

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: P331476-940

Luminaire Tested: **S122DIW-S290D710U940-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331476-940  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-8,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S122DIW-S290D710U940-4F0-1E-UDD-F1  
Description: DEFINE 2 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 290 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
UPLIGHT 710 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3267.4 lumens  
Efficiency: N/A  
Efficacy: 107.5 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.3  
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')  
CIE Type: Semi-Indirect

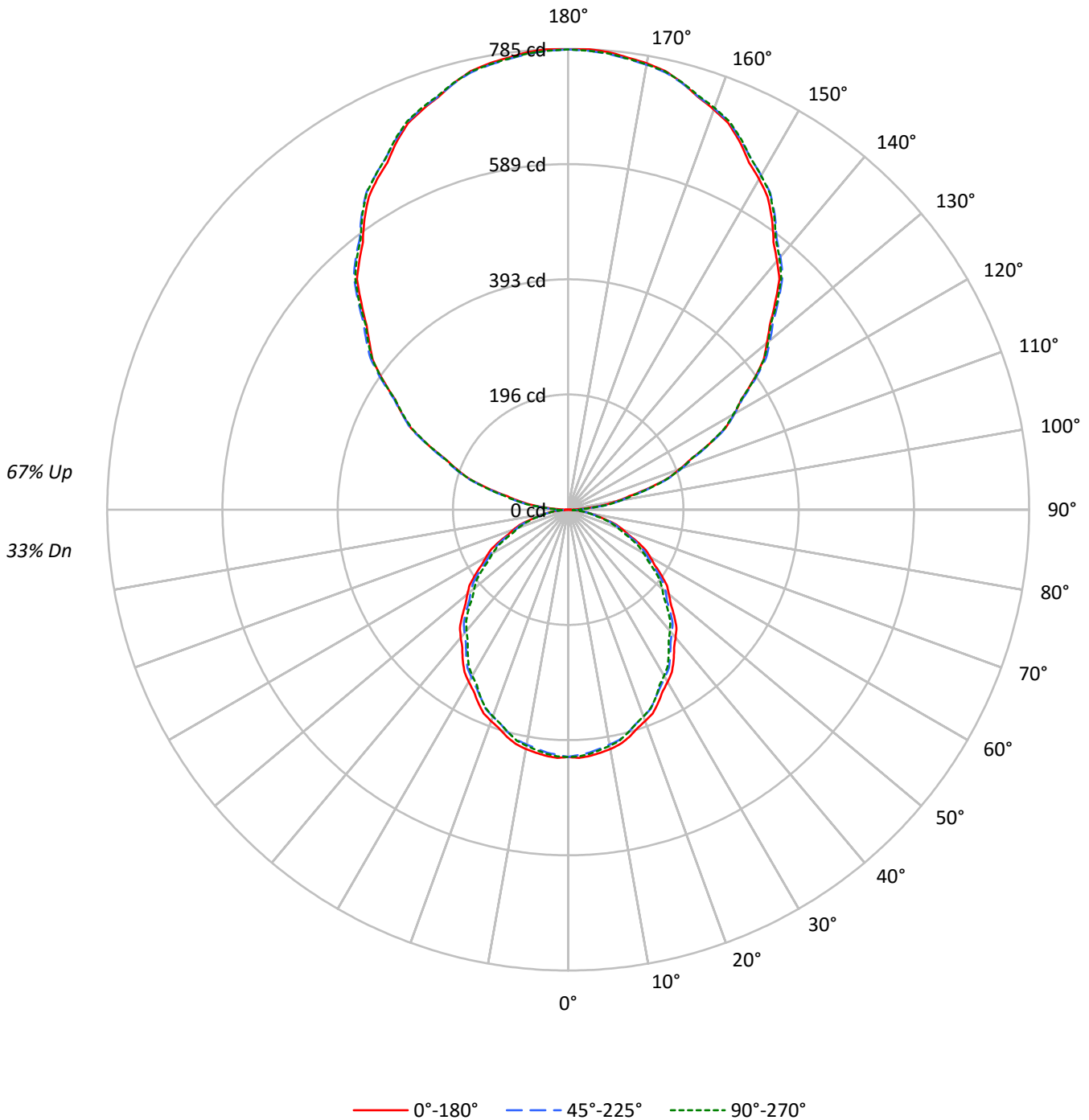
Input Watts (W): 30.4  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P331476-940

CATALOG NUMBER: S122DIW-S290D710U940-4F0-1E-UDD-F1

### 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	103	103	103	103	93	93	93	93	74	74	74	56	56	56	40	40	40	33
1	94	90	86	82	84	81	78	75	65	62	60	50	48	47	36	35	34	28
2	85	78	72	67	77	71	66	61	57	53	50	43	41	39	31	30	29	23
3	78	69	62	56	70	62	56	51	50	46	42	38	35	33	28	26	24	20
4	71	61	53	47	64	55	48	43	44	39	36	34	31	28	25	23	21	17
5	65	54	46	40	59	49	42	37	39	34	31	31	27	24	22	20	18	15
6	60	48	40	35	54	44	37	32	35	30	27	28	24	21	20	18	16	13
7	55	44	36	30	50	40	33	28	32	27	23	25	21	19	18	16	14	11
8	51	39	32	27	46	36	29	25	29	24	21	23	19	17	17	15	13	10
9	48	36	29	24	43	33	26	22	27	22	18	21	17	15	16	13	11	9
10	45	33	26	21	40	30	24	20	25	20	16	19	16	13	14	12	10	8

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

	0°	45°	90°
0°	6801	6801	6801
5°	6827	6729	6770
10°	6787	6661	6694
15°	6703	6574	6569
20°	6584	6445	6438
25°	6465	6285	6285
30°	6315	6139	6087
35°	6173	5964	5876
40°	5994	5788	5678
45°	5818	5613	5476
50°	5627	5433	5242
55°	5427	5225	5027
60°	5205	4970	4789
65°	4967	4722	4504
70°	4664	4414	4206
75°	4242	4067	3968
80°	3766	3654	3468
85°	3075	2927	2631



TEST NUMBER: P331476-940

CATALOG NUMBER: S122DIW-S290D710U940-4F0-1E-UDD-F1

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	39.6	1.2
10°-20°	111.5	3.4
20°-30°	163.8	5.0
30°-40°	190.3	5.8
40°-50°	190.1	5.8
50°-60°	165.8	5.1
60°-70°	122.6	3.8
70°-80°	69.4	2.1
80°-90°	21.8	0.7
90°-100°	49.7	1.5
100°-110°	154.3	4.7
110°-120°	263.8	8.1
120°-130°	346.9	10.6
130°-140°	389.3	11.9
140°-150°	381.7	11.7
150°-160°	320.2	9.8
160°-170°	212.4	6.5
170°-180°	74.2	2.3
0°-30°	314.9	9.6
0°-40°	505.2	15.5
0°-60°	861.1	26.4
0°-90°	1074.9	32.9
90°-120°	467.8	14.3
90°-150°	1585.7	48.5
90°-180°	2193.0	67.1
0°-180°	3267.4	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	421	421	421	421	421	
5°	421	420	415	418	418	40
15°	401	398	393	395	393	113
25°	363	360	353	354	353	167
35°	313	309	303	300	298	195
45°	255	252	246	242	240	197
55°	193	190	186	181	179	172
65°	130	128	124	120	118	129
75°	68	67	65	63	64	73
85°	17	16	16	15	14	19
90°	1	9	23	22	22	3
95°	34	41	42	42	41	39
105°	142	144	146	147	147	150
115°	265	268	267	267	265	262
125°	385	391	389	387	386	344
135°	498	505	507	506	504	385
145°	605	609	613	614	611	378
155°	691	693	695	698	697	318
165°	752	752	752	756	753	212
175°	783	781	779	784	780	74
180°	784	784	784	784	784	



TEST NUMBER: P331476-940

CATALOG NUMBER: S122DIW-S290D710U940-4F0-1E-UDD-F1

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	421.2	421.2	421.2	421.2	421.2	421.2	421.2	421.2	421.2	421.2	421.2
2.5°	423.2	422.8	422.5	422.1	421.8	421.2	420.4	419.6	418.8	418.0	418.7
5°	421.2	420.9	420.5	420.2	419.8	419.2	418.2	417.2	416.2	415.2	415.9
7.5°	417.6	417.0	416.4	415.9	415.4	414.6	413.6	412.5	411.5	410.5	411.3
10°	414.0	413.4	412.8	412.1	411.4	410.6	409.6	408.5	407.4	406.3	407.0
12.5°	409.1	408.6	408.0	407.4	406.9	406.1	405.0	403.9	402.9	401.8	402.3
15°	401.0	400.5	399.9	399.4	398.9	398.1	396.8	395.7	394.5	393.3	393.7
17.5°	390.7	390.1	389.6	389.1	388.5	387.6	386.5	385.2	384.1	382.9	383.3
20°	383.2	382.6	382.1	381.6	381.0	380.1	378.9	377.6	376.4	375.1	375.4
22.5°	375.8	375.0	374.3	373.4	372.7	371.8	370.6	369.3	368.2	367.0	367.0
25°	362.9	362.2	361.5	360.8	360.1	358.9	357.4	355.9	354.4	352.8	353.0
27.5°	348.4	347.8	347.1	346.4	345.8	344.8	343.7	342.4	341.3	340.0	339.7
30°	338.7	338.0	337.2	336.5	335.7	334.7	333.4	332.1	330.6	329.3	329.0
32.5°	328.2	327.7	327.2	326.5	326.0	324.9	323.5	322.2	320.7	319.3	318.8
35°	313.2	312.2	311.3	310.4	309.5	308.4	306.9	305.5	304.1	302.6	302.0
37.5°	296.0	295.2	294.4	293.6	292.8	291.8	290.3	288.9	287.4	286.0	285.3
40°	284.4	283.7	282.9	282.2	281.5	280.4	278.9	277.5	276.1	274.6	273.8
42.5°	273.0	272.3	271.6	270.9	270.2	269.0	267.6	266.2	264.7	263.3	262.4
45°	254.8	254.1	253.5	252.9	252.3	251.3	249.9	248.6	247.3	245.8	244.9
47.5°	236.7	236.0	235.5	234.9	234.3	233.3	231.8	230.5	229.1	227.7	226.6
50°	224.0	223.6	223.1	222.7	222.2	221.3	220.1	218.8	217.6	216.3	215.1
52.5°	211.7	211.1	210.5	209.9	209.3	208.4	207.2	206.1	204.8	203.7	202.6
55°	192.8	192.3	191.7	191.2	190.6	189.8	188.8	187.7	186.6	185.6	184.4
57.5°	173.9	173.4	173.0	172.5	172.1	171.3	170.1	169.0	167.7	166.6	165.5
60°	161.2	160.9	160.5	160.2	159.8	159.0	157.7	156.5	155.2	153.9	152.9
62.5°	148.9	148.3	147.8	147.2	146.6	145.8	144.8	143.9	142.9	142.0	141.0
65°	130.0	129.5	128.9	128.4	127.9	127.2	126.3	125.4	124.5	123.6	122.7
67.5°	110.8	110.4	109.9	109.5	109.1	108.5	107.6	106.8	106.0	105.2	104.6
70°	98.8	98.4	98.1	97.7	97.4	96.8	96.0	95.2	94.3	93.5	92.9
72.5°	86.5	86.1	85.8	85.4	85.1	84.6	84.1	83.6	83.1	82.6	81.9
75°	68.0	67.9	67.7	67.5	67.3	67.1	66.6	66.1	65.6	65.2	64.6
77.5°	51.5	51.2	50.9	50.6	50.3	50.0	49.8	49.7	49.5	49.3	49.0
80°	40.5	40.4	40.3	40.2	40.1	40.0	39.9	39.7	39.5	39.3	39.1
82.5°	30.1	30.1	30.1	30.1	30.1	30.0	29.9	29.8	29.7	29.6	29.2
85°	16.6	16.5	16.4	16.3	16.2	16.1	16.1	16.0	15.9	15.8	15.5
87.5°	6.0	6.2	6.4	6.6	6.8	7.1	7.7	8.2	8.6	9.2	8.9
90°	0.6	2.4	4.2	6.0	7.8	10.3	13.5	16.7	19.9	23.2	22.8
92.5°	11.8	13.1	14.4	15.7	16.9	18.0	18.7	19.5	20.2	21.0	21.1
95°	34.4	35.8	37.4	38.8	40.3	41.2	41.5	41.7	42.1	42.4	42.4
97.5°	62.9	64.1	65.5	66.7	68.0	68.9	69.6	70.1	70.6	71.2	71.2
100°	84.0	85.2	86.4	87.6	88.7	89.5	90.0	90.4	90.9	91.3	91.3
102.5°	106.3	107.2	108.2	109.1	110.0	110.8	111.4	111.9	112.4	113.0	113.2
105°	142.2	142.7	143.1	143.6	144.0	144.4	144.7	145.0	145.3	145.6	145.9
107.5°	178.5	179.1	179.9	180.5	181.1	181.5	181.5	181.5	181.5	181.5	181.6
110°	201.8	202.7	203.6	204.5	205.4	205.8	205.8	205.8	205.8	205.8	205.8



TEST NUMBER: P331476-940

CATALOG NUMBER: S122DIW-S290D710U940-4F0-1E-UDD-F1

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	227.2	228.1	229.0	229.9	230.8	231.1	231.0	230.9	230.8	230.7	230.3
115°	264.7	265.6	266.4	267.3	268.2	268.5	268.2	267.9	267.6	267.3	267.2
117.5°	302.0	303.2	304.3	305.5	306.7	306.8	306.0	305.2	304.4	303.6	303.3
120°	326.9	328.1	329.2	330.4	331.5	331.5	330.4	329.2	328.1	326.9	326.9
122.5°	349.6	351.1	352.5	353.8	355.3	355.6	354.7	353.9	353.1	352.3	352.0
125°	385.1	386.5	387.7	389.1	390.4	390.8	390.4	389.9	389.5	389.1	388.6
127.5°	419.6	421.3	423.0	424.6	426.3	427.0	426.4	425.9	425.3	424.8	424.3
130°	441.3	443.3	445.1	447.1	449.0	449.8	449.5	449.2	448.9	448.6	448.4
132.5°	465.7	467.3	468.9	470.4	471.9	472.8	472.8	472.9	473.0	473.0	472.3
135°	498.3	499.9	501.5	503.1	504.7	505.7	506.0	506.3	506.6	506.8	506.7
137.5°	532.5	533.9	535.2	536.5	537.8	538.7	539.0	539.5	539.8	540.2	540.1
140°	553.2	554.5	555.8	557.1	558.5	559.5	560.3	561.0	561.7	562.4	562.4
142.5°	574.4	575.7	577.0	578.4	579.6	580.6	581.0	581.6	582.0	582.6	582.6
145°	604.8	605.8	606.8	607.9	608.9	609.8	610.7	611.6	612.5	613.4	613.5
147.5°	632.0	633.1	634.4	635.6	636.9	637.8	638.4	638.9	639.5	640.2	640.4
150°	650.4	651.3	652.2	653.1	654.0	654.7	655.3	655.9	656.5	657.1	657.5
152.5°	666.8	667.7	668.6	669.5	670.4	671.2	671.9	672.6	673.3	674.0	674.6
155°	691.4	691.9	692.3	692.8	693.2	693.7	694.1	694.6	695.0	695.4	696.2
157.5°	712.5	712.8	713.1	713.4	713.7	714.0	714.3	714.5	714.8	715.1	716.0
160°	725.2	725.5	725.8	726.1	726.4	726.7	726.7	726.9	727.0	727.2	728.1
162.5°	736.8	736.9	737.0	737.0	737.1	737.2	737.4	737.5	737.6	737.8	738.8
165°	752.3	752.2	752.1	751.9	751.8	751.7	751.7	751.7	751.7	751.7	752.7
167.5°	765.4	764.9	764.5	764.0	763.6	763.3	763.3	763.2	763.2	763.2	764.2
170°	772.2	771.8	771.3	770.9	770.4	770.2	770.0	769.8	769.7	769.5	770.6
172.5°	776.9	776.5	776.1	775.6	775.2	774.9	774.7	774.6	774.5	774.3	775.3
175°	782.7	782.4	781.9	781.5	781.0	780.7	780.3	780.1	779.8	779.4	780.5
177.5°	785.2	784.8	784.4	784.1	783.7	783.5	783.2	783.0	782.7	782.5	783.2
180°	784.1	784.1	784.1	784.1	784.1	784.1	784.1	784.1	784.1	784.1	784.1



TEST NUMBER: P331476-940

CATALOG NUMBER: S122DIW-S290D710U940-4F0-1E-UDD-F1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	421.2	421.2	421.2	421.2	421.2	421.2	421.2	421.2
2.5°	419.5	420.2	420.9	421.2	421.1	420.9	420.8	420.6
5°	416.7	417.4	418.1	418.4	418.2	418.0	417.9	417.7
7.5°	412.0	412.7	413.4	413.7	413.5	413.2	413.0	412.9
10°	407.8	408.5	409.2	409.4	409.1	408.8	408.6	408.3
12.5°	402.8	403.2	403.8	403.9	403.8	403.5	403.3	403.1
15°	394.0	394.4	394.8	394.8	394.3	393.9	393.4	393.0
17.5°	383.7	384.1	384.5	384.5	384.1	383.7	383.3	382.8
20°	375.7	375.9	376.2	376.1	375.8	375.4	375.1	374.7
22.5°	367.1	367.2	367.2	367.1	366.9	366.7	366.5	366.3
25°	353.2	353.4	353.6	353.6	353.4	353.2	353.0	352.8
27.5°	339.5	339.2	338.9	338.6	338.1	337.7	337.3	336.9
30°	328.8	328.5	328.2	328.0	327.6	327.3	326.9	326.5
32.5°	318.3	317.8	317.4	316.9	316.6	316.2	315.8	315.5
35°	301.5	301.0	300.4	300.0	299.5	299.1	298.6	298.1
37.5°	284.6	284.0	283.3	282.8	282.3	281.9	281.5	281.1
40°	273.0	272.2	271.4	270.8	270.5	270.1	269.7	269.4
42.5°	261.5	260.6	259.8	259.0	258.6	258.1	257.6	257.1
45°	243.9	242.9	241.9	241.2	240.9	240.5	240.1	239.8
47.5°	225.6	224.5	223.5	222.7	222.2	221.7	221.1	220.6
50°	213.8	212.5	211.2	210.4	210.0	209.6	209.1	208.7
52.5°	201.6	200.5	199.5	198.7	198.0	197.5	196.9	196.3
55°	183.3	182.3	181.2	180.5	180.0	179.5	179.1	178.6
57.5°	164.4	163.4	162.3	161.6	161.3	161.0	160.6	160.2
60°	151.9	151.0	150.0	149.4	149.1	148.8	148.6	148.3
62.5°	140.1	139.2	138.3	137.7	137.3	137.0	136.6	136.3
65°	121.9	121.1	120.3	119.7	119.2	118.8	118.3	117.9
67.5°	104.0	103.3	102.7	102.2	101.8	101.5	101.1	100.8
70°	92.3	91.7	91.0	90.6	90.2	89.8	89.4	89.1
72.5°	81.3	80.7	80.1	79.5	79.3	79.0	78.7	78.4
75°	64.1	63.6	63.0	62.9	63.0	63.2	63.4	63.6
77.5°	48.8	48.5	48.2	48.0	47.7	47.5	47.3	47.0
80°	38.8	38.5	38.3	38.0	37.8	37.6	37.5	37.3
82.5°	28.9	28.5	28.2	28.0	28.0	27.9	27.9	27.9
85°	15.2	15.0	14.7	14.5	14.4	14.4	14.3	14.2
87.5°	8.6	8.4	8.0	7.9	7.8	7.8	7.8	7.8
90°	22.6	22.3	22.0	21.9	22.0	22.2	22.4	22.5
92.5°	21.1	21.2	21.3	21.3	21.3	21.4	21.4	21.4
95°	42.4	42.4	42.4	42.2	41.9	41.6	41.3	41.0
97.5°	71.2	71.2	71.2	71.2	71.2	71.2	71.1	71.1
100°	91.3	91.3	91.3	91.2	91.1	91.0	90.8	90.7
102.5°	113.2	113.3	113.5	113.5	113.3	113.2	113.1	112.9
105°	146.2	146.4	146.8	146.9	146.9	146.9	146.9	146.9
107.5°	181.6	181.8	181.9	181.6	180.9	180.3	179.6	179.0
110°	205.8	205.8	205.8	205.5	205.1	204.6	204.2	203.8





TEST NUMBER: P331476-940

CATALOG NUMBER: S122DIW-S290D710U940-4F0-1E-UDD-F1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	230.0	229.6	229.3	228.9	228.6	228.3	227.9	227.7
115°	267.1	266.9	266.7	266.4	266.0	265.6	265.1	264.7
117.5°	302.9	302.6	302.2	301.8	301.3	300.9	300.4	300.0
120°	326.9	326.9	326.9	326.6	326.2	325.7	325.3	324.9
122.5°	351.6	351.2	350.9	350.5	350.2	349.9	349.6	349.3
125°	388.2	387.7	387.3	387.0	386.9	386.7	386.6	386.5
127.5°	423.7	423.2	422.7	422.2	421.7	421.2	420.8	420.4
130°	448.1	447.7	447.5	447.0	446.4	445.9	445.2	444.7
132.5°	471.7	471.0	470.4	469.8	469.4	468.9	468.4	468.0
135°	506.6	506.4	506.3	506.0	505.5	505.1	504.6	504.2
137.5°	539.9	539.8	539.8	539.4	538.8	538.2	537.6	537.0
140°	562.4	562.4	562.4	562.1	561.6	561.0	560.4	559.8
142.5°	582.8	582.9	583.0	582.8	582.2	581.6	581.0	580.4
145°	613.7	613.9	613.9	613.8	613.1	612.6	612.0	611.4
147.5°	640.8	641.1	641.4	641.3	640.8	640.2	639.6	639.1
150°	657.9	658.4	658.8	658.8	658.4	657.9	657.5	657.1
152.5°	675.1	675.6	676.3	676.3	675.6	675.1	674.6	674.0
155°	696.9	697.7	698.4	698.6	698.1	697.7	697.2	696.8
157.5°	717.0	718.0	719.0	719.2	718.5	717.7	717.0	716.3
160°	729.0	729.9	730.8	730.8	730.3	729.7	729.2	728.5
162.5°	739.8	740.8	741.8	741.9	741.2	740.6	739.9	739.1
165°	753.8	754.7	755.8	756.0	755.2	754.5	753.8	753.0
167.5°	765.3	766.2	767.3	767.4	766.7	765.9	765.2	764.4
170°	771.6	772.7	773.6	773.7	772.8	772.0	771.1	770.2
172.5°	776.4	777.4	778.5	778.5	777.7	776.8	775.9	775.0
175°	781.5	782.6	783.6	783.6	782.7	781.9	781.0	780.2
177.5°	783.9	784.6	785.3	785.3	784.6	783.9	783.2	782.5
180°	784.1	784.1	784.1	784.1	784.1	784.1	784.1	784.1

(END OF REPORT)