

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: P331915-830

Luminaire Tested: **S123DIP-S560D365U830-4F0-1E-UDD-D4**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331915-830  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-17,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S123DIP-S560D365U830-4F0-1E-UDD-D4  
Description: DEFINE 3 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 560 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 365 LUMENS PER FOOT, BATWING OPTIC  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3466.5 lumens  
Efficiency: N/A  
Efficacy: 126.1 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

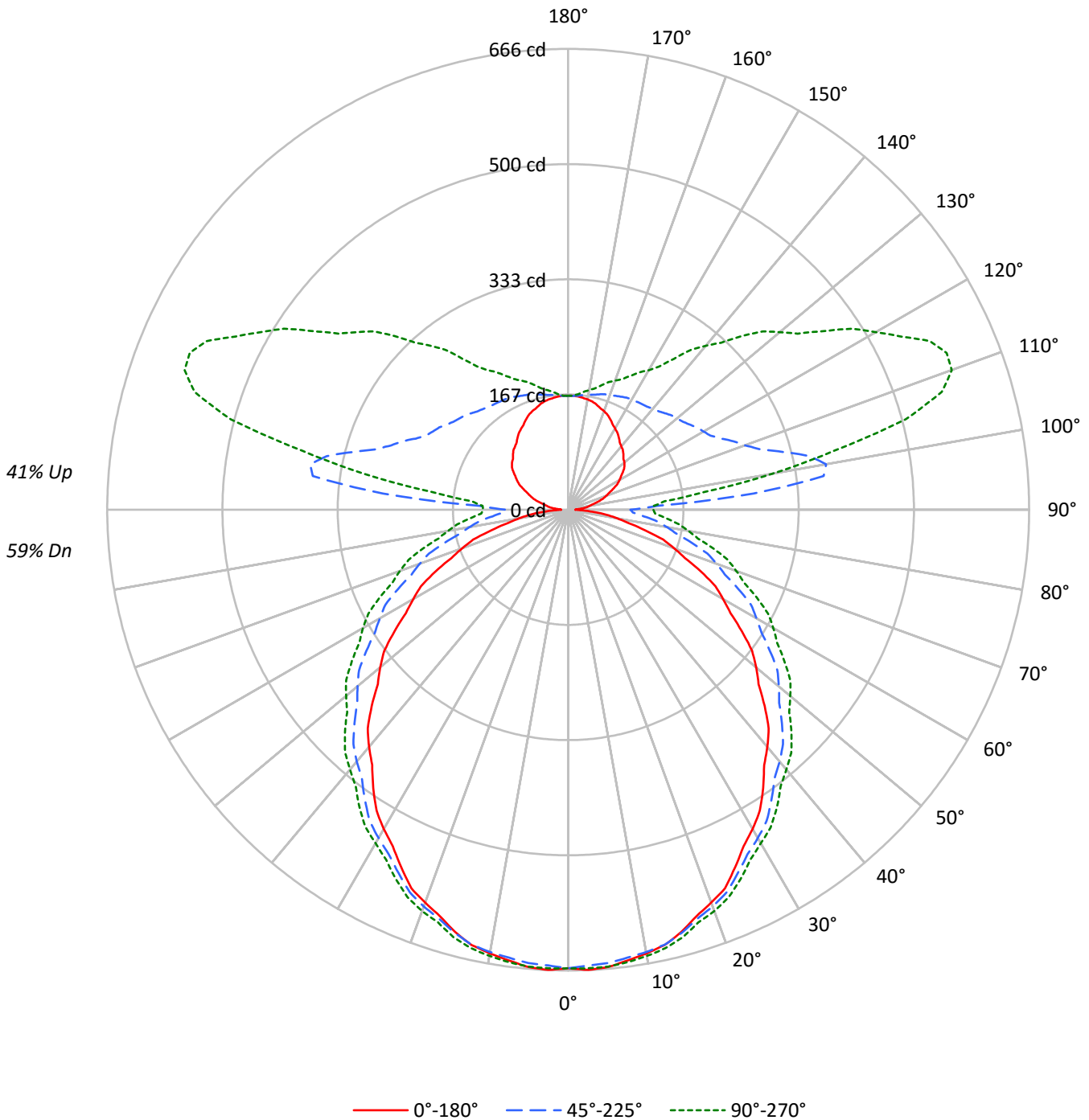
Input Watts (W): 27.5  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P331915-830

CATALOG NUMBER: S123DIP-S560D365U830-4F0-1E-UDD-D4

### 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	109	109	109	109	102	102	102	102	88	88	88	76	76	76	64	64	64	59
1	99	94	89	85	92	87	83	80	76	73	70	65	63	61	55	53	52	47
2	89	81	74	69	83	76	70	65	66	61	57	56	53	50	48	45	43	38
3	81	71	63	57	75	66	59	53	57	52	47	49	45	42	42	39	36	32
4	74	63	54	48	69	58	51	45	51	45	40	44	39	35	37	34	31	27
5	68	56	47	41	63	52	44	39	45	39	34	39	34	30	33	30	26	23
6	63	50	41	35	58	47	39	33	41	35	30	35	30	26	30	26	23	20
7	58	45	37	31	54	42	35	29	37	31	26	32	27	23	27	24	20	18
8	54	41	33	27	50	38	31	26	34	28	23	29	24	21	25	21	18	16
9	50	37	29	24	46	35	28	23	31	25	21	27	22	19	23	19	16	14
10	47	34	27	22	43	32	25	21	28	23	19	25	20	17	22	18	15	13

**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



TEST NUMBER: P331915-830

CATALOG NUMBER: S123DIP-S560D365U830-4F0-1E-UDD-D4

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	62.8	1.8
10°-20°	179.1	5.2
20°-30°	267.9	7.7
30°-40°	319.9	9.2
40°-50°	334.7	9.7
50°-60°	314.1	9.1
60°-70°	262.3	7.6
70°-80°	187.7	5.4
80°-90°	113.2	3.3
90°-100°	161.8	4.7
100°-110°	310.9	9.0
110°-120°	289.5	8.4
120°-130°	223.1	6.4
130°-140°	169.2	4.9
140°-150°	121.6	3.5
150°-160°	83.5	2.4
160°-170°	49.0	1.4
170°-180°	16.0	0.5
0°-30°	509.8	14.7
0°-40°	829.7	23.9
0°-60°	1478.6	42.7
0°-90°	2041.8	58.9
90°-120°	762.2	22.0
90°-150°	1276.2	36.8
90°-180°	1425.0	41.1
0°-180°	3466.5	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	49	90	114	123	7
95°	19	73	269	151	140	18
105°	44	81	322	542	504	47
115°	72	98	243	504	577	71
125°	97	115	214	384	450	86
135°	113	134	197	306	355	87
145°	128	145	186	240	266	80
155°	144	156	180	205	214	66
165°	158	162	173	183	186	44
175°	164	164	166	168	168	16
180°	165	165	165	165	165	



TEST NUMBER: P331915-830

CATALOG NUMBER: S123DIP-S560D365U830-4F0-1E-UDD-D4

**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	43.7	51.9	60.1	68.5	76.9	85.3	93.7	99.1
90°	10.1	18.6	27.1	36.0	44.5	53.2	62.4	71.5	80.8	89.9	95.0
92.5°	12.9	22.1	32.0	41.6	51.5	64.0	80.8	103.1	125.3	128.2	120.9
95°	19.2	26.5	36.5	48.4	63.2	83.3	119.5	177.0	239.5	269.0	236.7
97.5°	26.4	32.3	40.9	51.5	65.6	86.2	120.8	184.3	282.9	372.4	398.5
100°	31.1	36.6	44.1	53.9	67.0	86.2	117.0	173.6	268.6	378.2	448.5
102.5°	36.2	41.4	48.1	57.1	68.9	86.8	114.9	164.0	249.3	357.4	447.6
105°	44.4	49.3	55.1	63.0	73.1	88.9	113.8	155.0	224.8	322.0	422.1
107.5°	52.5	56.7	61.9	69.2	78.3	92.8	115.2	150.2	207.5	290.1	381.2
110°	58.2	62.2	66.7	73.3	81.8	95.9	117.3	148.9	200.0	272.0	355.8



TEST NUMBER: P331915-830

CATALOG NUMBER: S123DIP-S560D365U830-4F0-1E-UDD-D4

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	64.2	67.5	71.5	77.6	85.7	99.0	119.0	148.6	194.2	258.4	332.8
115°	71.9	75.1	79.1	84.4	91.9	104.7	123.2	149.3	189.1	243.1	304.5
117.5°	80.2	82.9	85.8	90.0	97.6	109.1	127.1	150.7	184.9	231.7	285.3
120°	85.5	87.3	89.7	93.9	101.0	112.4	129.7	152.3	183.2	225.8	274.8
122.5°	90.6	92.0	94.1	98.0	104.5	116.1	132.9	153.9	182.5	221.1	265.7
125°	97.1	97.7	99.7	103.4	109.7	121.0	137.4	156.7	181.3	214.3	253.3
127.5°	102.6	103.5	105.8	109.3	116.2	127.0	142.1	159.2	181.0	208.8	241.9
130°	106.1	106.9	109.8	113.6	120.5	130.9	145.2	161.0	180.9	205.1	235.1
132.5°	108.2	109.4	112.6	117.4	124.3	134.3	147.7	162.6	180.2	201.9	228.7
135°	112.7	113.9	117.3	122.2	129.0	138.8	150.9	164.0	179.1	197.2	219.7
137.5°	117.0	118.2	121.7	126.9	133.7	142.4	153.4	165.1	178.0	193.0	212.0
140°	119.3	120.9	124.3	129.6	136.3	144.9	155.0	165.5	177.3	190.4	207.2
142.5°	122.5	123.8	127.2	131.9	138.5	146.2	155.7	165.5	176.2	187.6	202.5
145°	127.6	128.5	131.3	136.1	141.7	149.2	157.9	166.8	176.2	186.2	198.1
147.5°	132.1	132.7	135.6	140.0	145.4	151.9	159.9	168.0	176.2	184.9	194.4
150°	135.5	135.9	138.6	142.9	147.5	153.5	161.2	168.2	176.2	183.9	192.2
152.5°	139.0	139.1	141.8	145.5	149.7	155.4	162.0	168.7	175.4	182.6	190.0
155°	144.2	144.2	146.2	149.6	153.3	157.9	163.5	168.9	174.6	180.2	186.8
157.5°	148.4	148.6	150.2	153.2	156.3	159.9	164.4	169.2	173.4	178.1	183.2
160°	151.6	151.6	152.9	155.5	157.9	161.2	165.2	169.2	172.9	176.5	180.9
162.5°	153.9	153.9	155.0	157.1	159.2	162.0	165.5	168.9	171.8	174.9	178.4
165°	157.5	157.2	157.9	159.6	160.9	163.2	165.9	168.2	170.2	172.6	175.2
167.5°	160.2	159.9	160.2	161.5	162.4	163.9	165.8	167.7	168.6	170.1	172.1
170°	161.8	161.2	161.6	162.5	163.2	163.9	165.5	166.8	167.6	168.5	170.2
172.5°	163.0	162.5	162.6	163.3	163.7	164.1	165.5	166.6	166.7	167.2	168.3
175°	164.2	163.9	163.5	164.2	164.2	164.6	165.2	165.9	165.5	165.5	166.2
177.5°	164.9	164.6	164.3	164.6	164.6	164.6	164.9	165.3	164.9	164.6	164.9
180°	164.6	164.6	164.6	164.6	164.6	164.6	164.6	164.6	164.6	164.6	164.6



TEST NUMBER: P331915-830

CATALOG NUMBER: S123DIP-S560D365U830-4F0-1E-UDD-D4

**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°	104.5	110.1	115.6	119.2	120.8	122.4	124.1	125.6
90°	100.9	106.6	112.4	116.6	117.9	119.8	121.8	123.0
92.5°	115.6	115.2	117.9	119.6	120.5	120.9	122.7	123.7
95°	201.3	167.7	155.0	146.3	141.6	140.2	139.4	139.7
97.5°	374.8	320.0	281.8	245.2	222.3	208.9	201.4	200.2
100°	464.9	442.5	408.2	364.0	332.0	309.2	297.8	299.8
102.5°	492.3	496.0	477.8	450.8	426.2	408.6	399.4	393.3
105°	496.2	534.0	544.8	539.0	525.2	514.0	504.7	504.5
107.5°	464.5	522.8	556.3	571.0	572.7	569.9	567.7	566.0
110°	436.3	501.7	547.9	573.9	584.5	588.4	589.1	589.7





TEST NUMBER: P331915-830

CATALOG NUMBER: S123DIP-S560D365U830-4F0-1E-UDD-D4

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	407.7	474.4	525.5	558.2	576.6	586.4	590.3	591.8
115°	370.0	431.9	484.7	523.6	549.8	565.7	573.7	576.6
117.5°	341.1	395.0	442.8	482.1	509.4	527.4	538.4	541.9
120°	325.5	374.1	417.8	453.8	481.3	501.1	510.2	513.3
122.5°	312.5	356.8	397.4	430.9	455.4	473.3	483.2	486.9
125°	294.6	334.3	369.7	398.5	421.0	436.8	446.2	449.7
127.5°	278.4	314.1	346.0	372.4	392.5	406.1	414.7	417.9
130°	268.2	301.1	331.2	355.8	374.5	387.4	395.4	399.0
132.5°	258.4	288.8	316.9	340.4	358.1	371.2	378.5	381.4
135°	245.0	271.5	296.0	316.8	333.9	344.8	351.6	354.7
137.5°	232.5	254.5	275.7	293.8	308.3	319.2	325.1	327.4
140°	225.2	244.6	263.0	278.9	292.4	302.5	308.6	309.1
142.5°	217.8	234.6	250.6	264.5	276.2	285.2	290.8	291.2
145°	210.1	222.3	234.3	244.9	253.9	261.6	264.9	266.2
147.5°	203.8	212.9	221.9	229.2	236.1	241.5	244.6	245.4
150°	199.8	207.5	214.5	221.0	226.3	230.3	232.6	232.9
152.5°	196.9	203.5	209.7	215.0	219.0	222.4	223.8	223.8
155°	192.6	197.8	202.8	206.8	209.8	212.5	213.2	213.5
157.5°	187.8	192.3	196.1	199.3	201.9	203.9	204.4	204.3
160°	185.2	188.9	192.2	194.5	196.8	198.9	198.9	198.5
162.5°	182.0	185.1	188.2	190.3	191.8	193.5	193.5	193.2
165°	177.9	179.8	182.2	183.9	185.2	186.5	186.2	186.2
167.5°	174.3	175.8	177.1	178.3	178.9	179.8	179.6	179.6
170°	171.8	172.9	174.2	174.8	175.2	175.9	175.5	175.5
172.5°	169.8	170.5	171.5	171.9	172.0	172.7	172.1	171.8
175°	166.8	167.2	167.9	167.9	167.9	168.2	167.9	167.6
177.5°	165.0	165.3	165.6	165.6	165.3	165.6	165.0	165.0
180°	164.6	164.6	164.6	164.6	164.6	164.6	164.6	164.6

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