

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: P332122-830

Luminaire Tested: **S123DIW-S560D460U830-4F0-1E-UDD-D**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332122-830  
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-S560D460U830-4F0-1E-UDD-D  
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 560 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: 3967.1 lumens  
Efficiency: N/A  
Efficacy: 131.4 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

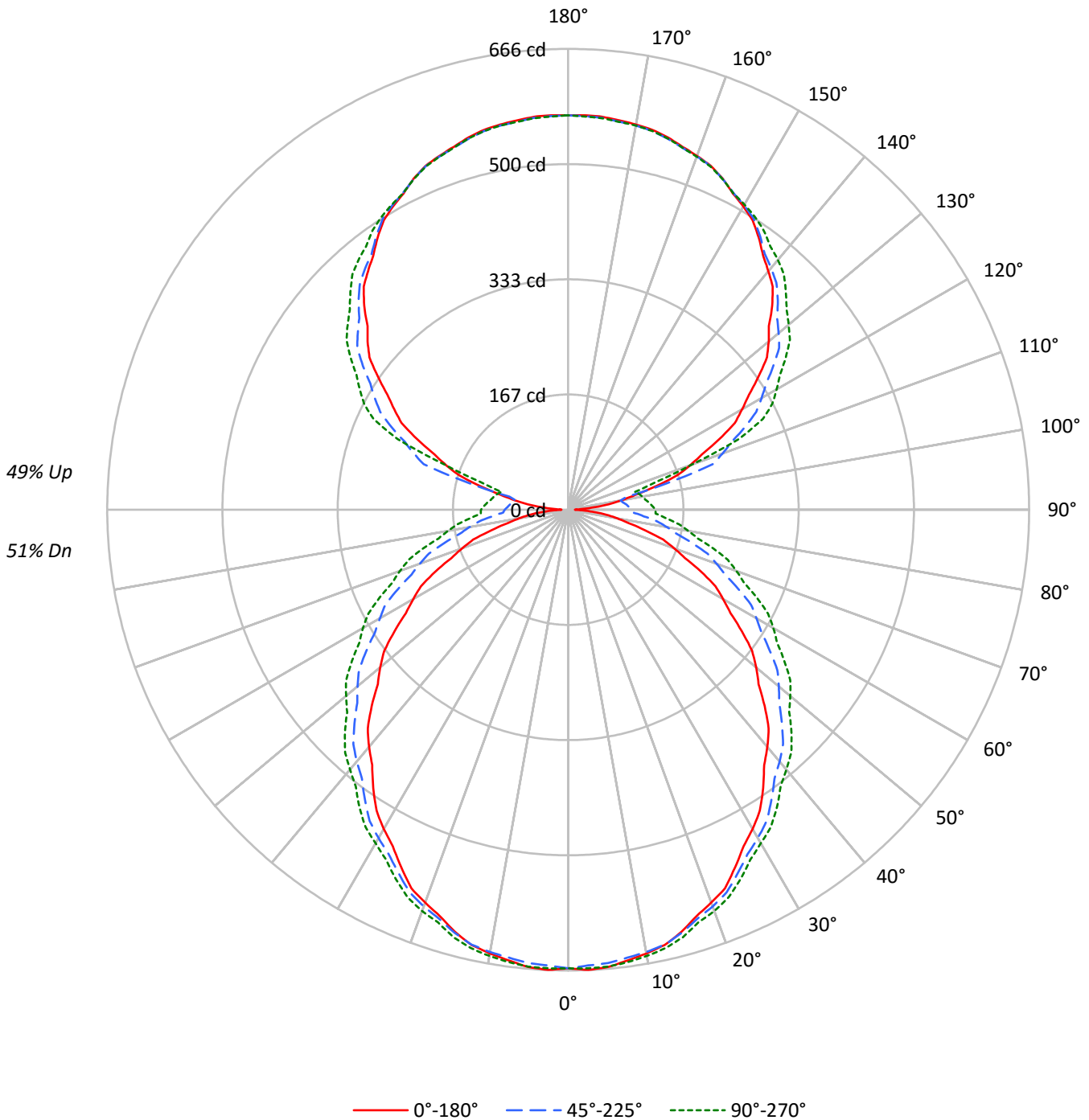
Input Watts (W): 30.2  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P332122-830

CATALOG NUMBER: S123DIW-S560D460U830-4F0-1E-UDD-D

### Luminous Intensity Polar Plot





TEST NUMBER: P332122-830

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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	107	107	107	107	99	99	99	99	84	84	84	70	70	70	57	57	57	51
1	97	92	88	84	89	85	81	78	72	69	67	60	58	56	49	48	46	41
2	88	80	73	68	81	74	68	63	63	58	54	52	49	46	43	40	38	34
3	80	70	62	56	73	65	58	52	55	50	45	46	42	39	37	35	32	28
4	73	62	53	47	67	57	50	44	49	43	38	41	36	33	33	30	27	24
5	67	55	46	40	61	51	43	38	43	37	33	36	32	28	30	26	24	20
6	62	49	41	35	57	46	38	33	39	33	29	33	28	25	27	23	21	18
7	57	44	36	30	52	41	34	28	35	29	25	30	25	22	25	21	18	16
8	53	40	32	27	49	37	30	25	32	26	22	27	23	19	23	19	16	14
9	49	37	29	24	45	34	27	22	29	24	20	25	20	17	21	17	15	13
10	46	33	26	21	42	31	25	20	27	22	18	23	19	16	19	16	13	11

**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	1.6
10°-20°	179.1	4.5
20°-30°	267.9	6.8
30°-40°	319.9	8.1
40°-50°	334.7	8.4
50°-60°	314.1	7.9
60°-70°	262.3	6.6
70°-80°	187.7	4.7
80°-90°	113.5	2.9
90°-100°	91.0	2.3
100°-110°	150.4	3.8
110°-120°	271.7	6.8
120°-130°	321.8	8.1
130°-140°	331.6	8.4
140°-150°	303.7	7.7
150°-160°	243.5	6.1
160°-170°	157.1	4.0
170°-180°	54.2	1.4
0°-30°	509.8	12.9
0°-40°	829.7	20.9
0°-60°	1478.6	37.3
0°-90°	2042.1	51.5
90°-120°	513.0	12.9
90°-150°	1470.1	37.1
90°-180°	1925.0	48.5
0°-180°	3967.1	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	50	92	117	126	8
95°	34	46	85	109	117	38
105°	132	152	147	96	100	140
115°	240	253	281	302	310	237
125°	336	340	362	377	384	300
135°	417	419	428	442	445	321
145°	480	482	483	490	493	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: P332122-830

CATALOG NUMBER: S123DIW-S560D460U830-4F0-1E-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	27.4	35.6	43.8	52.0	60.3	68.7	77.2	85.6	94.0	99.5
90°	9.8	18.6	27.4	36.2	45.1	54.1	63.5	73.0	82.4	91.7	97.6
92.5°	16.7	23.5	30.3	37.1	44.0	51.9	60.9	69.8	78.8	87.8	93.7
95°	33.7	36.2	38.5	41.0	43.4	49.0	57.9	66.8	75.7	84.6	90.2
97.5°	59.0	62.9	66.8	70.8	74.6	77.0	77.8	78.4	79.2	79.9	85.5
100°	78.0	85.1	92.1	99.2	106.1	105.9	98.7	91.4	84.1	76.8	82.2
102.5°	99.8	105.8	111.8	117.8	123.8	122.3	113.6	104.8	96.0	87.2	89.4
105°	132.0	136.9	141.8	146.7	151.5	153.2	151.6	150.1	148.5	146.8	134.7
107.5°	165.1	169.3	173.3	177.5	181.5	187.6	195.4	203.3	211.2	219.0	211.1
110°	187.3	190.9	194.5	198.2	201.8	207.4	214.8	222.3	229.7	237.1	238.3



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	209.0	212.0	215.1	218.1	221.1	226.3	233.5	240.6	247.9	255.1	259.2
115°	240.3	242.8	245.3	247.8	250.2	254.9	261.5	268.1	274.8	281.3	286.2
117.5°	271.3	273.1	275.0	276.9	278.8	282.7	288.5	294.4	300.2	306.1	310.7
120°	290.0	291.6	293.3	294.9	296.6	300.2	305.8	311.3	317.0	322.5	327.0
122.5°	309.6	310.8	311.9	313.0	314.1	317.4	322.7	328.1	333.6	338.9	343.0
125°	335.8	336.6	337.3	338.1	338.8	341.8	346.8	351.9	356.8	361.8	365.4
127.5°	361.9	362.5	363.2	363.7	364.3	366.7	371.1	375.3	379.7	384.0	387.5
130°	378.2	378.8	379.4	379.9	380.6	382.7	386.3	389.8	393.4	397.0	400.4
132.5°	393.2	393.9	394.6	395.4	396.1	397.8	400.8	403.6	406.5	409.3	412.6
135°	416.9	417.3	417.6	418.1	418.5	419.7	421.9	424.0	426.2	428.3	431.5
137.5°	437.1	437.6	438.2	438.8	439.4	440.3	441.5	442.7	443.8	445.1	448.1
140°	450.0	450.5	451.1	451.7	452.2	453.0	453.7	454.5	455.2	456.0	458.7
142.5°	462.5	463.0	463.4	463.8	464.3	464.7	465.1	465.4	465.8	466.2	468.6
145°	480.0	480.6	481.1	481.5	482.1	482.4	482.6	482.8	483.0	483.1	484.7
147.5°	495.9	496.3	496.7	497.2	497.6	497.9	498.1	498.3	498.5	498.7	499.3
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°	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°	105.1	110.7	116.1	119.7	121.4	123.0	124.6	126.3
90°	103.4	109.2	115.1	118.9	120.6	122.4	124.2	126.0
92.5°	99.6	105.6	111.5	115.3	116.9	118.5	120.1	121.7
95°	95.9	101.5	107.2	110.7	112.4	114.0	115.6	117.2
97.5°	91.0	96.5	102.1	105.7	107.4	109.1	110.7	112.4
100°	87.6	93.0	98.4	102.0	103.7	105.4	107.1	108.8
102.5°	91.6	93.8	96.0	97.9	99.7	101.5	103.3	105.1
105°	122.5	110.4	98.2	92.9	94.6	96.2	97.8	99.5
107.5°	203.2	195.3	187.4	177.9	166.7	155.6	144.5	133.3
110°	239.3	240.3	241.5	235.9	223.8	211.6	199.3	187.2





TEST NUMBER: P332122-830

CATALOG NUMBER: S123DIW-S560D460U830-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	263.3	267.4	271.5	272.8	271.4	269.9	268.5	267.1
115°	291.0	295.7	300.5	303.7	305.4	307.1	308.7	310.4
117.5°	315.3	319.8	324.4	327.3	328.7	330.0	331.3	332.6
120°	331.4	335.8	340.3	343.1	344.2	345.3	346.5	347.5
122.5°	347.1	351.2	355.3	358.0	359.1	360.3	361.6	362.7
125°	369.0	372.6	376.1	378.5	379.8	381.2	382.5	383.8
127.5°	391.0	394.4	397.8	400.1	401.0	401.9	402.7	403.7
130°	403.9	407.3	410.7	412.8	413.6	414.3	415.1	415.9
132.5°	415.9	419.2	422.5	424.6	425.5	426.2	427.1	427.9
135°	434.7	437.8	441.0	442.8	443.4	443.8	444.4	444.9
137.5°	451.1	454.0	457.0	458.8	459.5	460.1	460.7	461.3
140°	461.6	464.3	467.1	468.8	469.5	470.0	470.7	471.3
142.5°	471.1	473.5	476.0	477.5	478.1	478.6	479.1	479.7
145°	486.1	487.6	489.1	490.1	490.8	491.4	492.0	492.7
147.5°	499.8	500.4	501.0	501.3	501.4	501.6	501.7	501.9
150°	508.5	508.7	508.9	509.1	509.1	509.1	509.2	509.2
152.5°	517.0	517.3	517.6	517.6	517.3	516.9	516.5	516.1
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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