

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: P331913-940

Luminaire Tested: **S123DIP-S560D365U940-4F0-1E-UDD-D**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331913-940  
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-S560D365U940-4F0-1E-UDD-D  
Description: DEFINE 3 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 560 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 365 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3401.7 lumens  
Efficiency: N/A  
Efficacy: 123.7 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

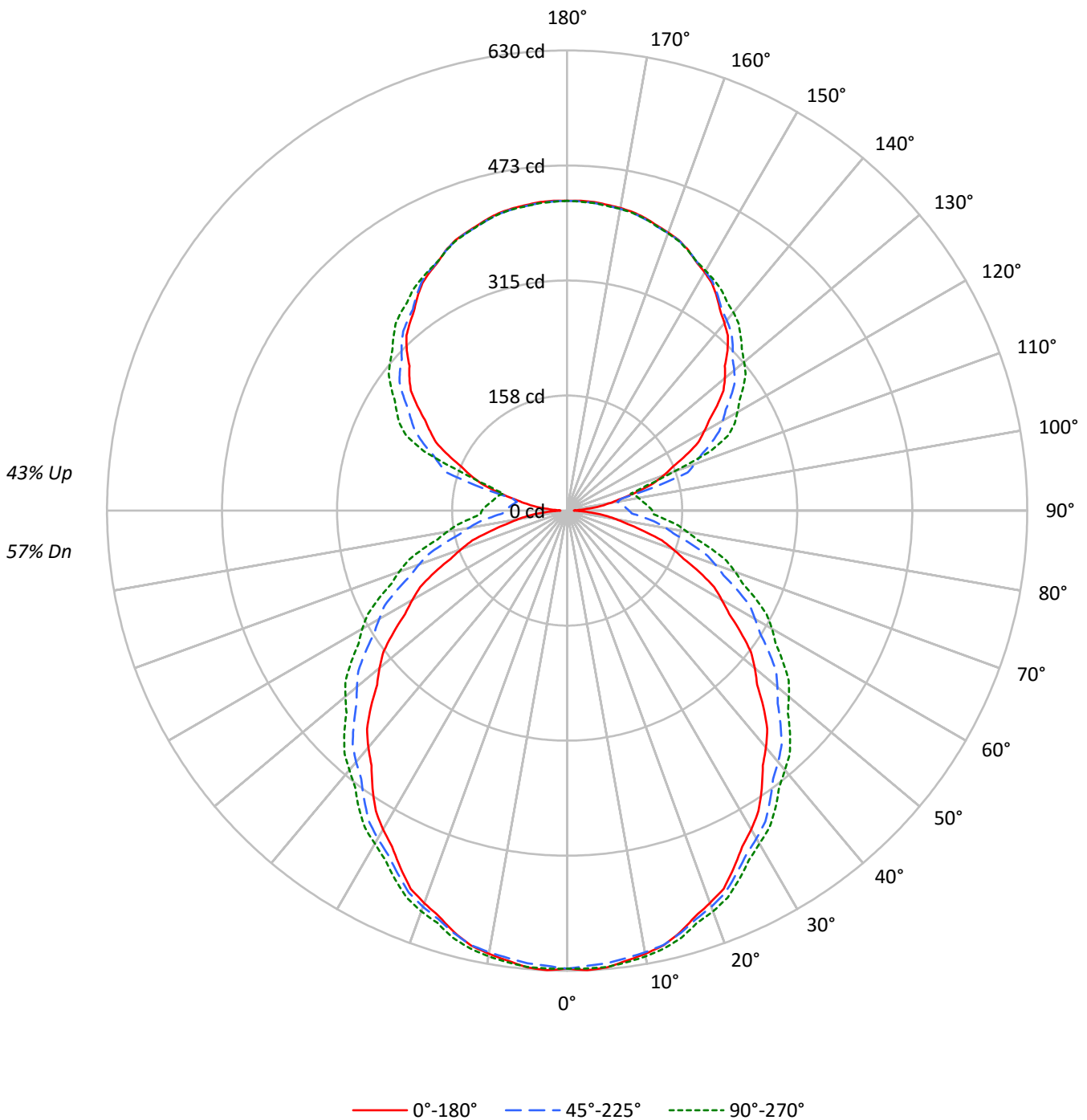
Input Watts (W): 27.5  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P331913-940

CATALOG NUMBER: S123DIP-S560D365U940-4F0-1E-UDD-D

### Luminous Intensity Polar Plot





TEST NUMBER: P331913-940

CATALOG NUMBER: S123DIP-S560D365U940-4F0-1E-UDD-D

**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	101	101	101	101	87	87	87	74	74	74	62	62	62	57
1	98	93	89	85	91	87	83	79	75	72	69	63	61	59	53	52	50	45
2	89	81	74	68	82	75	69	64	65	60	56	55	52	49	46	44	41	37
3	81	71	63	56	75	66	59	53	57	51	47	48	44	41	41	37	35	31
4	74	62	54	47	68	58	51	45	50	44	40	43	38	35	36	33	30	26
5	68	55	47	40	62	52	44	38	45	39	34	38	34	30	32	29	26	22
6	62	50	41	35	58	46	39	33	40	34	30	35	30	26	29	25	22	20
7	58	45	36	31	53	42	34	29	36	30	26	31	27	23	27	23	20	17
8	53	41	33	27	49	38	31	26	33	27	23	29	24	20	24	21	18	15
9	50	37	29	24	46	35	28	23	30	25	21	26	22	18	23	19	16	14
10	46	34	27	22	43	32	25	21	28	22	18	24	20	16	21	17	14	13

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

	0°	45°	90°
0°	6750	6750	6750
5°	6771	6579	6584
10°	6710	6428	6396
15°	6624	6256	6191
20°	6501	6059	5966
25°	6348	5833	5729
30°	6191	5629	5489
35°	6016	5414	5298
40°	5848	5218	5093
45°	5664	5030	4929
50°	5480	4845	4748
55°	5278	4654	4586
60°	5080	4461	4419
65°	4879	4255	4221
70°	4575	4025	4016
75°	4191	3760	3810
80°	3748	3499	3575
85°	3332	3319	3435



TEST NUMBER: P331913-940

CATALOG NUMBER: S123DIP-S560D365U940-4F0-1E-UDD-D

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	59.4	1.7
10°-20°	169.5	5.0
20°-30°	253.4	7.5
30°-40°	302.7	8.9
40°-50°	316.7	9.3
50°-60°	297.2	8.7
60°-70°	248.2	7.3
70°-80°	177.6	5.2
80°-90°	107.1	3.1
90°-100°	81.9	2.4
100°-110°	122.3	3.6
110°-120°	209.1	6.1
120°-130°	243.4	7.2
130°-140°	248.5	7.3
140°-150°	226.4	6.7
150°-160°	181.2	5.3
160°-170°	116.9	3.4
170°-180°	40.3	1.2
0°-30°	482.3	14.2
0°-40°	785.0	23.1
0°-60°	1398.8	41.1
0°-90°	1931.7	56.8
90°-120°	413.3	12.1
90°-150°	1131.7	33.3
90°-180°	1470.0	43.2
0°-180°	3401.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	627	627	627	627	627	
5°	628	626	622	627	627	59
15°	598	600	599	605	605	168
25°	540	546	548	557	557	249
35°	464	475	484	494	497	290
45°	380	396	413	426	432	293
55°	290	312	337	354	361	259
65°	200	227	257	277	284	198
75°	109	141	175	197	206	116
85°	33	68	104	126	134	35
90°	9	46	85	108	117	7
95°	27	42	77	100	108	30
105°	99	118	120	86	90	105
115°	180	191	217	236	243	177
125°	250	254	274	288	294	224
135°	310	312	320	333	336	239
145°	357	359	360	366	368	224
155°	393	392	393	394	392	181
165°	414	413	413	415	413	117
175°	424	423	423	425	423	40
180°	424	424	424	424	424	



TEST NUMBER: P331913-940

CATALOG NUMBER: S123DIP-S560D365U940-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	627.1	627.1	627.1	627.1	627.1	627.1	627.1	627.1	627.1	627.1	627.1
2.5°	629.8	629.5	629.1	628.7	628.3	627.7	626.7	625.7	624.7	623.8	624.7
5°	627.8	627.4	627.1	626.9	626.5	625.9	625.0	624.1	623.2	622.2	623.5
7.5°	621.6	621.6	621.7	621.8	621.9	621.4	620.5	619.6	618.8	617.9	619.4
10°	616.2	616.4	616.7	617.1	617.3	617.2	616.4	615.6	614.8	614.1	615.6
12.5°	609.6	610.0	610.5	610.8	611.3	611.3	610.7	610.2	609.7	609.1	610.6
15°	597.7	598.2	598.6	599.1	599.5	599.7	599.5	599.3	599.2	599.1	600.6
17.5°	582.6	583.5	584.5	585.4	586.3	586.7	586.7	586.6	586.6	586.5	587.8
20°	571.8	572.7	573.5	574.4	575.3	576.0	576.3	576.6	576.8	577.2	578.5
22.5°	560.3	561.2	562.0	563.0	563.9	564.5	565.0	565.4	565.9	566.2	568.0
25°	539.7	541.2	542.7	544.2	545.7	546.7	547.2	547.6	548.0	548.5	550.5
27.5°	518.9	520.6	522.4	524.1	525.8	527.1	528.1	529.1	530.0	531.0	532.7
30°	504.1	506.0	508.0	510.1	512.0	513.6	514.8	516.0	517.2	518.4	520.3
32.5°	487.7	489.9	492.1	494.4	496.6	498.5	500.1	501.6	503.2	504.8	506.8
35°	464.5	466.9	469.3	471.8	474.2	476.4	478.4	480.4	482.3	484.3	486.6
37.5°	439.9	442.6	445.3	448.1	450.8	453.4	455.8	458.3	460.7	463.2	465.7
40°	423.5	426.2	429.0	431.7	434.4	437.3	440.3	443.4	446.4	449.4	452.0
42.5°	405.5	408.8	412.1	415.4	418.8	422.0	425.3	428.4	431.6	434.7	437.6
45°	379.8	383.4	387.1	390.7	394.3	398.1	401.9	405.6	409.5	413.2	416.2
47.5°	352.8	357.0	361.1	365.2	369.3	373.6	378.0	382.3	386.6	391.0	394.2
50°	335.4	339.7	343.8	348.1	352.4	356.9	361.6	366.3	371.0	375.7	379.2
52.5°	316.8	321.3	325.8	330.3	334.7	339.7	344.8	350.0	355.2	360.4	364.0
55°	289.6	294.6	299.6	304.6	309.7	314.9	320.4	325.8	331.3	336.7	340.8
57.5°	263.1	268.3	273.6	278.7	284.0	289.6	295.6	301.6	307.6	313.5	317.6
60°	244.5	250.0	255.5	260.9	266.4	272.2	278.5	284.7	290.9	297.1	301.4
62.5°	227.0	232.6	238.3	243.8	249.4	255.5	262.1	268.7	275.3	281.9	286.1
65°	200.1	206.1	212.0	217.9	223.8	230.2	236.8	243.4	250.1	256.8	261.4
67.5°	172.8	179.1	185.4	191.6	198.0	204.5	211.3	218.1	224.9	231.7	236.7
70°	153.7	160.2	166.7	173.3	179.8	186.7	193.9	201.3	208.6	215.9	220.7
72.5°	136.2	142.8	149.3	155.8	162.3	169.3	176.8	184.4	191.9	199.5	204.5
75°	108.6	115.7	122.9	130.0	137.1	144.5	152.1	159.7	167.3	174.9	179.9
77.5°	84.5	91.8	99.0	106.1	113.3	120.7	128.4	136.1	143.7	151.4	156.7
80°	67.6	75.1	82.5	90.0	97.4	105.0	112.9	120.8	128.8	136.6	141.8
82.5°	52.9	60.5	67.9	75.5	83.1	90.9	98.9	106.9	114.9	123.0	128.1
85°	33.4	41.0	48.7	56.3	63.8	71.6	79.7	87.7	95.8	103.8	109.0
87.5°	18.2	25.9	33.6	41.3	49.0	56.8	64.7	72.7	80.6	88.5	93.7
90°	9.2	17.3	25.5	33.6	41.7	50.1	58.8	67.4	76.1	84.7	90.2
92.5°	14.2	20.7	27.2	33.7	40.2	47.6	56.0	64.3	72.6	80.9	86.4
95°	26.8	29.8	32.8	35.8	39.0	44.6	52.8	61.0	69.2	77.4	82.6
97.5°	45.3	49.4	53.4	57.5	61.5	64.6	66.7	68.8	70.8	72.9	77.9
100°	59.4	65.6	71.9	78.2	84.4	85.6	81.7	77.7	73.7	69.8	74.8
102.5°	75.5	80.9	86.2	91.7	97.0	97.2	92.1	87.0	81.9	76.9	79.5
105°	99.3	103.8	108.2	112.6	117.0	119.3	119.6	119.8	120.0	120.2	112.1
107.5°	123.9	127.6	131.3	135.0	138.8	144.2	151.4	158.5	165.8	172.9	167.9
110°	140.3	143.5	146.8	150.1	153.4	158.5	165.3	172.1	179.0	185.8	187.4



TEST NUMBER: P331913-940

CATALOG NUMBER: S123DIP-S560D365U940-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	156.3	159.1	161.8	164.6	167.4	172.0	178.6	185.2	191.8	198.4	202.3
115°	179.6	181.8	184.0	186.3	188.5	192.7	198.8	204.9	211.0	217.0	221.4
117.5°	202.5	204.2	205.8	207.5	209.1	212.7	218.1	223.6	229.0	234.4	238.6
120°	216.3	217.8	219.2	220.5	221.9	225.2	230.4	235.7	240.9	246.1	250.1
122.5°	231.0	231.9	232.8	233.7	234.6	237.6	242.6	247.7	252.7	257.7	261.5
125°	250.4	250.9	251.5	252.0	252.6	255.2	259.9	264.6	269.3	273.9	277.2
127.5°	269.7	270.2	270.5	271.0	271.4	273.6	277.6	281.5	285.5	289.5	292.7
130°	281.9	282.2	282.7	283.1	283.5	285.3	288.6	291.9	295.3	298.6	301.8
132.5°	292.9	293.5	294.0	294.5	295.1	296.6	299.3	301.9	304.6	307.2	310.3
135°	310.5	310.8	311.0	311.3	311.6	312.6	314.6	316.6	318.5	320.5	323.4
137.5°	325.5	325.9	326.3	326.7	327.1	327.9	329.0	330.0	331.2	332.3	335.0
140°	335.0	335.5	335.8	336.3	336.7	337.2	337.9	338.6	339.2	339.9	342.4
142.5°	344.4	344.6	344.9	345.3	345.5	345.8	346.2	346.4	346.7	347.1	349.3
145°	357.4	357.8	358.0	358.4	358.7	359.0	359.1	359.3	359.4	359.5	360.9
147.5°	369.0	369.3	369.6	370.0	370.2	370.5	370.7	370.8	371.0	371.0	371.6
150°	376.6	376.7	376.9	377.2	377.4	377.6	377.7	377.8	378.0	378.1	378.3
152.5°	383.3	383.4	383.5	383.6	383.7	383.9	383.9	384.0	384.1	384.1	384.4
155°	393.0	392.8	392.6	392.5	392.4	392.4	392.4	392.4	392.5	392.6	393.0
157.5°	400.4	400.4	400.4	400.3	400.3	400.3	400.2	400.1	400.0	400.0	400.4
160°	404.9	404.8	404.7	404.7	404.7	404.6	404.5	404.4	404.4	404.3	404.7
162.5°	409.2	409.0	408.8	408.7	408.5	408.3	408.2	408.2	408.1	408.0	408.5
165°	414.4	414.1	413.9	413.8	413.5	413.4	413.3	413.2	413.1	413.1	413.7
167.5°	418.4	418.1	417.9	417.6	417.2	417.1	417.1	417.1	417.1	417.1	417.7
170°	420.6	420.4	420.1	419.8	419.5	419.4	419.4	419.4	419.4	419.4	420.0
172.5°	422.1	421.9	421.5	421.2	420.8	420.7	420.7	420.8	420.9	420.9	421.5
175°	424.1	423.7	423.4	423.1	422.8	422.6	422.7	422.8	422.8	422.8	423.4
177.5°	424.6	424.4	424.1	423.8	423.5	423.4	423.5	423.5	423.6	423.7	424.1
180°	424.1	424.1	424.1	424.1	424.1	424.1	424.1	424.1	424.1	424.1	424.1



TEST NUMBER: P331913-940

CATALOG NUMBER: S123DIP-S560D365U940-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	627.1	627.1	627.1	627.1	627.1	627.1	627.1	627.1
2.5°	625.7	626.7	627.7	628.1	627.9	627.9	627.8	627.6
5°	624.7	625.9	627.1	627.7	627.5	627.3	627.2	627.1
7.5°	620.9	622.4	624.0	624.6	624.5	624.3	624.1	623.9
10°	617.2	618.7	620.2	620.7	620.5	620.2	619.8	619.6
12.5°	612.0	613.3	614.7	615.3	615.0	614.7	614.4	614.1
15°	602.1	603.6	605.1	605.8	605.6	605.5	605.4	605.2
17.5°	589.2	590.6	591.9	592.5	592.3	592.1	591.9	591.7
20°	580.0	581.3	582.6	583.4	583.5	583.7	583.9	584.0
22.5°	569.7	571.5	573.2	574.0	573.9	573.8	573.7	573.6
25°	552.4	554.5	556.4	557.4	557.4	557.4	557.4	557.4
27.5°	534.4	536.1	537.8	538.8	538.9	539.0	539.1	539.2
30°	522.1	523.9	525.8	526.6	526.6	526.6	526.6	526.6
32.5°	508.6	510.6	512.6	513.7	514.1	514.4	514.8	515.1
35°	488.8	491.2	493.4	494.8	495.4	496.1	496.7	497.3
37.5°	468.2	470.8	473.4	475.0	475.5	475.9	476.4	476.9
40°	454.6	457.2	459.8	461.4	462.0	462.6	463.2	463.8
42.5°	440.3	443.2	446.0	447.8	448.7	449.5	450.4	451.2
45°	419.0	421.9	424.8	426.9	428.0	429.3	430.5	431.7
47.5°	397.5	400.7	403.9	406.1	407.0	408.0	408.9	409.8
50°	382.6	386.2	389.7	391.9	393.0	394.0	395.1	396.2
52.5°	367.7	371.2	374.9	377.3	378.6	379.9	381.2	382.5
55°	344.9	349.0	353.1	355.8	357.0	358.2	359.4	360.7
57.5°	321.8	325.9	330.0	332.8	334.2	335.6	337.1	338.5
60°	305.7	309.9	314.1	317.1	318.8	320.4	322.1	323.8
62.5°	290.3	294.6	298.8	301.8	303.3	304.8	306.4	307.9
65°	265.9	270.5	275.1	278.1	279.6	281.2	282.7	284.2
67.5°	241.7	246.6	251.6	254.8	256.0	257.3	258.6	259.8
70°	225.6	230.4	235.3	238.4	240.0	241.5	243.0	244.5
72.5°	209.4	214.4	219.4	222.7	224.2	225.7	227.2	228.7
75°	184.9	189.9	194.9	198.3	200.1	202.0	203.8	205.6
77.5°	161.9	167.2	172.5	175.8	177.3	178.6	180.0	181.5
80°	147.0	152.1	157.3	160.6	162.1	163.6	165.1	166.7
82.5°	133.3	138.4	143.6	147.0	148.5	150.0	151.5	153.0
85°	114.1	119.3	124.5	127.8	129.3	130.8	132.3	133.8
87.5°	99.0	104.2	109.4	112.8	114.3	115.8	117.4	119.0
90°	95.6	101.0	106.5	110.0	111.7	113.3	115.0	116.7
92.5°	91.8	97.4	102.8	106.3	107.8	109.2	110.8	112.3
95°	87.7	93.0	98.2	101.6	103.1	104.6	106.1	107.6
97.5°	83.0	88.1	93.2	96.5	98.1	99.7	101.3	102.9
100°	79.7	84.7	89.7	92.9	94.5	96.1	97.7	99.3
102.5°	81.9	84.5	87.0	89.2	90.8	92.5	94.1	95.8
105°	104.0	95.8	87.7	84.4	85.9	87.4	88.9	90.3
107.5°	162.9	157.8	152.8	146.3	138.3	130.4	122.3	114.3
110°	189.1	190.7	192.3	188.8	179.9	171.2	162.4	153.6





TEST NUMBER: P331913-940

CATALOG NUMBER: S123DIP-S560D365U940-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	206.2	210.0	213.9	215.4	214.6	213.9	213.1	212.3
115°	225.8	230.1	234.4	237.4	238.9	240.3	241.8	243.3
117.5°	242.8	247.0	251.2	253.9	255.1	256.4	257.6	258.9
120°	254.2	258.2	262.3	264.8	265.9	267.0	268.0	269.1
122.5°	265.3	269.0	272.8	275.3	276.3	277.5	278.6	279.7
125°	280.6	283.9	287.2	289.5	290.7	291.9	293.1	294.4
127.5°	296.0	299.2	302.4	304.5	305.4	306.3	307.2	308.1
130°	305.0	308.1	311.3	313.3	314.0	314.8	315.6	316.3
132.5°	313.3	316.4	319.4	321.4	322.2	323.0	323.9	324.7
135°	326.4	329.3	332.3	333.9	334.6	335.1	335.6	336.2
137.5°	337.7	340.5	343.2	344.8	345.4	346.1	346.7	347.3
140°	345.0	347.6	350.1	351.7	352.3	352.9	353.6	354.2
142.5°	351.5	353.8	356.1	357.5	358.0	358.6	359.2	359.7
145°	362.2	363.6	365.0	366.0	366.6	367.1	367.7	368.4
147.5°	372.1	372.6	373.1	373.4	373.7	373.9	374.2	374.3
150°	378.4	378.5	378.7	378.8	378.9	379.0	379.1	379.2
152.5°	384.7	385.0	385.2	385.2	385.0	384.7	384.4	384.1
155°	393.3	393.7	394.0	394.0	393.6	393.2	392.7	392.3
157.5°	400.8	401.3	401.7	401.6	401.1	400.6	399.9	399.4
160°	405.1	405.6	406.0	405.9	405.5	404.9	404.5	403.9
162.5°	409.0	409.5	409.9	410.0	409.6	409.1	408.7	408.2
165°	414.2	414.8	415.4	415.4	414.9	414.4	413.9	413.4
167.5°	418.2	418.8	419.4	419.4	418.8	418.2	417.7	417.1
170°	420.5	421.1	421.6	421.6	421.1	420.5	420.0	419.4
172.5°	422.0	422.6	423.1	423.1	422.5	421.9	421.2	420.6
175°	423.8	424.4	424.8	424.8	424.3	423.7	423.1	422.6
177.5°	424.5	425.0	425.4	425.3	424.8	424.3	423.7	423.1
180°	424.1	424.1	424.1	424.1	424.1	424.1	424.1	424.1

(END OF REPORT)