

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: P331474-935

Luminaire Tested: **S122DIW-S290D710U935-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331474-935  
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-S290D710U935-4F0-1E-UDD-D1  
Description: DEFINE 2 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 290 LUMENS PER FOOT, DROP 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: 3149.6 lumens  
Efficiency: N/A  
Efficacy: 103.6 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.32 / 1.42  
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.08')  
CIE Type: Semi-Indirect

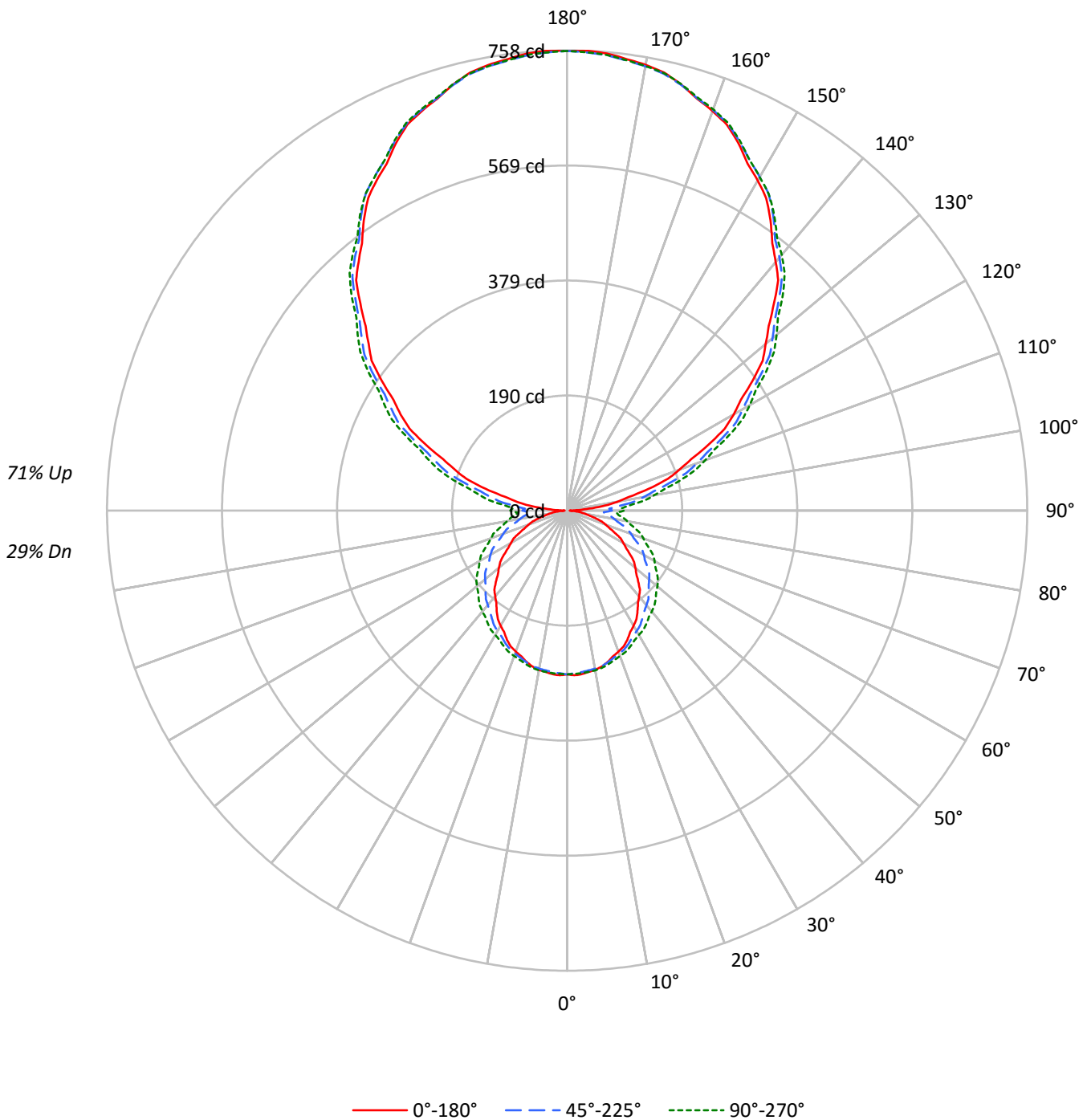
Input Watts (W): 30.4  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P331474-935

CATALOG NUMBER: S122DIW-S290D710U935-4F0-1E-UDD-D1

### Luminous Intensity Polar Plot





TEST NUMBER: P331474-935

CATALOG NUMBER: S122DIW-S290D710U935-4F0-1E-UDD-D1

**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	102	102	102	102	92	92	92	92	72	72	72	54	54	54	37	37	37	29
1	92	88	84	80	82	79	75	72	61	59	57	46	44	43	31	30	29	23
2	84	76	70	64	74	68	63	58	53	50	46	40	37	35	27	25	24	18
3	76	66	59	53	68	60	53	48	47	42	38	35	32	29	24	22	20	15
4	69	58	51	45	62	52	46	40	41	36	32	31	27	25	21	19	17	13
5	63	52	44	38	56	47	40	34	37	32	28	27	24	21	19	16	15	11
6	58	46	38	32	52	42	35	30	33	28	24	25	21	18	17	15	13	9
7	54	42	34	28	48	37	31	26	30	25	21	22	19	16	15	13	11	8
8	50	38	30	25	44	34	27	23	27	22	18	20	17	14	14	12	10	7
9	46	34	27	22	41	31	24	20	24	20	16	19	15	13	13	11	9	7
10	43	31	24	19	38	28	22	18	22	18	14	17	14	11	12	10	8	6

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

	0°	45°	90°
0°	4358	4358	4358
5°	4379	4195	4179
10°	4352	4070	4026
15°	4290	3939	3863
20°	4215	3798	3707
25°	4141	3663	3565
30°	4034	3524	3423
35°	3928	3389	3323
40°	3818	3275	3223
45°	3709	3172	3137
50°	3596	3079	3053
55°	3474	2979	2968
60°	3329	2876	2878
65°	3174	2756	2769
70°	3001	2623	2653
75°	2784	2499	2544
80°	2445	2366	2436
85°	2110	2255	2350



TEST NUMBER: P331474-935

CATALOG NUMBER: S122DIW-S290D710U935-4F0-1E-UDD-D1

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	25.6	0.8
10°-20°	73.3	2.3
20°-30°	111.1	3.5
30°-40°	135.3	4.3
40°-50°	145.6	4.6
50°-60°	141.4	4.5
60°-70°	123.5	3.9
70°-80°	95.1	3.0
80°-90°	66.8	2.1
90°-100°	91.9	2.9
100°-110°	181.1	5.7
110°-120°	275.9	8.8
120°-130°	346.8	11.0
130°-140°	380.9	12.1
140°-150°	369.5	11.7
150°-160°	309.2	9.8
160°-170°	205.1	6.5
170°-180°	71.7	2.3
0°-30°	210.0	6.7
0°-40°	345.4	11.0
0°-60°	632.4	20.1
0°-90°	917.7	29.1
90°-120°	548.9	17.4
90°-150°	1646.0	52.3
90°-180°	2232.0	70.9
0°-180°	3149.6	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	270	270	270	270	270	
5°	271	269	267	269	269	26
15°	258	259	259	262	262	73
25°	235	237	241	245	247	108
35°	202	209	216	225	228	126
45°	166	177	190	202	206	128
55°	127	142	162	175	181	114
65°	87	106	129	145	150	86
75°	48	70	95	111	117	51
85°	14	38	63	79	85	15
90°	5	35	74	88	94	4
95°	36	61	86	100	104	41
105°	139	153	174	189	194	147
115°	257	266	282	292	295	254
125°	373	379	389	397	400	333
135°	482	488	494	501	502	372
145°	584	588	592	595	595	365
155°	668	670	672	674	673	307
165°	726	726	726	730	727	205
175°	756	754	753	757	753	72
180°	757	757	757	757	757	



TEST NUMBER: P331474-935

CATALOG NUMBER: S122DIW-S290D710U935-4F0-1E-UDD-D1

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	269.9	269.9	269.9	269.9	269.9	269.9	269.9	269.9	269.9	269.9	269.9
2.5°	271.5	271.2	271.0	270.8	270.6	270.3	269.8	269.3	268.8	268.3	268.6
5°	270.7	270.4	270.2	269.9	269.6	269.2	268.7	268.2	267.7	267.2	267.7
7.5°	268.2	268.0	267.9	267.7	267.5	267.3	266.8	266.5	266.0	265.6	266.3
10°	266.4	266.2	266.0	265.9	265.7	265.4	265.2	264.9	264.7	264.4	265.1
12.5°	263.2	263.3	263.3	263.4	263.4	263.3	263.1	262.9	262.7	262.5	263.2
15°	258.1	258.3	258.5	258.6	258.8	258.9	258.9	258.9	258.9	258.9	259.7
17.5°	251.6	251.9	252.3	252.7	253.0	253.4	253.7	253.9	254.2	254.5	255.3
20°	247.2	247.6	248.1	248.5	248.9	249.3	249.7	250.0	250.4	250.7	251.7
22.5°	242.5	243.0	243.5	244.0	244.5	245.0	245.5	246.0	246.5	246.9	247.9
25°	234.7	235.3	235.9	236.5	237.1	237.8	238.6	239.4	240.1	240.9	241.9
27.5°	225.3	226.3	227.3	228.3	229.3	230.2	231.1	232.0	233.0	233.9	235.2
30°	219.0	220.2	221.3	222.4	223.5	224.7	225.8	227.0	228.1	229.2	230.6
32.5°	212.2	213.4	214.6	215.9	217.2	218.5	219.9	221.2	222.6	223.9	225.5
35°	202.2	203.7	205.2	206.6	208.1	209.7	211.4	213.0	214.6	216.3	218.2
37.5°	191.4	193.1	194.8	196.6	198.2	200.2	202.3	204.4	206.6	208.7	210.9
40°	184.3	186.1	188.0	189.9	191.8	194.0	196.3	198.7	201.0	203.4	205.6
42.5°	177.4	179.3	181.2	183.0	185.0	187.3	190.0	192.7	195.4	198.0	200.5
45°	165.8	168.2	170.6	172.9	175.2	177.9	181.0	184.0	187.0	190.1	192.8
47.5°	154.5	157.0	159.6	162.1	164.7	167.8	171.3	174.9	178.5	182.0	184.9
50°	146.7	149.4	152.1	154.7	157.5	160.7	164.7	168.6	172.5	176.4	179.3
52.5°	139.1	142.0	144.8	147.7	150.5	153.9	158.1	162.2	166.3	170.5	173.5
55°	127.1	130.3	133.4	136.5	139.7	143.4	148.0	152.5	157.0	161.5	164.7
57.5°	115.2	118.7	122.3	125.8	129.3	133.4	138.0	142.6	147.2	151.9	155.2
60°	106.8	110.6	114.3	118.0	121.7	126.1	131.0	136.0	140.9	145.9	149.2
62.5°	99.3	103.1	107.0	110.9	114.8	119.2	124.2	129.1	134.1	139.1	142.5
65°	86.8	91.1	95.3	99.6	103.8	108.6	113.7	118.8	124.0	129.1	132.7
67.5°	75.4	79.9	84.3	88.8	93.2	98.1	103.3	108.6	113.8	119.1	122.7
70°	67.2	71.8	76.3	80.8	85.3	90.3	95.7	101.1	106.5	111.8	115.6
72.5°	59.8	64.4	69.1	73.7	78.4	83.4	88.9	94.4	99.9	105.3	109.0
75°	48.1	53.0	57.9	62.7	67.6	72.8	78.4	83.9	89.5	95.1	98.8
77.5°	36.9	41.9	47.0	52.1	57.3	62.6	68.3	73.9	79.6	85.2	88.9
80°	29.4	34.6	40.0	45.2	50.5	56.1	61.6	67.3	72.9	78.6	82.2
82.5°	23.1	28.3	33.6	38.7	44.0	49.5	55.2	61.0	66.6	72.3	76.0
85°	14.1	19.5	24.9	30.2	35.6	41.1	46.7	52.3	57.8	63.4	67.0
87.5°	7.8	13.3	18.9	24.4	29.9	35.7	41.9	48.1	54.3	60.4	64.0
90°	4.6	11.3	18.1	24.8	31.5	39.3	48.0	56.7	65.3	74.0	77.1
92.5°	15.0	20.9	26.9	32.8	38.7	44.8	50.9	56.9	63.0	69.1	72.6
95°	36.3	41.8	47.4	52.9	58.4	63.9	69.4	74.9	80.3	85.8	89.2
97.5°	63.5	68.3	73.2	78.1	83.0	88.2	93.8	99.3	104.8	110.4	113.6
100°	83.9	88.3	92.6	96.9	101.3	106.1	111.4	116.7	122.0	127.3	130.5
102.5°	105.0	108.9	112.7	116.6	120.5	125.0	130.3	135.5	140.8	146.0	149.3
105°	139.3	142.2	145.3	148.2	151.1	155.0	159.8	164.6	169.4	174.2	177.5
107.5°	174.3	176.9	179.5	182.2	184.9	188.3	192.6	197.0	201.3	205.6	208.6
110°	196.4	199.1	201.6	204.2	206.8	210.3	214.5	218.7	223.0	227.2	230.1



TEST NUMBER: P331474-935

CATALOG NUMBER: S122DIW-S290D710U935-4F0-1E-UDD-D1

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	220.9	223.3	225.6	227.9	230.2	233.3	237.3	241.3	245.1	249.1	251.5
115°	257.1	258.9	260.7	262.5	264.3	267.1	270.7	274.3	277.9	281.5	284.0
117.5°	292.7	294.5	296.3	298.1	299.8	302.1	305.0	307.7	310.6	313.4	315.6
120°	316.8	318.3	319.8	321.2	322.7	324.6	327.0	329.3	331.7	334.0	336.5
122.5°	338.8	340.3	341.8	343.3	344.7	346.7	349.2	351.7	354.2	356.6	358.7
125°	372.6	373.9	375.2	376.4	377.7	379.5	381.9	384.3	386.6	389.0	390.9
127.5°	406.0	407.5	409.1	410.6	412.1	413.7	415.4	417.2	419.0	420.7	422.3
130°	427.0	428.7	430.4	432.2	433.9	435.6	437.1	438.7	440.2	441.8	443.6
132.5°	450.5	451.9	453.3	454.7	456.2	457.5	459.0	460.5	461.9	463.4	464.8
135°	481.5	483.0	484.6	486.2	487.8	489.1	490.3	491.4	492.6	493.7	495.4
137.5°	514.6	515.8	517.1	518.3	519.6	520.6	521.4	522.1	522.9	523.7	525.1
140°	534.5	535.7	536.9	538.1	539.2	540.3	541.2	542.1	542.9	543.9	545.3
142.5°	555.0	556.1	557.3	558.5	559.7	560.6	561.1	561.6	562.1	562.7	563.9
145°	583.9	585.0	585.9	586.9	588.0	588.8	589.7	590.6	591.4	592.3	593.0
147.5°	610.2	611.3	612.5	613.7	614.9	615.8	616.4	616.9	617.5	618.1	618.5
150°	628.0	628.9	629.7	630.6	631.5	632.1	632.7	633.3	633.9	634.5	634.9
152.5°	643.9	644.7	645.6	646.4	647.3	648.1	648.8	649.5	650.1	650.8	651.3
155°	667.6	668.0	668.5	668.9	669.3	669.8	670.2	670.6	671.1	671.5	672.2
157.5°	687.9	688.3	688.5	688.8	689.1	689.4	689.7	689.9	690.2	690.4	691.4
160°	700.3	700.5	700.8	701.1	701.4	701.6	701.7	701.9	702.0	702.1	703.0
162.5°	711.4	711.5	711.6	711.6	711.7	711.8	712.0	712.1	712.2	712.4	713.3
165°	726.4	726.3	726.2	726.0	725.9	725.8	725.8	725.8	725.8	725.8	726.8
167.5°	739.0	738.6	738.1	737.7	737.3	737.0	737.0	736.9	736.9	736.9	737.9
170°	745.6	745.2	744.8	744.3	743.9	743.6	743.5	743.3	743.2	743.0	744.1
172.5°	750.2	749.8	749.3	748.9	748.5	748.2	748.0	748.0	747.8	747.6	748.6
175°	755.8	755.4	755.0	754.6	754.1	753.8	753.5	753.2	752.9	752.6	753.6
177.5°	758.1	757.8	757.4	757.1	756.7	756.5	756.2	756.0	755.8	755.5	756.2
180°	757.1	757.1	757.1	757.1	757.1	757.1	757.1	757.1	757.1	757.1	757.1



TEST NUMBER: P331474-935

CATALOG NUMBER: S122DIW-S290D710U935-4F0-1E-UDD-D1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	269.9	269.9	269.9	269.9	269.9	269.9	269.9	269.9
2.5°	269.0	269.3	269.7	269.8	269.7	269.5	269.4	269.2
5°	268.2	268.7	269.2	269.4	269.3	269.2	269.1	269.1
7.5°	266.9	267.5	268.2	268.5	268.4	268.3	268.2	268.1
10°	265.8	266.5	267.2	267.5	267.4	267.3	267.3	267.2
12.5°	263.9	264.6	265.3	265.6	265.5	265.4	265.4	265.3
15°	260.5	261.3	262.1	262.4	262.3	262.3	262.2	262.1
17.5°	256.1	256.9	257.7	258.1	258.1	258.1	258.1	258.1
20°	252.6	253.6	254.5	255.0	255.0	255.0	255.0	255.0
22.5°	248.9	249.9	250.8	251.3	251.5	251.6	251.8	251.9
25°	243.1	244.1	245.1	245.7	246.0	246.2	246.5	246.8
27.5°	236.5	237.9	239.2	240.0	240.1	240.3	240.5	240.7
30°	232.0	233.4	234.8	235.6	235.8	236.1	236.3	236.6
32.5°	227.0	228.7	230.3	231.4	231.8	232.3	232.7	233.2
35°	220.2	222.1	223.9	225.2	225.8	226.4	227.0	227.6
37.5°	212.9	215.1	217.2	218.6	219.2	219.9	220.5	221.1
40°	207.9	210.2	212.4	214.0	214.7	215.5	216.3	217.1
42.5°	203.0	205.4	207.9	209.6	210.3	211.1	211.9	212.7
45°	195.4	198.2	200.9	202.7	203.5	204.4	205.3	206.1
47.5°	187.7	190.5	193.3	195.2	196.1	197.1	198.0	199.0
50°	182.3	185.3	188.2	190.2	191.1	192.1	193.0	194.0
52.5°	176.5	179.5	182.5	184.6	185.6	186.7	187.7	188.6
55°	167.8	170.9	174.1	176.2	177.3	178.5	179.6	180.7
57.5°	158.6	162.0	165.3	167.6	168.8	169.9	171.0	172.2
60°	152.5	155.8	159.1	161.4	162.6	163.8	165.1	166.3
62.5°	146.0	149.6	153.1	155.4	156.5	157.6	158.9	160.0
65°	136.2	139.7	143.4	145.7	146.8	147.9	149.0	150.2
67.5°	126.2	129.8	133.5	135.9	137.0	138.2	139.4	140.6
70°	119.3	123.0	126.8	129.2	130.3	131.3	132.3	133.4
72.5°	112.6	116.3	119.9	122.4	123.6	124.9	126.2	127.4
75°	102.5	106.2	110.0	112.4	113.6	114.7	115.8	116.9
77.5°	92.6	96.3	100.0	102.5	103.8	105.0	106.2	107.4
80°	85.9	89.5	93.2	95.7	96.9	98.1	99.3	100.5
82.5°	79.6	83.3	87.0	89.4	90.5	91.7	92.8	93.9
85°	70.7	74.3	78.0	80.4	81.6	82.8	84.0	85.2
87.5°	67.5	70.9	74.5	76.7	77.9	79.0	80.2	81.3
90°	80.4	83.6	86.8	88.9	90.1	91.4	92.5	93.7
92.5°	76.0	79.6	83.0	85.2	86.4	87.4	88.5	89.5
95°	92.5	95.7	99.1	101.1	101.9	102.6	103.4	104.2
97.5°	116.8	120.0	123.2	125.4	126.3	127.3	128.3	129.3
100°	133.7	136.9	140.2	142.2	143.0	143.8	144.6	145.4
102.5°	152.6	155.8	159.1	161.1	162.0	162.7	163.6	164.4
105°	180.8	184.2	187.5	189.7	190.6	191.6	192.5	193.5
107.5°	211.7	214.7	217.7	219.4	219.7	220.1	220.3	220.7
110°	232.8	235.6	238.4	240.0	240.6	241.1	241.6	242.1





TEST NUMBER: P331474-935

CATALOG NUMBER: S122DIW-S290D710U935-4F0-1E-UDD-D1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	254.0	256.4	258.8	260.4	261.1	261.7	262.3	262.9
115°	286.5	289.0	291.4	292.9	293.5	294.0	294.5	295.1
117.5°	317.9	320.1	322.4	323.6	324.2	324.6	325.0	325.5
120°	338.9	341.3	343.7	345.3	345.8	346.3	346.8	347.3
122.5°	360.7	362.7	364.7	366.0	366.5	367.0	367.6	368.1
125°	392.8	394.8	396.7	398.0	398.6	399.2	399.8	400.5
127.5°	424.0	425.6	427.2	428.2	428.5	428.9	429.1	429.5
130°	445.4	447.2	449.0	450.0	450.0	450.2	450.3	450.5
132.5°	466.2	467.6	469.0	469.8	470.0	470.3	470.5	470.8
135°	497.1	498.8	500.4	501.4	501.7	502.0	502.2	502.5
137.5°	526.6	528.1	529.6	530.4	530.4	530.4	530.4	530.5
140°	546.6	548.0	549.4	550.1	550.0	550.0	549.9	549.9
142.5°	565.1	566.4	567.6	568.1	568.0	567.9	567.7	567.7
145°	593.6	594.3	595.0	595.2	595.0	595.0	594.8	594.7
147.5°	618.8	619.2	619.6	619.7	619.3	619.0	618.6	618.3
150°	635.2	635.7	636.1	636.1	635.7	635.2	634.9	634.5
152.5°	651.9	652.4	653.0	653.0	652.4	651.9	651.3	650.8
155°	672.9	673.6	674.3	674.5	674.1	673.6	673.2	672.8
157.5°	692.3	693.3	694.2	694.4	693.7	693.0	692.3	691.6
160°	703.9	704.7	705.6	705.7	705.2	704.6	704.0	703.4
162.5°	714.3	715.3	716.3	716.4	715.7	715.1	714.4	713.7
165°	727.8	728.8	729.8	730.0	729.2	728.5	727.8	727.1
167.5°	738.9	739.9	740.9	741.0	740.3	739.5	738.8	738.0
170°	745.0	746.1	747.0	747.1	746.2	745.4	744.5	743.6
172.5°	749.7	750.6	751.7	751.7	750.9	750.0	749.2	748.3
175°	754.6	755.6	756.6	756.6	755.8	755.0	754.1	753.3
177.5°	756.9	757.6	758.3	758.3	757.6	756.9	756.2	755.5
180°	757.1	757.1	757.1	757.1	757.1	757.1	757.1	757.1

(END OF REPORT)