

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: P331492-935

Luminaire Tested: **S122DIW-S290D1440U935-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P331492-935
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-S290D1440U935-4F0-1E-UDD-D1
Description: DEFINE 2 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 290 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 1440 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5336.7 lumens
Efficiency: N/A
Efficacy: 99.9 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

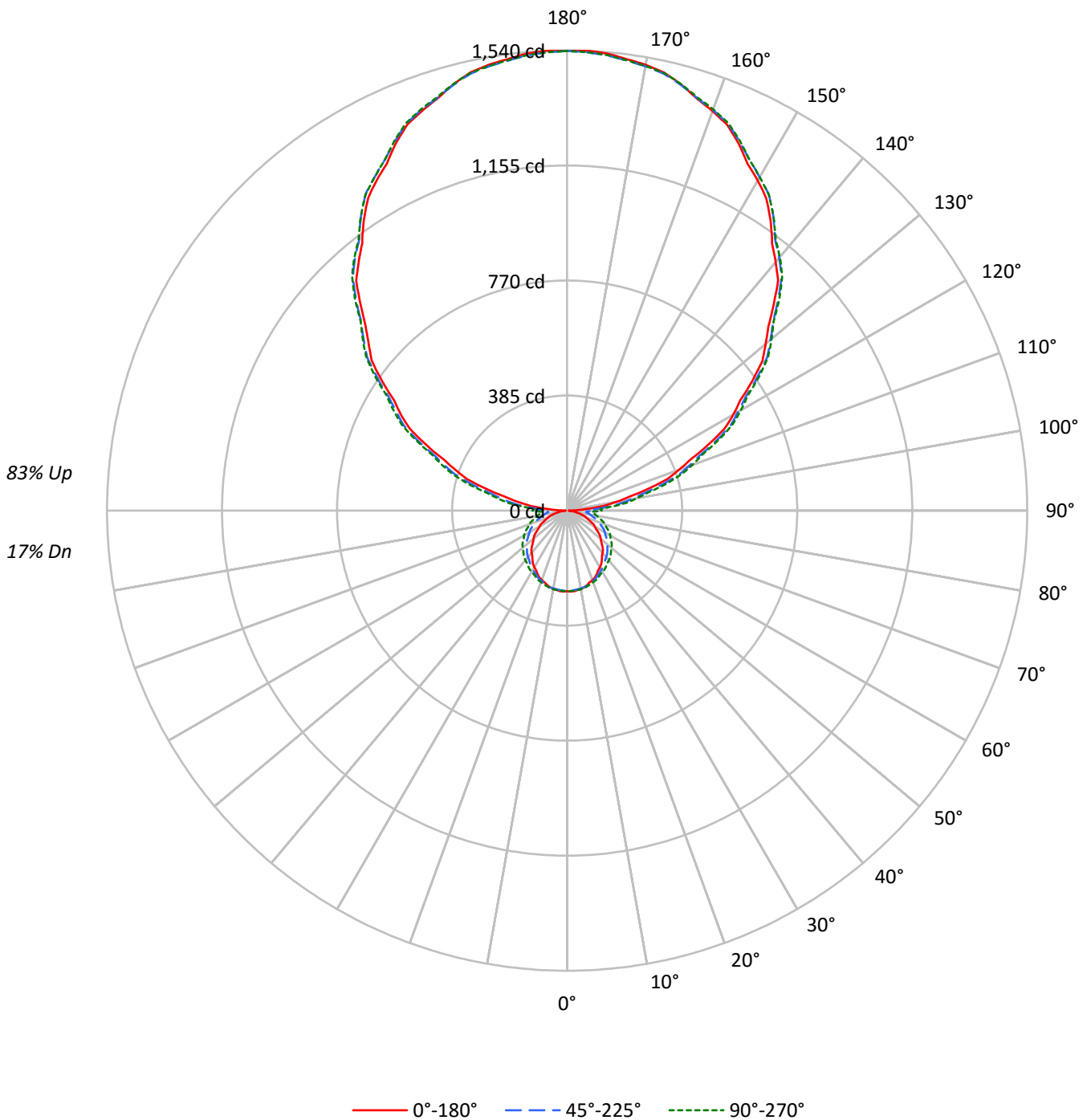
Input Watts (W): 53.4
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P331492-935

CATALOG NUMBER: S122DIW-S290D1440U935-4F0-1E-UDD-D1

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	50	30	10	50	30	10	50	30	10	50	30	10	0																
RCR																																														
0	99	99	99	99	87	87	87	87	65	65	65	45	45	45	26	26	26	17																												
1	90	86	82	78	79	75	72	69	56	54	52	38	37	36	22	21	21	13																												
2	82	74	68	63	71	65	60	56	49	45	43	33	31	30	19	18	17	11																												
3	74	65	58	52	65	57	51	47	43	39	35	29	27	25	17	15	14	9																												
4	68	57	50	44	59	51	44	39	38	33	30	26	23	21	15	13	12	8																												
5	62	51	43	37	54	45	38	33	34	29	25	23	20	18	13	12	10	6																												
6	57	45	37	32	50	40	33	29	30	25	22	21	18	15	12	10	9	6																												
7	52	41	33	28	46	36	29	25	27	22	19	19	16	13	11	9	8	5																												
8	48	37	29	24	42	32	26	22	24	20	17	17	14	12	10	8	7	4																												
9	45	33	26	21	39	29	23	19	22	18	15	15	13	10	9	7	6	4																												
10	42	30	23	19	37	27	21	17	20	16	13	14	11	9	8	7	6	4																												

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



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CATALOG NUMBER: S122DIW-S290D1440U935-4F0-1E-UDD-D1

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	25.6	0.5
10°-20°	73.3	1.4
20°-30°	111.1	2.1
30°-40°	135.3	2.5
40°-50°	145.6	2.7
50°-60°	141.4	2.6
60°-70°	123.5	2.3
70°-80°	95.1	1.8
80°-90°	69.9	1.3
90°-100°	141.4	2.6
100°-110°	334.8	6.3
110°-120°	538.6	10.1
120°-130°	692.3	13.0
130°-140°	768.7	14.4
140°-150°	749.7	14.0
150°-160°	628.1	11.8
160°-170°	416.6	7.8
170°-180°	145.6	2.7
0°-30°	210.0	3.9
0°-40°	345.4	6.5
0°-60°	632.4	11.9
0°-90°	920.9	17.3
90°-120°	1014.8	19.0
90°-150°	3225.5	60.4
90°-180°	4416.0	82.7
0°-180°	5336.7	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	44	97	110	116	6
95°	71	102	128	142	145	80
105°	281	297	319	335	340	297
115°	521	533	548	558	559	515
125°	756	768	776	783	785	676
135°	978	992	999	1005	1005	755
145°	1186	1195	1203	1206	1204	741
155°	1356	1360	1364	1370	1367	624
165°	1476	1475	1474	1483	1477	416
175°	1536	1532	1529	1537	1530	146
180°	1538	1538	1538	1538	1538	



TEST NUMBER: P331492-935

CATALOG NUMBER: S122DIW-S290D1440U935-4F0-1E-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°	7.9	13.8	19.6	25.6	31.4	37.8	44.6	51.4	58.3	65.1	68.5
90°	5.3	13.7	22.2	30.7	39.3	49.4	61.3	73.3	85.2	97.0	100.0
92.5°	26.7	33.9	41.2	48.4	55.6	62.7	69.6	76.4	83.3	90.1	93.6
95°	70.6	77.6	84.6	91.5	98.5	104.9	110.6	116.5	122.3	128.0	131.4
97.5°	126.1	132.2	138.4	144.6	150.8	156.9	163.0	169.1	175.2	181.2	184.5
100°	167.6	173.1	178.7	184.2	189.7	195.3	201.0	206.8	212.5	218.3	221.4
102.5°	210.9	215.7	220.4	225.2	230.1	235.3	241.2	246.9	252.8	258.6	262.0
105°	281.0	284.4	287.8	291.2	294.5	298.9	303.9	309.0	314.1	319.2	322.8
107.5°	352.1	355.3	358.7	362.0	365.2	369.0	373.3	377.7	382.0	386.3	389.5
110°	397.4	401.0	404.4	407.9	411.3	415.2	419.5	423.7	428.0	432.2	435.0



TEST NUMBER: P331492-935

CATALOG NUMBER: S122DIW-S290D1440U935-4F0-1E-UDD-D1

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	447.3	450.5	453.7	456.8	460.0	463.6	467.4	471.2	475.0	478.9	481.0
115°	520.7	523.5	526.2	528.8	531.5	534.5	537.9	541.2	544.5	547.9	550.2
117.5°	593.6	596.5	599.4	602.4	605.3	607.8	609.8	611.8	613.8	615.8	617.7
120°	642.4	645.1	647.7	650.3	653.0	655.0	656.1	657.3	658.4	659.6	662.0
122.5°	687.1	689.9	692.8	695.8	698.7	700.9	702.6	704.3	705.9	707.6	709.2
125°	756.2	758.8	761.4	764.1	766.6	768.9	770.8	772.7	774.6	776.5	778.0
127.5°	824.0	827.2	830.3	833.6	836.8	839.0	840.2	841.4	842.6	843.8	844.9
130°	866.6	870.2	873.9	877.5	881.2	883.6	884.9	886.1	887.4	888.6	890.2
132.5°	914.3	917.3	920.2	923.3	926.2	928.4	930.0	931.5	933.0	934.5	935.3
135°	977.8	980.9	984.1	987.3	990.5	992.8	994.2	995.7	997.1	998.6	1000.1
137.5°	1045.0	1047.6	1050.2	1052.7	1055.3	1057.2	1058.3	1059.5	1060.6	1061.7	1063.1
140°	1085.5	1088.0	1090.5	1093.0	1095.5	1097.6	1099.2	1100.9	1102.5	1104.1	1105.4
142.5°	1127.0	1129.5	1132.0	1134.6	1137.1	1138.8	1139.9	1140.9	1141.9	1142.9	1144.3
145°	1186.4	1188.4	1190.4	1192.4	1194.5	1196.4	1198.1	1199.8	1201.5	1203.2	1204.0
147.5°	1239.6	1242.0	1244.4	1246.9	1249.3	1251.1	1252.2	1253.4	1254.6	1255.7	1256.4
150°	1275.9	1277.6	1279.4	1281.2	1282.9	1284.3	1285.5	1286.6	1287.8	1288.9	1289.8
152.5°	1308.1	1309.8	1311.6	1313.3	1315.1	1316.6	1318.0	1319.4	1320.8	1322.2	1323.3
155°	1356.4	1357.3	1358.1	1359.0	1359.9	1360.7	1361.6	1362.4	1363.3	1364.2	1365.6
157.5°	1397.7	1398.3	1398.9	1399.5	1400.0	1400.6	1401.1	1401.6	1402.1	1402.7	1404.5
160°	1422.6	1423.2	1423.7	1424.4	1425.0	1425.4	1425.6	1425.9	1426.2	1426.5	1428.2
162.5°	1445.4	1445.6	1445.7	1445.8	1446.0	1446.1	1446.4	1446.7	1447.0	1447.3	1449.2
165°	1475.8	1475.6	1475.2	1475.0	1474.7	1474.5	1474.5	1474.5	1474.5	1474.5	1476.5
167.5°	1501.2	1500.4	1499.5	1498.7	1497.8	1497.4	1497.3	1497.3	1497.2	1497.1	1499.2
170°	1514.8	1513.9	1513.0	1512.2	1511.3	1510.7	1510.5	1510.2	1509.8	1509.6	1511.6
172.5°	1524.1	1523.3	1522.4	1521.6	1520.7	1520.1	1519.8	1519.5	1519.2	1518.9	1521.0
175°	1535.5	1534.6	1533.8	1532.9	1532.1	1531.4	1530.8	1530.2	1529.7	1529.0	1531.1
177.5°	1540.2	1539.6	1538.9	1538.2	1537.5	1536.9	1536.4	1535.9	1535.5	1535.0	1536.4
180°	1538.2	1538.2	1538.2	1538.2	1538.2	1538.2	1538.2	1538.2	1538.2	1538.2	1538.2



TEST NUMBER: P331492-935

CATALOG NUMBER: S122DIW-S290D1440U935-4F0-1E-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°	72.0	75.4	78.8	81.1	82.3	83.4	84.6	85.8
90°	102.9	105.7	108.7	110.8	112.1	113.5	114.8	116.1
92.5°	97.1	100.7	104.2	106.5	107.6	108.7	109.8	110.9
95°	134.7	137.9	141.3	143.2	143.6	144.0	144.6	145.0
97.5°	187.7	191.0	194.2	196.2	197.2	198.2	199.1	200.1
100°	224.6	227.9	231.1	233.1	233.7	234.4	235.1	235.7
102.5°	265.4	268.7	272.2	274.1	274.8	275.5	276.1	276.8
105°	326.4	330.0	333.6	336.0	336.9	337.9	338.8	339.8
107.5°	392.6	395.8	399.0	400.4	399.9	399.6	399.2	398.8
110°	437.8	440.6	443.3	444.8	444.9	445.0	445.1	445.1



TEST NUMBER: P331492-935

CATALOG NUMBER: S122DIW-S290D1440U935-4F0-1E-UDD-D1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	483.0	485.1	487.2	488.4	488.7	489.0	489.4	489.7
115°	552.5	554.8	557.2	558.4	558.4	558.5	558.6	558.7
117.5°	619.6	621.5	623.3	624.2	624.3	624.3	624.3	624.3
120°	664.4	666.9	669.3	670.6	670.7	670.8	670.9	671.0
122.5°	710.9	712.6	714.3	715.1	715.4	715.6	715.7	715.9
125°	779.5	781.0	782.5	783.4	783.9	784.5	784.9	785.4
127.5°	846.0	847.1	848.3	848.8	848.6	848.4	848.3	848.1
130°	891.7	893.2	894.7	895.2	894.8	894.3	893.8	893.4
132.5°	936.1	936.8	937.5	937.8	937.5	937.4	937.1	936.9
135°	1001.7	1003.2	1004.7	1005.4	1005.2	1005.0	1004.9	1004.7
137.5°	1064.5	1065.8	1067.2	1067.6	1067.0	1066.5	1065.9	1065.3
140°	1106.9	1108.3	1109.7	1110.0	1109.4	1108.8	1108.1	1107.5
142.5°	1145.6	1146.9	1148.3	1148.7	1147.9	1147.2	1146.5	1145.8
145°	1204.9	1205.7	1206.5	1206.5	1205.8	1205.1	1204.4	1203.7
147.5°	1257.1	1257.8	1258.5	1258.4	1257.5	1256.6	1255.8	1254.9
150°	1290.6	1291.5	1292.4	1292.4	1291.5	1290.6	1289.8	1288.9
152.5°	1324.3	1325.4	1326.5	1326.5	1325.4	1324.3	1323.3	1322.2
155°	1367.1	1368.6	1369.9	1370.3	1369.4	1368.6	1367.7	1366.8
157.5°	1406.5	1408.5	1410.5	1410.7	1409.4	1408.0	1406.6	1405.2
160°	1429.9	1431.7	1433.4	1433.7	1432.5	1431.4	1430.3	1429.1
162.5°	1451.2	1453.2	1455.1	1455.4	1454.1	1452.7	1451.3	1449.8
165°	1478.6	1480.6	1482.6	1482.9	1481.4	1480.1	1478.6	1477.1
167.5°	1501.2	1503.2	1505.2	1505.5	1504.0	1502.4	1501.0	1499.4
170°	1513.6	1515.6	1517.7	1517.8	1516.0	1514.3	1512.6	1510.9
172.5°	1522.9	1525.0	1527.0	1527.2	1525.4	1523.7	1522.0	1520.3
175°	1533.1	1535.1	1537.1	1537.3	1535.5	1533.8	1532.1	1530.3
177.5°	1537.8	1539.2	1540.6	1540.6	1539.2	1537.8	1536.4	1535.0
180°	1538.2	1538.2	1538.2	1538.2	1538.2	1538.2	1538.2	1538.2

(END OF REPORT)