	5723	5601
40°	6181	5515	5382
45°	5986	5318	5210
50°	5793	5121	5019
55°	5578	4919	4848
60°	5369	4716	4670
65°	5156	4499	4462
70°	4837	4254	4245
75°	4430	3973	4029
80°	3958	3698	3779
85°	3521	3508	3633



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	62.8	1.4
10°-20°	179.1	4.0
20°-30°	267.9	6.0
30°-40°	319.9	7.2
40°-50°	334.7	7.5
50°-60°	314.1	7.1
60°-70°	262.3	5.9
70°-80°	187.7	4.2
80°-90°	114.0	2.6
90°-100°	96.5	2.2
100°-110°	177.0	4.0
110°-120°	335.6	7.6
120°-130°	403.2	9.1
130°-140°	418.6	9.4
140°-150°	385.1	8.7
150°-160°	309.1	7.0
160°-170°	199.5	4.5
170°-180°	68.7	1.5
0°-30°	509.8	11.5
0°-40°	829.7	18.7
0°-60°	1478.6	33.3
0°-90°	2042.6	46.0
90°-120°	609.2	13.7
90°-150°	1816.0	40.9
90°-180°	2393.0	53.9
0°-180°	4435.9	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	663	663	663	663	663	
5°	664	662	658	663	663	63
15°	632	634	633	640	640	178
25°	570	577	580	589	589	263
35°	491	502	512	522	526	307
45°	401	419	437	450	456	310
55°	306	330	356	375	381	274
65°	212	240	272	292	300	209
75°	115	149	185	208	217	123
85°	35	72	110	133	142	37
90°	10	51	94	120	130	8
95°	41	49	88	113	122	47
105°	166	187	172	102	104	176
115°	304	317	347	369	378	300
125°	426	431	453	469	476	380
135°	529	532	541	555	558	407
145°	609	612	613	620	623	381
155°	670	669	670	672	669	309
165°	707	705	705	709	705	200
175°	724	721	721	725	721	69
180°	724	724	724	724	724	



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CATALOG NUMBER: S123DIP-S560D585U830-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	662.8	662.8	662.8	662.8	662.8	662.8	662.8	662.8	662.8	662.8	662.8
2.5°	665.7	665.3	665.0	664.5	664.1	663.5	662.4	661.4	660.3	659.3	660.3
5°	663.5	663.2	662.9	662.6	662.2	661.6	660.6	659.7	658.7	657.7	659.0
7.5°	657.0	657.0	657.1	657.2	657.3	656.9	655.9	655.0	654.0	653.1	654.7
10°	651.3	651.6	651.9	652.2	652.5	652.3	651.5	650.7	649.9	649.1	650.7
12.5°	644.3	644.8	645.3	645.6	646.1	646.1	645.5	645.0	644.4	643.9	645.4
15°	631.8	632.3	632.7	633.2	633.7	633.9	633.7	633.5	633.4	633.2	634.8
17.5°	615.9	616.8	617.8	618.8	619.7	620.2	620.1	620.0	620.0	619.9	621.3
20°	604.4	605.3	606.2	607.2	608.1	608.8	609.2	609.4	609.7	610.1	611.5
22.5°	592.2	593.1	594.1	595.1	596.1	596.7	597.2	597.7	598.1	598.5	600.4
25°	570.4	572.0	573.6	575.2	576.8	577.9	578.3	578.8	579.3	579.8	581.8
27.5°	548.5	550.3	552.1	553.9	555.7	557.1	558.2	559.2	560.2	561.3	563.1
30°	532.8	534.9	537.0	539.1	541.2	542.9	544.1	545.4	546.7	548.0	550.0
32.5°	515.5	517.8	520.2	522.5	524.9	526.9	528.6	530.2	531.9	533.6	535.6
35°	491.0	493.5	496.1	498.7	501.2	503.6	505.7	507.7	509.8	511.9	514.3
37.5°	465.0	467.9	470.7	473.6	476.5	479.3	481.8	484.4	486.9	489.6	492.3
40°	447.6	450.5	453.5	456.3	459.2	462.2	465.4	468.6	471.8	475.0	477.8
42.5°	428.6	432.2	435.6	439.1	442.7	446.1	449.5	452.8	456.2	459.5	462.5
45°	401.4	405.3	409.2	413.0	416.8	420.8	424.8	428.8	432.8	436.8	439.9
47.5°	373.0	377.4	381.7	386.1	390.4	394.9	399.5	404.1	408.7	413.3	416.7
50°	354.5	359.0	363.4	368.0	372.5	377.2	382.2	387.2	392.1	397.1	400.8
52.5°	334.9	339.6	344.4	349.1	353.8	359.0	364.5	369.9	375.4	381.0	384.7
55°	306.1	311.4	316.7	322.0	327.3	332.8	338.7	344.4	350.2	355.9	360.2
57.5°	278.1	283.6	289.2	294.6	300.2	306.1	312.5	318.8	325.1	331.4	335.7
60°	258.4	264.3	270.0	275.8	281.5	287.8	294.4	301.0	307.5	314.1	318.6
62.5°	240.0	245.9	251.8	257.7	263.6	270.0	277.0	284.0	291.0	297.9	302.4
65°	211.5	217.8	224.0	230.4	236.6	243.3	250.3	257.3	264.4	271.5	276.3
67.5°	182.7	189.4	196.0	202.6	209.2	216.1	223.4	230.5	237.7	244.9	250.2
70°	162.5	169.4	176.3	183.1	190.0	197.4	205.0	212.7	220.5	228.2	233.3
72.5°	143.9	150.9	157.8	164.7	171.5	179.0	186.9	194.9	202.8	210.8	216.1
75°	114.8	122.3	129.9	137.4	145.0	152.8	160.8	168.8	176.8	184.8	190.1
77.5°	89.4	97.0	104.6	112.2	119.8	127.6	135.7	143.8	151.9	160.0	165.6
80°	71.4	79.4	87.2	95.1	102.9	111.0	119.3	127.7	136.1	144.4	149.9
82.5°	55.9	63.9	71.8	79.8	87.8	96.0	104.5	113.0	121.5	130.0	135.4
85°	35.3	43.4	51.5	59.5	67.5	75.7	84.3	92.7	101.2	109.7	115.2
87.5°	19.3	27.5	35.8	44.0	52.2	60.6	69.1	77.6	86.1	94.5	100.1
90°	9.9	18.9	28.0	37.1	46.2	55.5	65.3	75.0	84.7	94.4	100.4
92.5°	18.9	25.5	32.3	39.1	45.8	53.8	63.1	72.3	81.5	90.8	96.8
95°	40.7	42.1	43.5	44.8	46.2	51.5	60.6	69.7	79.0	88.1	94.0
97.5°	73.0	76.4	79.9	83.3	86.8	87.9	86.9	85.8	84.6	83.6	89.4
100°	97.4	104.9	112.4	119.9	127.4	125.5	114.3	103.0	91.8	80.6	86.1
102.5°	125.2	131.5	137.8	144.2	150.5	147.1	134.0	120.9	107.8	94.7	96.3
105°	166.0	171.2	176.3	181.4	186.6	187.3	183.4	179.6	175.7	171.9	155.2
107.5°	208.3	212.6	217.0	221.3	225.6	231.9	240.2	248.4	256.7	264.9	253.6
110°	236.6	240.4	244.2	248.1	251.9	257.7	265.4	273.1	281.0	288.7	288.9



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	264.1	267.3	270.6	273.8	277.0	282.4	289.8	297.4	304.8	312.3	316.4
115°	304.2	306.8	309.4	312.1	314.7	319.4	326.3	333.1	340.0	346.9	351.9
117.5°	343.5	345.5	347.6	349.7	351.8	355.7	361.7	367.7	373.6	379.7	384.4
120°	367.4	369.3	371.1	373.0	374.8	378.6	384.3	389.9	395.6	401.2	405.9
122.5°	392.3	393.6	394.9	396.2	397.6	401.0	406.4	411.9	417.4	422.9	427.2
125°	425.7	426.8	427.7	428.7	429.6	432.6	437.8	442.9	448.1	453.2	456.8
127.5°	458.9	459.7	460.5	461.3	462.0	464.7	469.1	473.5	478.0	482.4	486.0
130°	479.6	480.3	481.2	481.9	482.7	484.9	488.6	492.3	496.1	499.7	503.2
132.5°	498.8	499.6	500.6	501.5	502.5	504.4	507.4	510.3	513.2	516.1	519.5
135°	528.9	529.3	529.9	530.5	531.0	532.4	534.7	537.0	539.1	541.4	544.7
137.5°	554.5	555.3	556.0	556.9	557.6	558.6	559.9	561.1	562.4	563.6	566.8
140°	571.1	571.8	572.5	573.3	574.0	574.8	575.6	576.5	577.3	578.1	581.0
142.5°	587.0	587.6	588.1	588.8	589.4	589.8	590.3	590.8	591.3	591.7	594.3
145°	609.3	609.9	610.6	611.3	612.0	612.5	612.7	612.9	613.1	613.4	614.9
147.5°	629.5	630.1	630.7	631.1	631.7	632.1	632.4	632.5	632.8	633.1	633.7
150°	642.4	642.8	643.1	643.5	643.9	644.1	644.4	644.6	644.9	645.1	645.4
152.5°	654.0	654.2	654.3	654.5	654.7	654.9	655.0	655.2	655.3	655.4	655.8
155°	670.3	670.1	669.9	669.7	669.4	669.4	669.5	669.6	669.7	669.9	670.4
157.5°	683.1	683.1	683.0	683.0	683.0	682.9	682.8	682.7	682.5	682.4	683.2
160°	690.8	690.7	690.6	690.4	690.3	690.2	690.0	689.9	689.8	689.8	690.4
162.5°	698.1	697.8	697.5	697.2	696.8	696.6	696.5	696.4	696.3	696.2	697.0
165°	706.9	706.5	706.2	705.9	705.5	705.2	705.1	705.0	704.9	704.7	705.8
167.5°	713.8	713.3	712.8	712.4	711.9	711.6	711.6	711.6	711.6	711.6	712.7
170°	717.7	717.2	716.7	716.2	715.8	715.5	715.5	715.5	715.5	715.5	716.5
172.5°	720.3	719.7	719.1	718.5	717.9	717.7	717.8	717.9	718.0	718.1	719.1
175°	723.6	723.0	722.4	721.8	721.2	721.0	721.0	721.2	721.3	721.4	722.3
177.5°	724.4	724.0	723.5	723.0	722.6	722.4	722.5	722.6	722.6	722.7	723.5
180°	723.6	723.6	723.6	723.6	723.6	723.6	723.6	723.6	723.6	723.6	723.6



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	662.8	662.8	662.8	662.8	662.8	662.8	662.8	662.8
2.5°	661.4	662.4	663.5	663.9	663.7	663.6	663.5	663.4
5°	660.3	661.6	662.9	663.5	663.3	663.1	663.0	662.8
7.5°	656.3	657.9	659.6	660.3	660.1	659.9	659.7	659.5
10°	652.3	653.9	655.5	656.1	655.8	655.5	655.2	654.9
12.5°	646.9	648.3	649.8	650.4	650.1	649.7	649.4	649.1
15°	636.4	638.0	639.6	640.4	640.2	640.0	639.9	639.7
17.5°	622.8	624.2	625.7	626.3	626.0	625.8	625.7	625.4
20°	613.0	614.4	615.9	616.7	616.8	617.0	617.2	617.3
22.5°	602.2	604.1	605.9	606.7	606.6	606.5	606.4	606.3
25°	583.9	586.1	588.1	589.2	589.2	589.2	589.2	589.2
27.5°	564.9	566.7	568.4	569.5	569.6	569.7	569.9	570.0
30°	551.9	553.7	555.7	556.7	556.7	556.7	556.7	556.7
32.5°	537.6	539.7	541.8	543.0	543.4	543.8	544.1	544.5
35°	516.7	519.2	521.5	523.0	523.7	524.3	525.0	525.7
37.5°	494.9	497.7	500.4	502.1	502.6	503.0	503.6	504.1
40°	480.5	483.2	486.0	487.7	488.3	489.0	489.6	490.2
42.5°	465.4	468.4	471.5	473.3	474.3	475.1	476.1	476.9
45°	442.9	445.9	449.0	451.2	452.4	453.7	455.1	456.3
47.5°	420.2	423.6	427.0	429.2	430.2	431.2	432.3	433.2
50°	404.4	408.2	411.9	414.2	415.4	416.5	417.6	418.8
52.5°	388.6	392.4	396.2	398.8	400.2	401.5	402.9	404.4
55°	364.6	368.9	373.2	376.1	377.4	378.6	379.9	381.3
57.5°	340.2	344.5	348.8	351.8	353.3	354.8	356.3	357.8
60°	323.1	327.5	332.1	335.2	337.0	338.7	340.4	342.2
62.5°	306.9	311.4	315.8	319.0	320.6	322.2	323.9	325.5
65°	281.1	285.9	290.8	294.0	295.6	297.2	298.8	300.4
67.5°	255.4	260.7	266.0	269.3	270.6	271.9	273.3	274.7
70°	238.5	243.6	248.7	252.0	253.6	255.2	256.8	258.4
72.5°	221.3	226.6	231.9	235.4	237.0	238.6	240.2	241.8
75°	195.4	200.8	206.0	209.6	211.5	213.5	215.4	217.4
77.5°	171.2	176.7	182.3	185.9	187.4	188.8	190.3	191.8
80°	155.3	160.8	166.3	169.8	171.4	173.0	174.6	176.2
82.5°	140.9	146.3	151.7	155.3	156.9	158.5	160.1	161.7
85°	120.6	126.1	131.6	135.1	136.7	138.3	139.9	141.5
87.5°	105.7	111.2	116.8	120.4	122.1	123.7	125.4	127.0
90°	106.3	112.3	118.2	122.2	123.9	125.8	127.6	129.5
92.5°	102.9	109.0	115.1	118.9	120.6	122.2	123.9	125.5
95°	99.7	105.6	111.4	115.1	116.7	118.3	119.9	121.5
97.5°	95.1	100.8	106.5	110.3	112.0	113.7	115.5	117.2
100°	91.8	97.4	103.0	106.7	108.4	110.1	111.8	113.6
102.5°	97.8	99.4	100.9	102.6	104.4	106.3	108.1	109.9
105°	138.6	122.0	105.3	97.7	99.4	101.1	102.8	104.5
107.5°	242.5	231.3	220.1	207.2	192.7	178.1	163.6	149.1
110°	289.1	289.4	289.5	281.8	266.0	250.2	234.4	218.6





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CATALOG NUMBER: S123DIP-S560D585U830-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	320.6	324.6	328.8	329.7	327.5	325.3	323.1	320.9
115°	356.9	361.9	367.0	370.4	372.2	373.9	375.7	377.5
117.5°	389.2	394.0	398.7	401.8	403.1	404.4	405.9	407.2
120°	410.6	415.2	419.8	422.7	423.9	425.0	426.1	427.3
122.5°	431.3	435.5	439.8	442.5	443.7	445.0	446.2	447.4
125°	460.4	464.0	467.6	470.0	471.5	472.8	474.2	475.5
127.5°	489.5	493.0	496.6	498.8	499.6	500.5	501.3	502.3
130°	506.8	510.3	513.8	515.9	516.7	517.4	518.1	518.9
132.5°	523.0	526.4	529.8	531.9	532.6	533.4	534.1	534.9
135°	547.9	551.1	554.4	556.2	556.7	557.1	557.6	558.0
137.5°	569.9	573.0	576.1	577.9	578.4	579.0	579.6	580.1
140°	583.9	586.7	589.7	591.4	591.9	592.5	593.0	593.6
142.5°	596.7	599.3	601.8	603.3	603.8	604.3	604.7	605.2
145°	616.4	617.9	619.4	620.6	621.2	621.8	622.5	623.1
147.5°	634.3	634.9	635.6	635.8	635.9	635.9	635.9	636.0
150°	645.5	645.8	646.0	646.1	646.1	646.1	646.0	646.0
152.5°	656.3	656.7	657.1	657.1	656.7	656.1	655.6	655.2
155°	671.0	671.7	672.2	672.1	671.5	670.7	670.1	669.3
157.5°	683.8	684.6	685.3	685.1	684.2	683.3	682.4	681.5
160°	691.2	691.8	692.6	692.5	691.7	690.9	690.0	689.2
162.5°	697.8	698.6	699.5	699.5	698.7	698.0	697.2	696.5
165°	706.7	707.7	708.6	708.7	707.8	707.0	706.2	705.3
167.5°	713.6	714.5	715.5	715.5	714.5	713.6	712.7	711.6
170°	717.5	718.4	719.3	719.3	718.4	717.5	716.5	715.5
172.5°	720.0	721.0	721.9	721.9	720.9	719.8	718.7	717.7
175°	723.1	724.0	724.8	724.7	723.8	722.8	721.9	720.9
177.5°	724.2	725.0	725.8	725.7	724.7	723.8	722.8	721.9
180°	723.6	723.6	723.6	723.6	723.6	723.6	723.6	723.6

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