

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: P331281-927

Luminaire Tested: **S122DIP-S290D1080U927-4F0-1E-UDD-D4**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331281-927  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-16,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S122DIP-S290D1080U927-4F0-1E-UDD-D4  
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 290 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 1080 LUMENS PER FOOT, BATWING OPTIC  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4281.6 lumens  
Efficiency: N/A  
Efficacy: 101.5 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

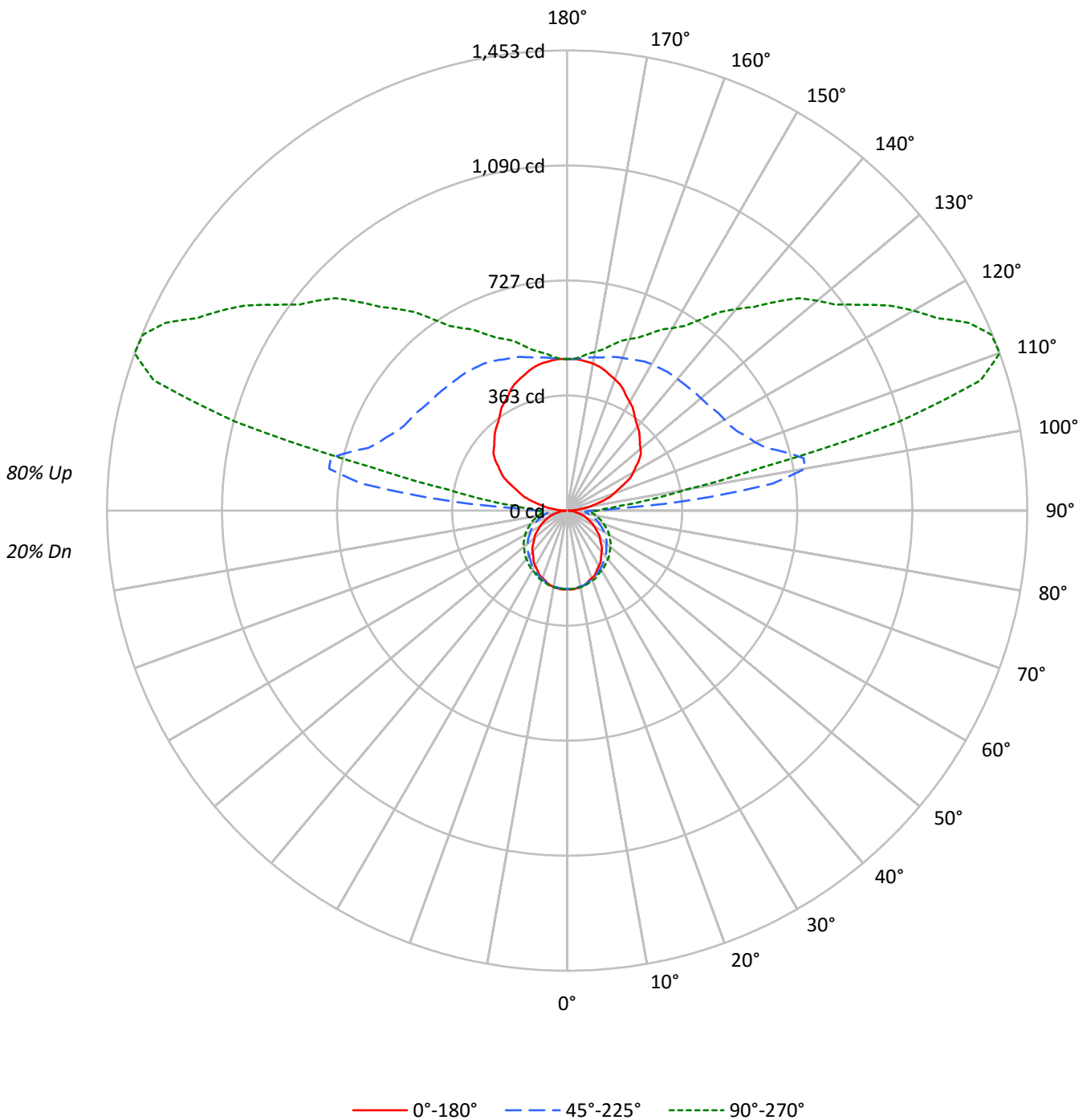
Input Watts (W): 42.2  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P331281-927

CATALOG NUMBER: S122DIP-S290D1080U927-4F0-1E-UDD-D4

### Luminous Intensity Polar Plot





TEST NUMBER: P331281-927

CATALOG NUMBER: S122DIP-S290D1080U927-4F0-1E-UDD-D4

**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	0	
RCR																						
0	100	100	100	100	88	88	88	88	67	67	67	47	47	47	28	28	28	20				
1	90	86	82	79	80	76	73	70	57	55	53	40	39	37	24	23	23	15				
2	82	75	69	64	72	66	61	57	50	46	43	35	33	31	21	20	19	12				
3	75	65	58	53	65	58	52	47	44	39	36	30	28	26	18	17	16	10				
4	68	58	50	44	60	51	44	39	38	34	30	27	24	22	16	15	13	9				
5	62	51	43	37	55	45	38	33	34	30	26	24	21	19	14	13	11	7				
6	57	45	38	32	50	40	34	29	31	26	22	21	18	16	13	11	10	6				
7	53	41	33	28	46	36	30	25	28	23	19	19	16	14	12	10	9	6				
8	49	37	29	24	43	33	26	22	25	20	17	18	15	12	11	9	8	5				
9	45	33	26	21	40	30	23	19	23	18	15	16	13	11	10	8	7	4				
10	42	30	23	19	37	27	21	17	21	16	13	15	12	10	9	7	6	4				

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

	0°	45°	90°
0°	4009	4009	4009
5°	4030	3859	3845
10°	4004	3746	3703
15°	3948	3624	3554
20°	3878	3495	3410
25°	3809	3371	3279
30°	3712	3242	3150
35°	3615	3118	3059
40°	3511	3013	2965
45°	3413	2919	2886
50°	3309	2833	2810
55°	3196	2741	2731
60°	3061	2646	2648
65°	2922	2534	2548
70°	2764	2415	2440
75°	2564	2299	2342
80°	2245	2177	2240
85°	1945	2073	2163



TEST NUMBER: P331281-927

CATALOG NUMBER: S122DIP-S290D1080U927-4F0-1E-UDD-D4

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	23.5	0.5
10°-20°	67.5	1.6
20°-30°	102.2	2.4
30°-40°	124.5	2.9
40°-50°	134.0	3.1
50°-60°	130.1	3.0
60°-70°	113.6	2.7
70°-80°	87.5	2.0
80°-90°	63.0	1.5
90°-100°	231.8	5.4
100°-110°	678.8	15.9
110°-120°	709.3	16.6
120°-130°	578.7	13.5
130°-140°	460.6	10.8
140°-150°	345.4	8.1
150°-160°	242.2	5.7
160°-170°	142.6	3.3
170°-180°	46.4	1.1
0°-30°	193.2	4.5
0°-40°	317.8	7.4
0°-60°	581.9	13.6
0°-90°	845.9	19.8
90°-120°	1619.9	37.8
90°-150°	3004.6	70.2
90°-180°	3436.0	80.3
0°-180°	4281.6	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	248	248	248	248	248	
5°	249	248	246	248	248	24
15°	238	238	238	241	241	67
25°	216	218	222	226	227	99
35°	186	192	199	207	210	116
45°	153	162	175	186	190	118
55°	117	130	149	161	166	105
65°	80	98	119	133	138	79
75°	44	65	88	102	108	47
85°	13	35	58	73	78	14
90°	4	37	79	91	97	4
95°	35	99	402	191	164	36
105°	114	182	713	1262	1085	121
115°	199	256	592	1210	1401	197
125°	277	328	561	975	1132	246
135°	324	387	546	813	932	251
145°	370	425	539	672	736	232
155°	421	454	524	592	616	193
165°	458	472	502	532	540	129
175°	478	478	482	488	487	45
180°	479	479	479	479	479	



TEST NUMBER: P331281-927

CATALOG NUMBER: S122DIP-S290D1080U927-4F0-1E-UDD-D4

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	248.3	248.3	248.3	248.3	248.3	248.3	248.3	248.3	248.3	248.3	248.3
2.5°	249.8	249.5	249.4	249.1	249.0	248.7	248.2	247.8	247.3	246.8	247.2
5°	249.1	248.8	248.6	248.3	248.0	247.7	247.2	246.8	246.3	245.8	246.3
7.5°	246.8	246.6	246.4	246.3	246.1	245.9	245.5	245.2	244.8	244.4	245.0
10°	245.1	244.9	244.8	244.6	244.5	244.2	244.0	243.8	243.5	243.3	243.9
12.5°	242.2	242.2	242.2	242.3	242.3	242.2	242.1	241.9	241.7	241.5	242.2
15°	237.5	237.7	237.8	238.0	238.1	238.2	238.2	238.2	238.2	238.2	238.9
17.5°	231.5	231.8	232.1	232.5	232.8	233.1	233.4	233.6	233.9	234.2	234.9
20°	227.4	227.8	228.2	228.6	229.0	229.4	229.7	230.0	230.4	230.7	231.6
22.5°	223.2	223.6	224.0	224.5	225.0	225.5	225.9	226.3	226.8	227.2	228.1
25°	215.9	216.5	217.1	217.6	218.2	218.8	219.5	220.2	220.9	221.7	222.6
27.5°	207.3	208.2	209.1	210.0	211.0	211.8	212.6	213.5	214.4	215.2	216.4
30°	201.5	202.6	203.6	204.6	205.7	206.8	207.8	208.8	209.8	210.9	212.1
32.5°	195.2	196.4	197.5	198.7	199.9	201.1	202.3	203.5	204.8	206.0	207.5
35°	186.1	187.4	188.8	190.1	191.5	192.9	194.5	196.0	197.5	199.0	200.7
37.5°	176.1	177.7	179.3	180.9	182.4	184.2	186.2	188.1	190.0	192.0	194.0
40°	169.5	171.3	173.0	174.8	176.5	178.5	180.6	182.8	185.0	187.1	189.2
42.5°	163.2	164.9	166.7	168.4	170.2	172.3	174.8	177.3	179.7	182.2	184.5
45°	152.6	154.7	156.9	159.1	161.2	163.7	166.5	169.3	172.1	174.9	177.4
47.5°	142.1	144.5	146.9	149.2	151.5	154.4	157.6	160.9	164.2	167.5	170.1
50°	135.0	137.4	139.9	142.4	144.9	147.9	151.5	155.1	158.7	162.3	165.0
52.5°	128.0	130.6	133.2	135.9	138.5	141.6	145.4	149.2	153.0	156.9	159.6
55°	116.9	119.9	122.7	125.6	128.5	132.0	136.2	140.3	144.5	148.6	151.5
57.5°	106.0	109.2	112.5	115.7	119.0	122.7	127.0	131.2	135.5	139.7	142.8
60°	98.2	101.7	105.1	108.5	112.0	116.0	120.6	125.1	129.7	134.2	137.3
62.5°	91.3	94.9	98.5	102.0	105.6	109.6	114.2	118.7	123.3	127.9	131.1
65°	79.9	83.8	87.7	91.7	95.5	99.9	104.6	109.3	114.1	118.7	122.1
67.5°	69.4	73.5	77.6	81.7	85.8	90.2	95.1	99.9	104.7	109.6	112.9
70°	61.9	66.1	70.2	74.4	78.5	83.1	88.0	93.0	98.0	102.9	106.4
72.5°	55.0	59.3	63.5	67.8	72.2	76.8	81.8	86.8	91.9	96.9	100.3
75°	44.3	48.7	53.2	57.7	62.2	66.9	72.1	77.2	82.3	87.5	90.9
77.5°	33.9	38.6	43.3	47.9	52.7	57.6	62.8	68.0	73.2	78.3	81.8
80°	27.0	31.8	36.8	41.6	46.5	51.6	56.7	61.9	67.1	72.3	75.7
82.5°	21.2	26.1	30.9	35.6	40.5	45.6	50.8	56.1	61.3	66.5	69.9
85°	13.0	17.9	22.9	27.8	32.8	37.8	42.9	48.1	53.2	58.3	61.6
87.5°	7.2	12.5	18.1	23.2	28.4	33.8	39.8	46.3	52.5	57.8	60.8
90°	4.5	11.9	20.2	26.7	33.2	40.8	50.5	62.1	72.7	78.8	81.0
92.5°	14.6	23.8	34.8	43.2	53.7	67.0	92.7	126.9	158.0	164.5	149.1
95°	35.1	42.5	55.5	67.5	86.0	112.4	159.5	244.4	355.9	402.1	360.0
97.5°	55.0	63.3	76.4	92.2	112.5	141.5	199.3	315.4	497.5	654.1	687.3
100°	73.4	79.1	90.3	108.1	129.4	158.9	212.1	328.8	532.1	763.0	898.5
102.5°	90.0	94.7	105.8	123.2	145.0	174.3	223.7	327.9	516.3	764.7	975.9
105°	114.1	120.1	128.8	145.0	167.5	196.5	243.9	330.0	486.0	712.9	960.4
107.5°	140.5	145.3	153.4	167.9	189.9	218.7	264.7	340.1	469.6	657.7	876.5
110°	157.9	163.2	170.3	183.9	204.8	234.2	278.6	348.8	465.0	630.9	823.9



TEST NUMBER: P331281-927

CATALOG NUMBER: S122DIP-S290D1080U927-4F0-1E-UDD-D4

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	174.0	179.1	186.7	199.3	219.2	249.1	291.9	358.2	463.9	612.7	786.6
115°	199.3	204.8	211.2	223.1	242.4	269.5	312.7	372.4	465.2	592.2	740.0
117.5°	225.1	229.3	235.4	245.7	264.0	291.7	331.7	387.6	469.2	580.5	709.4
120°	241.3	245.3	251.1	259.7	278.5	305.9	345.1	397.9	472.0	573.7	692.8
122.5°	256.7	259.8	265.5	274.6	293.1	321.2	357.9	406.9	475.6	569.0	678.5
125°	276.8	279.6	285.1	296.1	314.5	341.6	377.2	421.2	480.9	560.7	657.7
127.5°	293.0	296.6	304.3	316.3	333.9	361.4	395.7	434.9	486.6	555.0	638.3
130°	302.5	306.2	315.3	328.1	346.4	373.0	406.9	443.5	491.2	551.8	625.5
132.5°	311.4	315.8	325.6	339.1	358.2	384.6	416.6	452.1	495.7	549.3	614.9
135°	324.3	328.0	339.0	352.8	374.0	400.1	430.4	463.4	501.1	546.0	600.2
137.5°	336.8	341.2	352.2	366.9	387.9	412.0	441.4	471.8	505.6	543.8	589.1
140°	346.3	350.0	360.9	375.6	395.8	419.7	447.5	476.2	507.6	541.9	582.7
142.5°	355.9	358.8	369.1	383.7	403.1	425.6	452.4	480.3	509.4	541.2	576.7
145°	369.9	373.6	382.9	396.6	415.0	435.3	460.1	485.9	511.7	539.2	569.2
147.5°	385.4	388.2	397.0	409.7	425.0	443.0	466.4	489.0	512.4	536.0	561.8
150°	395.7	398.5	405.8	417.8	431.6	448.1	469.4	490.5	511.7	533.8	555.8
152.5°	406.0	407.3	414.6	425.2	438.2	453.3	472.3	491.2	510.2	530.0	550.6
155°	420.6	421.4	427.0	437.1	447.3	461.1	476.7	492.3	507.9	523.6	541.1
157.5°	432.7	433.6	438.1	446.9	455.0	466.6	479.8	492.3	503.7	517.0	532.1
160°	440.8	441.7	445.4	452.7	460.1	470.2	481.3	492.3	501.5	512.6	525.5
162.5°	448.9	448.4	452.0	457.9	464.5	472.5	482.0	491.6	499.3	508.9	519.6
165°	458.3	457.4	459.2	464.7	469.4	474.8	483.2	489.6	495.1	501.5	509.8
167.5°	466.0	464.9	466.6	470.1	473.4	476.9	482.9	488.3	490.8	495.1	500.3
170°	471.2	469.4	470.2	473.0	474.8	477.6	482.2	486.8	488.6	491.4	495.1
172.5°	474.1	473.0	472.5	475.2	476.3	478.3	481.5	484.6	485.7	487.0	490.0
175°	477.6	476.7	475.8	477.6	477.6	478.6	480.4	482.2	481.3	482.2	483.2
177.5°	479.3	477.8	477.1	478.6	478.6	478.6	479.3	480.8	479.3	478.6	479.3
180°	478.6	478.6	478.6	478.6	478.6	478.6	478.6	478.6	478.6	478.6	478.6



TEST NUMBER: P331281-927

CATALOG NUMBER: S122DIP-S290D1080U927-4F0-1E-UDD-D4

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	248.3	248.3	248.3	248.3	248.3	248.3	248.3	248.3
2.5°	247.5	247.8	248.1	248.3	248.1	248.0	247.9	247.7
5°	246.8	247.2	247.7	247.9	247.8	247.7	247.6	247.6
7.5°	245.6	246.1	246.8	247.0	246.9	246.8	246.8	246.7
10°	244.5	245.2	245.8	246.1	246.1	246.0	245.9	245.8
12.5°	242.8	243.4	244.1	244.4	244.3	244.2	244.2	244.1
15°	239.6	240.4	241.1	241.5	241.4	241.3	241.2	241.1
17.5°	235.7	236.4	237.1	237.5	237.5	237.5	237.5	237.5
20°	232.4	233.3	234.2	234.6	234.6	234.6	234.6	234.6
22.5°	229.0	229.9	230.8	231.2	231.4	231.5	231.6	231.8
25°	223.6	224.6	225.5	226.1	226.3	226.6	226.8	227.0
27.5°	217.6	218.9	220.1	220.8	220.9	221.1	221.3	221.5
30°	213.4	214.8	216.0	216.7	217.0	217.2	217.5	217.7
32.5°	208.9	210.4	211.9	212.9	213.3	213.7	214.1	214.5
35°	202.6	204.3	206.0	207.2	207.8	208.3	208.9	209.5
37.5°	195.9	197.9	199.9	201.1	201.7	202.3	202.9	203.4
40°	191.3	193.4	195.4	196.9	197.6	198.3	199.0	199.7
42.5°	186.8	189.0	191.3	192.8	193.5	194.2	195.0	195.7
45°	179.8	182.4	184.8	186.5	187.3	188.1	188.9	189.6
47.5°	172.7	175.2	177.8	179.6	180.5	181.3	182.2	183.1
50°	167.7	170.5	173.2	175.0	175.9	176.7	177.6	178.5
52.5°	162.4	165.2	167.9	169.8	170.8	171.7	172.7	173.6
55°	154.4	157.2	160.2	162.1	163.1	164.2	165.2	166.3
57.5°	145.9	149.0	152.1	154.2	155.3	156.3	157.3	158.4
60°	140.3	143.4	146.4	148.5	149.6	150.7	151.9	153.0
62.5°	134.4	137.6	140.9	143.0	144.0	145.0	146.2	147.2
65°	125.3	128.6	131.9	134.0	135.1	136.1	137.1	138.2
67.5°	116.1	119.5	122.8	125.0	126.0	127.1	128.3	129.4
70°	109.8	113.2	116.7	118.9	119.9	120.8	121.8	122.7
72.5°	103.6	107.0	110.4	112.6	113.8	114.9	116.1	117.2
75°	94.3	97.8	101.2	103.5	104.5	105.5	106.5	107.6
77.5°	85.2	88.6	92.1	94.3	95.5	96.6	97.7	98.8
80°	79.1	82.4	85.8	88.0	89.1	90.2	91.3	92.4
82.5°	73.3	76.7	80.0	82.2	83.3	84.4	85.4	86.4
85°	65.0	68.4	71.8	74.0	75.1	76.2	77.3	78.4
87.5°	63.9	66.9	70.5	72.8	73.8	74.9	75.9	76.9
90°	83.3	84.7	89.8	92.8	93.7	94.7	95.6	96.6
92.5°	131.4	123.2	118.6	114.9	115.1	113.1	114.9	114.3
95°	288.6	235.4	199.9	181.6	170.6	164.2	162.4	164.3
97.5°	606.9	507.5	410.9	346.3	303.3	281.6	269.1	262.4
100°	882.1	771.0	647.8	538.4	462.9	424.2	398.4	382.7
102.5°	1061.8	1038.9	949.6	833.5	751.4	684.8	652.3	630.7
105°	1154.7	1261.5	1276.2	1247.7	1191.5	1135.4	1096.6	1084.7
107.5°	1082.3	1241.6	1340.0	1386.3	1394.4	1392.1	1385.1	1368.8
110°	1020.6	1188.0	1308.3	1385.4	1425.9	1444.3	1453.5	1453.4





TEST NUMBER: P331281-927

CATALOG NUMBER: S122DIP-S290D1080U927-4F0-1E-UDD-D4

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	964.2	1124.8	1253.3	1341.5	1397.4	1427.6	1444.1	1449.9
115°	894.2	1038.3	1161.3	1257.7	1323.9	1367.1	1391.9	1401.1
117.5°	840.7	967.6	1079.2	1169.7	1237.2	1282.7	1308.8	1316.5
120°	813.7	930.1	1029.8	1115.2	1180.4	1224.6	1252.2	1262.3
122.5°	792.0	898.7	993.3	1070.4	1128.9	1172.2	1196.7	1205.1
125°	760.1	857.1	940.2	1010.7	1064.8	1100.4	1124.2	1132.3
127.5°	728.6	816.4	894.8	959.8	1007.0	1040.5	1061.1	1067.7
130°	708.4	789.5	864.0	926.1	971.8	1003.8	1022.8	1030.8
132.5°	688.9	764.0	832.7	891.0	936.0	967.9	985.5	992.7
135°	661.6	724.1	786.5	839.2	879.3	910.4	927.6	931.9
137.5°	639.4	691.7	741.4	787.3	823.9	850.6	865.7	871.7
140°	625.3	670.8	714.5	755.8	785.8	810.2	824.4	830.4
142.5°	613.9	652.5	690.0	724.6	753.0	775.2	787.9	789.4
145°	598.2	629.1	658.1	685.2	707.7	723.7	733.3	736.5
147.5°	586.1	610.1	632.5	652.1	670.5	683.3	689.7	691.5
150°	577.9	598.2	617.5	634.1	647.8	658.9	664.4	665.4
152.5°	569.8	588.6	605.0	619.3	630.2	639.8	643.8	644.0
155°	558.6	573.3	587.1	597.2	607.4	613.8	617.5	615.7
157.5°	545.5	557.9	569.4	577.3	584.6	589.9	591.5	591.5
160°	537.4	547.6	557.7	564.1	570.5	575.1	576.1	576.1
162.5°	529.3	538.0	546.6	551.6	558.0	561.2	562.1	561.3
165°	517.2	523.6	530.0	533.8	537.4	541.1	541.1	540.2
167.5°	505.6	510.6	515.0	518.3	519.9	522.0	521.8	520.7
170°	499.7	502.5	506.1	507.9	508.9	511.7	510.7	508.9
172.5°	493.1	495.1	498.0	499.2	500.1	501.4	500.4	499.3
175°	485.9	486.8	487.7	488.6	488.6	489.6	488.6	486.8
177.5°	480.8	480.8	481.5	481.5	481.5	481.5	480.8	479.3
180°	478.6	478.6	478.6	478.6	478.6	478.6	478.6	478.6

(END OF REPORT)