

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: P331480-927

Luminaire Tested: **S122DIW-S290D970U927-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331480-927  
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-S290D970U927-4F0-1E-UDD-D1  
Description: DEFINE 2 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 290 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 970 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3609.7 lumens  
Efficiency: N/A  
Efficacy: 95.0 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

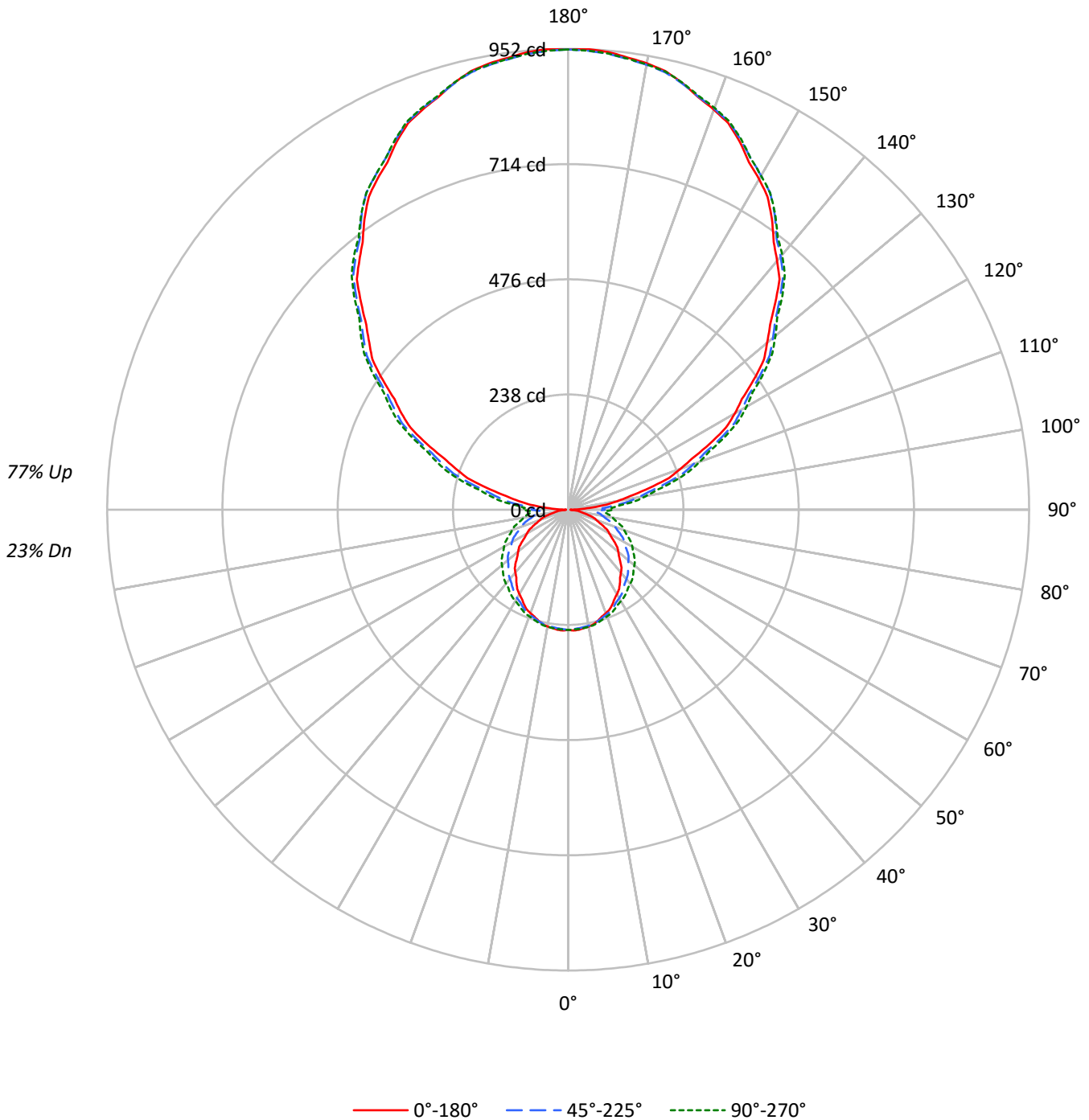
Input Watts (W): 38  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P331480-927

CATALOG NUMBER: S122DIW-S290D970U927-4F0-1E-UDD-D1

### Luminous Intensity Polar Plot





TEST NUMBER: P331480-927

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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	0	
RCR																						
0	101	101	101	101	90	90	90	90	69	69	69	49	49	49	32	32	32	23				
1	91	87	83	79	81	77	74	71	59	57	55	42	41	39	27	26	25	18				
2	83	75	69	64	73	67	62	57	51	48	45	37	34	32	23	22	21	15				
3	75	66	59	53	66	58	52	47	45	41	37	32	29	27	20	19	17	12				
4	69	58	50	44	60	52	45	40	40	35	31	28	25	23	18	16	15	10				
5	63	51	43	38	55	46	39	34	35	30	27	25	22	20	16	14	13	9				
6	58	46	38	32	51	41	34	29	31	27	23	23	19	17	14	13	11	8				
7	53	41	33	28	47	37	30	25	28	24	20	21	17	15	13	11	10	7				
8	49	37	30	24	43	33	27	22	26	21	18	19	15	13	12	10	9	6				
9	46	34	26	22	40	30	24	20	23	19	16	17	14	12	11	9	8	5				
10	42	31	24	19	38	28	21	17	21	17	14	16	13	10	10	8	7	5				

**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: P331480-927

CATALOG NUMBER: S122DIW-S290D970U927-4F0-1E-UDD-D1

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	23.5	0.7
10°-20°	67.5	1.9
20°-30°	102.2	2.8
30°-40°	124.5	3.5
40°-50°	134.0	3.7
50°-60°	130.1	3.6
60°-70°	113.6	3.1
70°-80°	87.5	2.4
80°-90°	62.5	1.7
90°-100°	100.7	2.8
100°-110°	216.6	6.0
110°-120°	339.4	9.4
120°-130°	431.5	12.0
130°-140°	476.7	13.2
140°-150°	463.7	12.8
150°-160°	388.3	10.8
160°-170°	257.5	7.1
170°-180°	90.0	2.5
0°-30°	193.2	5.4
0°-40°	317.8	8.8
0°-60°	581.9	16.1
0°-90°	845.4	23.4
90°-120°	656.7	18.2
90°-150°	2028.5	56.2
90°-180°	2764.0	76.6
0°-180°	3609.7	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	36	76	88	94	5
95°	45	69	93	106	109	50
105°	174	188	208	221	226	184
115°	322	332	346	355	357	319
125°	468	475	484	491	494	418
135°	604	613	618	625	626	467
145°	733	739	744	746	745	458
155°	838	841	843	847	845	386
165°	912	912	912	917	913	257
175°	949	947	945	950	946	90
180°	951	951	951	951	951	



TEST NUMBER: P331480-927

CATALOG NUMBER: S122DIW-S290D970U927-4F0-1E-UDD-D1

**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	12.4	17.6	22.8	28.0	33.5	39.5	45.3	51.3	57.1	60.4
90°	4.4	11.2	18.0	24.7	31.5	39.5	48.5	57.5	66.5	75.6	78.4
92.5°	17.6	23.4	29.4	35.3	41.1	47.0	52.8	58.7	64.6	70.4	73.7
95°	44.6	50.1	55.7	61.2	66.8	72.1	77.2	82.5	87.6	92.8	95.8
97.5°	78.7	83.7	88.6	93.5	98.4	103.5	108.8	114.1	119.3	124.6	127.6
100°	104.4	108.8	113.2	117.6	122.0	126.7	131.7	136.7	141.7	146.7	149.6
102.5°	131.1	134.9	138.8	142.6	146.5	150.9	155.9	161.0	166.0	171.0	174.0
105°	174.3	177.1	180.0	182.8	185.7	189.4	193.9	198.4	203.0	207.5	210.6
107.5°	218.2	220.9	223.5	226.1	228.8	232.1	236.1	240.0	244.0	248.0	250.8
110°	246.1	248.8	251.5	254.1	256.8	260.2	264.0	268.0	271.9	275.8	278.4



TEST NUMBER: P331480-927

CATALOG NUMBER: S122DIW-S290D970U927-4F0-1E-UDD-D1

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	276.9	279.4	281.8	284.2	286.6	289.6	293.2	296.8	300.4	304.0	306.1
115°	322.4	324.3	326.3	328.2	330.2	332.8	336.0	339.3	342.5	345.8	348.0
117.5°	367.3	369.3	371.3	373.3	375.3	377.5	379.8	382.1	384.4	386.7	388.7
120°	397.4	399.2	400.9	402.7	404.4	406.2	408.0	409.7	411.5	413.3	415.5
122.5°	425.1	426.9	428.7	430.6	432.4	434.4	436.3	438.3	440.4	442.4	444.1
125°	467.7	469.3	470.9	472.5	474.1	475.9	477.9	480.0	482.0	484.0	485.7
127.5°	509.6	511.5	513.5	515.5	517.4	519.1	520.5	521.9	523.3	524.7	526.1
130°	535.9	538.1	540.3	542.6	544.9	546.6	548.0	549.3	550.6	551.9	553.5
132.5°	565.5	567.2	569.0	570.8	572.7	574.3	575.6	577.0	578.4	579.7	580.8
135°	604.5	606.5	608.5	610.5	612.4	613.9	615.1	616.2	617.4	618.5	620.0
137.5°	646.1	647.7	649.3	650.9	652.4	653.6	654.5	655.3	656.1	657.0	658.2
140°	671.1	672.6	674.2	675.7	677.2	678.5	679.6	680.6	681.7	682.7	684.0
142.5°	696.8	698.3	699.9	701.4	702.9	704.0	704.6	705.3	705.9	706.5	707.7
145°	733.3	734.6	735.9	737.1	738.4	739.5	740.6	741.6	742.8	743.8	744.4
147.5°	766.3	767.8	769.3	770.7	772.2	773.3	774.0	774.8	775.5	776.2	776.7
150°	788.7	789.8	790.8	791.9	793.0	793.9	794.6	795.4	796.1	796.8	797.3
152.5°	808.7	809.7	810.8	811.8	812.9	813.9	814.8	815.6	816.4	817.3	817.9
155°	838.4	839.0	839.6	840.1	840.6	841.1	841.7	842.2	842.7	843.3	844.1
157.5°	864.0	864.4	864.7	865.1	865.4	865.8	866.1	866.4	866.7	867.0	868.2
160°	879.4	879.7	880.1	880.4	880.8	881.1	881.3	881.5	881.6	881.8	882.9
162.5°	893.5	893.6	893.7	893.7	893.8	893.9	894.1	894.3	894.5	894.6	895.9
165°	912.3	912.1	912.0	911.7	911.6	911.5	911.5	911.5	911.5	911.5	912.8
167.5°	928.0	927.5	926.9	926.4	925.9	925.6	925.6	925.5	925.5	925.4	926.7
170°	936.4	935.8	935.3	934.8	934.2	933.9	933.7	933.5	933.3	933.2	934.4
172.5°	942.1	941.6	941.0	940.6	940.0	939.6	939.4	939.3	939.1	938.9	940.2
175°	949.2	948.6	948.2	947.6	947.1	946.6	946.3	945.9	945.5	945.2	946.4
177.5°	952.1	951.6	951.3	950.8	950.4	950.0	949.7	949.4	949.2	948.9	949.7
180°	950.8	950.8	950.8	950.8	950.8	950.8	950.8	950.8	950.8	950.8	950.8



TEST NUMBER: P331480-927

CATALOG NUMBER: S122DIW-S290D970U927-4F0-1E-UDD-D1

**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°	63.5	66.7	69.9	72.0	73.1	74.1	75.3	76.3
90°	81.3	84.1	87.0	89.0	90.1	91.3	92.4	93.5
92.5°	76.8	80.0	83.3	85.3	86.3	87.4	88.3	89.4
95°	98.8	101.9	104.9	106.7	107.3	107.9	108.5	109.2
97.5°	130.6	133.5	136.5	138.4	139.3	140.2	141.1	142.0
100°	152.7	155.6	158.5	160.4	161.1	161.8	162.5	163.2
102.5°	177.1	180.1	183.2	185.1	185.8	186.4	187.1	187.8
105°	213.8	216.9	220.1	222.1	223.0	223.9	224.7	225.6
107.5°	253.7	256.5	259.4	260.8	260.9	260.9	260.9	261.0
110°	280.9	283.5	286.1	287.5	287.9	288.2	288.5	288.9





TEST NUMBER: P331480-927

CATALOG NUMBER: S122DIW-S290D970U927-4F0-1E-UDD-D1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	308.2	310.4	312.5	313.8	314.3	314.7	315.3	315.8
115°	350.2	352.4	354.7	355.9	356.2	356.6	357.0	357.3
117.5°	390.6	392.6	394.5	395.6	395.9	396.2	396.5	396.7
120°	417.8	420.0	422.2	423.5	423.9	424.2	424.5	424.9
122.5°	445.8	447.6	449.3	450.4	450.8	451.1	451.5	451.9
125°	487.3	488.9	490.5	491.6	492.2	492.7	493.2	493.8
127.5°	527.4	528.8	530.1	530.8	531.0	531.2	531.2	531.4
130°	555.1	556.6	558.2	558.9	558.8	558.8	558.7	558.6
132.5°	581.9	583.0	584.0	584.6	584.6	584.7	584.8	584.9
135°	621.5	623.1	624.6	625.3	625.5	625.6	625.7	625.8
137.5°	659.6	660.9	662.3	662.8	662.7	662.5	662.3	662.1
140°	685.3	686.6	687.9	688.4	688.2	687.9	687.7	687.5
142.5°	708.8	710.0	711.2	711.6	711.4	711.1	710.7	710.4
145°	745.1	745.8	746.4	746.6	746.3	746.0	745.7	745.4
147.5°	777.1	777.6	778.0	778.0	777.5	777.1	776.6	776.1
150°	797.8	798.4	798.9	798.9	798.4	797.8	797.3	796.8
152.5°	818.6	819.4	820.0	820.0	819.4	818.6	817.9	817.3
155°	845.1	846.0	846.8	847.0	846.5	846.0	845.4	844.9
157.5°	869.5	870.7	871.9	872.0	871.2	870.4	869.5	868.6
160°	883.9	885.0	886.1	886.3	885.6	884.9	884.2	883.4
162.5°	897.1	898.3	899.5	899.7	898.8	897.9	897.1	896.3
165°	914.0	915.2	916.5	916.6	915.8	914.9	914.0	913.1
167.5°	928.0	929.2	930.4	930.6	929.7	928.8	927.8	926.9
170°	935.6	936.9	938.2	938.3	937.2	936.1	935.0	934.0
172.5°	941.4	942.7	943.9	944.0	942.9	941.9	940.8	939.8
175°	947.7	949.0	950.1	950.3	949.2	948.2	947.1	946.0
177.5°	950.6	951.4	952.3	952.3	951.4	950.6	949.7	948.9
180°	950.8	950.8	950.8	950.8	950.8	950.8	950.8	950.8

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