

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: P331587-840

Luminaire Tested: **S122DIW-S1005D435U840-4F0-1E-UDD-D**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331587-840  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-2,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S122DIW-S1005D435U840-4F0-1E-UDD-D  
Description: DEFINE 2 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 1005 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 435 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5823.6 lumens  
Efficiency: N/A  
Efficacy: 111.1 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-Direct

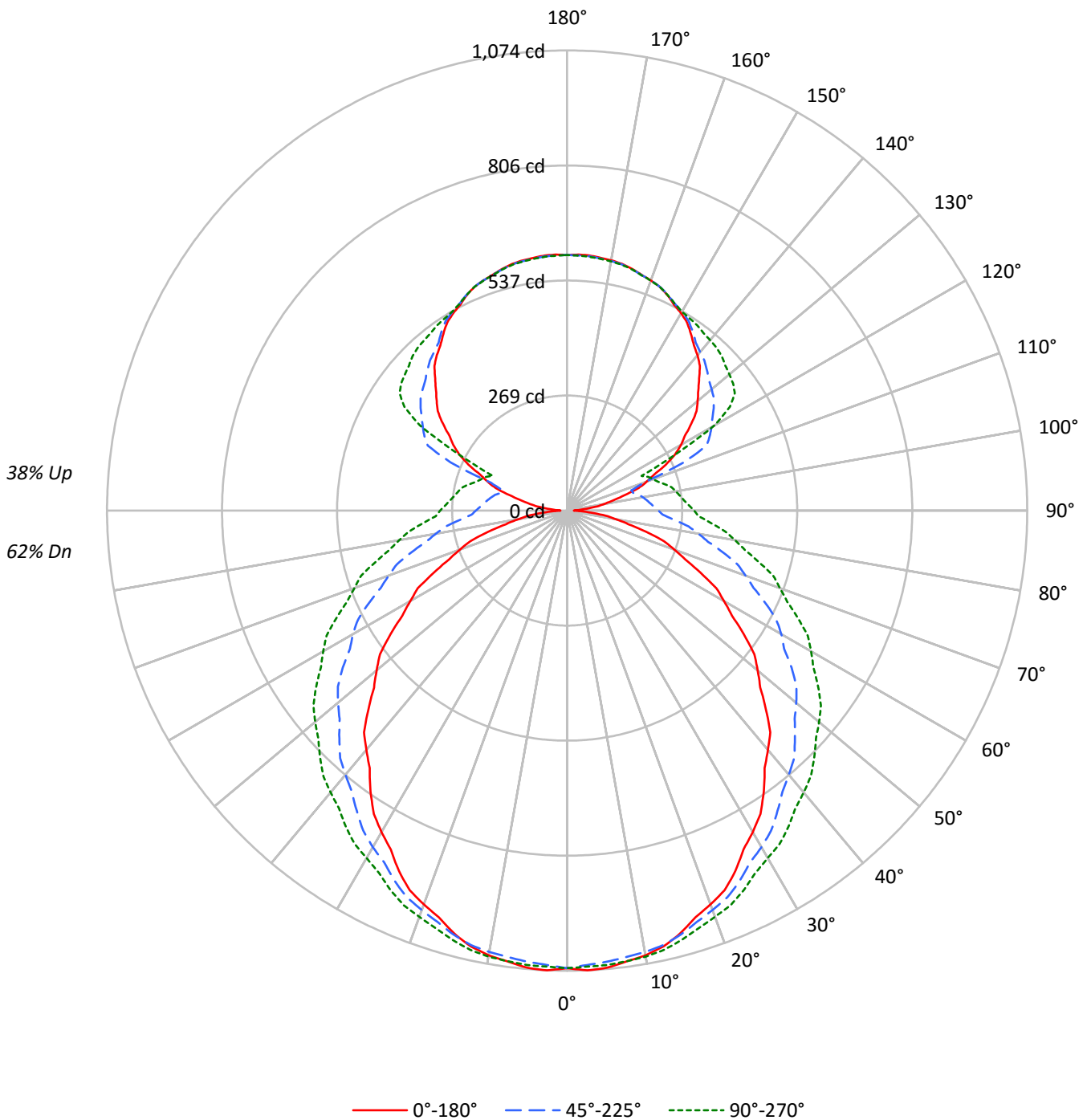
Input Watts (W): 52.4  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P331587-840

CATALOG NUMBER: S122DIW-S1005D435U840-4F0-1E-UDD-D

### Luminous Intensity Polar Plot





TEST NUMBER: P331587-840

CATALOG NUMBER: S122DIW-S1005D435U840-4F0-1E-UDD-D

**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	110	110	110	110	103	103	103	103	90	90	90	78	78	78	67	67	67	62
1	99	93	89	85	92	87	83	80	76	73	70	66	64	61	57	55	53	49
2	89	81	74	68	83	75	69	64	66	61	57	57	53	50	49	46	43	39
3	81	70	62	55	75	66	58	53	57	52	47	50	45	41	43	39	36	32
4	74	62	53	46	68	58	50	44	51	44	39	44	39	35	38	34	31	27
5	68	55	46	40	63	52	44	38	45	39	34	39	34	30	34	30	26	23
6	62	49	40	34	58	46	38	32	41	34	29	35	30	26	31	26	23	20
7	57	44	36	30	53	42	34	28	37	30	26	32	27	23	28	24	20	18
8	53	40	32	26	50	38	30	25	33	27	23	29	24	20	25	21	18	16
9	50	37	29	23	46	35	27	22	31	25	20	27	22	18	23	19	16	14
10	46	34	26	21	43	32	25	20	28	22	18	25	20	16	22	18	15	13

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

	0°	45°	90°
0°	17241	17241	17241
5°	17327	16597	16534
10°	17217	16106	15925
15°	16980	15587	15284
20°	16681	15031	14669
25°	16384	14494	14107
30°	15966	13945	13546
35°	15544	13412	13150
40°	15099	12958	12754
45°	14678	12551	12415
50°	14226	12185	12082
55°	13750	11789	11742
60°	13168	11380	11382
65°	12566	10901	10957
70°	11886	10385	10497
75°	11021	9881	10071
80°	9646	9362	9643
85°	8334	8915	9308



TEST NUMBER: P331587-840

CATALOG NUMBER: S122DIW-S1005D435U840-4F0-1E-UDD-D

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	101.2	1.7
10°-20°	290.2	5.0
20°-30°	439.7	7.6
30°-40°	535.6	9.2
40°-50°	576.2	9.9
50°-60°	559.5	9.6
60°-70°	488.6	8.4
70°-80°	376.1	6.5
80°-90°	253.9	4.4
90°-100°	193.8	3.3
100°-110°	200.0	3.4
110°-120°	278.9	4.8
120°-130°	368.8	6.3
130°-140°	362.1	6.2
140°-150°	321.7	5.5
150°-160°	255.9	4.4
160°-170°	164.9	2.8
170°-180°	56.8	1.0
0°-30°	831.1	14.3
0°-40°	1366.6	23.5
0°-60°	2502.3	43.0
0°-90°	3620.9	62.2
90°-120°	672.7	11.6
90°-150°	1725.2	29.6
90°-180°	2203.0	37.8
0°-180°	5823.6	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1068	1068	1068	1068	1068	
5°	1071	1066	1057	1066	1065	102
15°	1022	1024	1024	1038	1037	288
25°	929	940	953	971	976	427
35°	800	827	856	889	901	500
45°	656	699	752	798	816	506
55°	503	560	639	693	715	450
65°	344	420	511	572	594	341
75°	190	278	376	440	463	201
85°	56	152	251	313	337	60
90°	16	111	213	274	296	12
95°	40	101	195	253	274	44
105°	139	192	160	216	237	149
115°	254	282	359	214	192	250
125°	354	363	417	460	477	316
135°	436	443	462	497	510	337
145°	504	504	511	523	528	315
155°	555	551	556	558	555	255
165°	584	582	583	586	583	165
175°	598	595	596	598	594	57
180°	596	596	596	596	596	



TEST NUMBER: P331587-840

CATALOG NUMBER: S122DIW-S1005D435U840-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1067.8	1067.8	1067.8	1067.8	1067.8	1067.8	1067.8	1067.8	1067.8	1067.8	1067.8
2.5°	1074.1	1073.3	1072.4	1071.6	1070.8	1069.3	1067.4	1065.5	1063.6	1061.7	1063.1
5°	1071.0	1070.0	1068.9	1067.8	1066.8	1065.3	1063.3	1061.2	1059.1	1057.0	1059.1
7.5°	1061.4	1060.7	1060.0	1059.3	1058.6	1057.5	1055.9	1054.3	1052.8	1051.2	1053.6
10°	1054.0	1053.3	1052.6	1051.9	1051.2	1050.4	1049.4	1048.2	1047.2	1046.2	1048.9
12.5°	1041.6	1041.7	1041.9	1042.0	1042.1	1041.8	1041.1	1040.3	1039.6	1038.7	1041.6
15°	1021.5	1022.2	1022.8	1023.5	1024.2	1024.5	1024.5	1024.5	1024.5	1024.5	1027.6
17.5°	995.4	996.9	998.4	999.8	1001.2	1002.5	1003.6	1004.7	1005.8	1006.9	1010.2
20°	978.2	979.9	981.6	983.3	985.0	986.5	988.0	989.3	990.7	992.1	995.8
22.5°	959.6	961.5	963.5	965.5	967.6	969.5	971.4	973.3	975.2	977.1	981.0
25°	928.6	931.0	933.4	935.8	938.3	941.0	944.0	947.2	950.3	953.3	957.5
27.5°	891.4	895.3	899.3	903.2	907.2	910.9	914.5	918.2	921.8	925.5	930.7
30°	866.7	871.1	875.7	880.1	884.5	889.1	893.5	898.0	902.4	907.0	912.4
32.5°	839.4	844.4	849.5	854.5	859.5	864.6	870.0	875.3	880.6	885.9	892.2
35°	800.1	806.0	811.8	817.7	823.5	829.7	836.3	842.7	849.3	855.9	863.4
37.5°	757.4	764.2	770.9	777.6	784.4	791.9	800.4	808.9	817.4	825.9	834.2
40°	728.9	736.5	744.1	751.6	759.2	767.6	776.9	786.2	795.5	804.8	813.7
42.5°	701.8	709.2	716.8	724.4	732.0	741.0	751.7	762.4	773.1	783.8	793.5
45°	656.2	665.5	674.8	684.1	693.4	704.0	716.1	728.1	740.1	752.1	762.9
47.5°	611.4	621.5	631.6	641.7	651.8	663.9	678.0	692.1	706.2	720.2	731.4
50°	580.4	591.1	601.7	612.4	623.0	636.1	651.6	667.0	682.5	698.0	709.7
52.5°	550.7	561.9	573.1	584.3	595.5	609.3	625.5	641.9	658.1	674.5	686.4
55°	503.0	515.3	527.8	540.2	552.5	567.6	585.5	603.4	621.3	639.1	651.6
57.5°	456.0	469.9	483.8	497.9	511.8	527.9	546.1	564.3	582.6	600.8	614.1
60°	422.5	437.3	452.1	466.9	481.7	498.9	518.5	538.1	557.6	577.2	590.4
62.5°	392.8	408.1	423.4	438.8	454.1	471.6	491.2	510.8	530.5	550.1	563.9
65°	343.6	360.4	377.3	394.2	411.0	429.6	449.9	470.1	490.4	510.7	524.8
67.5°	298.4	316.0	333.6	351.2	368.8	388.0	408.8	429.6	450.3	471.1	485.3
70°	266.2	284.1	301.9	319.8	337.7	357.3	378.7	400.0	421.3	442.6	457.4
72.5°	236.5	254.9	273.4	291.8	310.2	330.2	351.8	373.4	395.1	416.7	431.1
75°	190.4	209.6	228.8	248.1	267.4	288.0	310.0	332.0	354.1	376.1	390.8
77.5°	145.8	165.9	186.1	206.2	226.4	247.6	270.0	292.4	314.7	337.1	351.8
80°	116.0	137.0	158.0	179.0	200.0	221.7	244.0	266.4	288.7	311.0	325.5
82.5°	91.3	112.0	132.7	153.4	174.1	195.8	218.4	241.1	263.7	286.3	300.7
85°	55.7	77.1	98.4	119.7	141.0	162.7	184.7	206.7	228.7	250.7	265.2
87.5°	30.4	51.1	71.8	92.5	113.2	134.7	156.8	179.0	201.2	223.4	237.5
90°	16.0	37.0	57.9	78.9	99.9	121.8	144.6	167.3	190.2	212.9	227.1
92.5°	22.9	41.4	59.9	78.4	96.8	116.8	138.5	160.1	181.6	203.2	216.9
95°	40.4	53.4	66.4	79.5	92.4	109.6	130.9	152.2	173.5	194.8	208.3
97.5°	66.6	72.0	77.5	82.9	88.4	101.8	123.1	144.5	165.8	187.2	200.4
100°	87.3	86.8	86.4	85.9	85.5	95.8	116.7	137.5	158.4	179.4	192.9
102.5°	108.8	117.6	126.4	135.3	144.1	151.1	156.2	161.3	166.3	171.4	184.8
105°	139.0	151.8	164.6	177.5	190.4	192.7	184.3	176.0	167.7	159.5	172.5
107.5°	175.2	185.4	195.7	206.0	216.3	214.4	200.1	185.8	171.6	157.2	167.7
110°	197.4	206.3	215.2	224.1	233.0	232.0	221.2	210.3	199.3	188.5	190.0



TEST NUMBER: P331587-840

CATALOG NUMBER: S122DIW-S1005D435U840-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	219.5	227.0	234.6	242.2	249.7	258.1	267.3	276.5	285.7	294.9	270.8
115°	254.4	259.8	265.2	270.6	276.0	287.7	305.6	323.5	341.3	359.2	325.1
117.5°	284.0	288.3	292.6	296.9	301.1	311.3	327.3	343.3	359.2	375.2	374.6
120°	306.8	309.6	312.5	315.2	318.0	327.2	342.6	358.2	373.7	389.1	399.9
122.5°	326.1	328.2	330.2	332.3	334.4	342.8	357.6	372.4	387.3	402.0	412.1
125°	354.1	355.3	356.5	357.8	359.0	366.1	378.9	391.7	404.6	417.4	427.3
127.5°	380.7	381.7	382.7	383.8	384.9	390.5	400.7	410.9	421.2	431.4	440.9
130°	397.6	398.8	400.0	401.2	402.3	407.1	415.4	423.6	431.9	440.2	449.5
132.5°	414.9	415.9	416.8	417.8	418.7	422.5	429.1	435.8	442.4	449.0	457.9
135°	435.8	437.3	438.9	440.4	441.9	444.8	449.1	453.4	457.8	462.0	470.2
137.5°	458.5	459.5	460.5	461.5	462.5	464.2	466.8	469.2	471.7	474.2	481.5
140°	473.3	473.7	474.1	474.6	475.0	476.1	477.9	479.6	481.3	483.1	489.5
142.5°	485.7	486.1	486.5	486.8	487.2	488.0	489.4	490.7	492.0	493.4	498.6
145°	503.7	503.6	503.5	503.4	503.3	504.1	505.7	507.4	509.0	510.6	513.3
147.5°	520.7	520.4	520.0	519.7	519.3	519.9	521.5	523.1	524.7	526.3	527.1
150°	531.8	531.1	530.4	529.8	529.1	529.5	531.1	532.6	534.1	535.6	536.2
152.5°	541.1	540.4	539.6	538.9	538.1	538.5	539.9	541.4	542.8	544.3	544.8
155°	554.6	553.8	552.9	552.1	551.2	551.4	552.5	553.6	554.8	555.9	556.5
157.5°	565.2	564.5	563.8	563.1	562.4	562.4	563.2	564.0	564.8	565.6	566.2
160°	571.5	570.9	570.4	569.8	569.2	569.2	569.8	570.4	570.9	571.5	572.1
162.5°	577.0	576.4	575.8	575.3	574.7	574.7	575.1	575.6	576.1	576.6	577.3
165°	584.4	583.9	583.3	582.7	582.1	582.0	582.3	582.6	582.9	583.1	583.8
167.5°	590.0	589.4	588.9	588.2	587.6	587.5	587.7	588.0	588.3	588.5	589.3
170°	593.1	592.5	591.9	591.4	590.8	590.6	590.8	591.0	591.2	591.4	592.0
172.5°	595.1	594.6	594.0	593.4	592.8	592.7	592.8	593.0	593.2	593.4	594.1
175°	597.8	597.1	596.4	595.8	595.1	594.9	595.1	595.3	595.4	595.6	596.3
177.5°	598.2	597.7	597.1	596.6	596.1	595.8	595.9	596.0	596.1	596.1	596.7
180°	596.5	596.5	596.5	596.5	596.5	596.5	596.5	596.5	596.5	596.5	596.5



TEST NUMBER: P331587-840

CATALOG NUMBER: S122DIW-S1005D435U840-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1067.8	1067.8	1067.8	1067.8	1067.8	1067.8	1067.8	1067.8
2.5°	1064.4	1065.8	1067.2	1067.6	1067.0	1066.5	1065.9	1065.4
5°	1061.2	1063.3	1065.3	1066.1	1065.8	1065.5	1065.1	1064.8
7.5°	1056.1	1058.6	1061.1	1062.2	1061.8	1061.5	1061.1	1060.8
10°	1051.7	1054.5	1057.2	1058.4	1058.0	1057.7	1057.4	1057.0
12.5°	1044.3	1047.0	1049.8	1051.0	1050.7	1050.3	1050.0	1049.7
15°	1030.8	1033.8	1036.9	1038.3	1037.9	1037.6	1037.2	1036.9
17.5°	1013.4	1016.6	1019.9	1021.5	1021.5	1021.5	1021.5	1021.5
20°	999.6	1003.4	1007.1	1009.1	1009.1	1009.1	1009.1	1009.1
22.5°	984.7	988.6	992.3	994.5	995.0	995.6	996.1	996.7
25°	961.6	965.7	969.9	972.4	973.5	974.5	975.5	976.5
27.5°	935.9	941.2	946.4	949.4	950.2	950.9	951.7	952.4
30°	918.0	923.4	929.0	932.2	933.2	934.2	935.3	936.3
32.5°	898.6	904.8	911.2	915.2	917.2	919.0	920.9	922.7
35°	871.0	878.6	886.2	891.1	893.5	896.0	898.4	900.7
37.5°	842.6	851.0	859.4	864.8	867.4	870.0	872.5	875.0
40°	822.6	831.6	840.5	846.6	849.7	852.7	855.9	859.0
42.5°	803.2	813.0	822.8	829.2	832.3	835.5	838.5	841.6
45°	773.5	784.2	794.8	801.8	805.3	808.7	812.1	815.6
47.5°	742.6	753.7	764.9	772.3	776.1	779.9	783.7	787.5
50°	721.3	733.1	744.8	752.6	756.3	760.0	763.9	767.6
52.5°	698.4	710.3	722.4	730.3	734.4	738.5	742.6	746.6
55°	664.0	676.3	688.7	697.1	701.6	706.1	710.5	715.0
57.5°	627.5	640.9	654.2	663.1	667.6	672.2	676.7	681.3
60°	603.4	616.5	629.5	638.5	643.3	648.1	653.0	657.7
62.5°	577.8	591.7	605.6	614.8	619.4	623.9	628.4	633.0
65°	539.0	553.0	567.1	576.4	580.9	585.3	589.9	594.3
67.5°	499.6	513.8	528.1	537.6	542.2	546.8	551.6	556.2
70°	472.2	487.0	501.8	511.2	515.3	519.5	523.6	527.8
72.5°	445.7	460.2	474.6	484.4	489.4	494.3	499.3	504.2
75°	405.7	420.4	435.3	444.8	449.3	453.8	458.3	462.7
77.5°	366.5	381.2	396.0	405.8	410.5	415.4	420.2	425.0
80°	339.9	354.5	368.9	378.5	383.3	388.1	392.9	397.8
82.5°	315.2	329.6	344.1	353.6	358.1	362.6	367.2	371.7
85°	279.6	294.1	308.5	318.1	323.0	327.8	332.5	337.4
87.5°	251.6	265.7	279.8	289.1	293.6	298.0	302.5	306.9
90°	241.4	255.6	269.8	279.1	283.5	287.8	292.1	296.4
92.5°	230.7	244.4	258.1	267.1	271.4	275.6	279.8	284.1
95°	221.9	235.5	249.0	257.8	261.9	265.9	269.9	273.9
97.5°	213.4	226.5	239.6	248.3	252.5	256.6	260.8	265.0
100°	206.3	219.8	233.4	242.1	246.0	250.0	254.0	258.0
102.5°	198.3	211.8	225.2	233.9	238.0	242.1	246.1	250.1
105°	185.6	198.7	211.8	220.5	224.6	228.7	233.0	237.1
107.5°	178.2	188.7	199.1	206.5	210.7	214.9	219.0	223.2
110°	191.4	192.8	194.2	196.9	201.2	205.3	209.4	213.6





TEST NUMBER: P331587-840

CATALOG NUMBER: S122DIW-S1005D435U840-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	246.9	222.9	198.8	188.9	193.0	197.1	201.2	205.3
115°	290.9	256.9	222.8	204.2	201.1	197.9	194.8	191.7
117.5°	374.1	373.4	372.9	363.0	343.9	324.7	305.5	286.3
120°	410.7	421.5	432.2	433.0	423.9	414.8	405.6	396.4
122.5°	422.1	432.2	442.2	447.7	448.4	449.1	449.8	450.5
125°	437.3	447.3	457.2	463.8	467.3	470.6	474.0	477.4
127.5°	450.4	459.9	469.5	475.7	478.8	481.9	485.0	488.1
130°	458.9	468.2	477.5	483.4	486.0	488.8	491.4	494.0
132.5°	466.8	475.6	484.5	490.3	492.9	495.6	498.3	500.9
135°	478.4	486.6	494.7	500.1	502.7	505.2	507.9	510.4
137.5°	488.8	496.0	503.3	508.0	510.0	511.9	513.9	515.9
140°	495.8	502.2	508.6	512.5	514.1	515.6	517.3	518.9
142.5°	503.7	509.0	514.1	517.4	518.7	520.0	521.3	522.6
145°	516.0	518.9	521.6	523.5	524.8	526.0	527.3	528.5
147.5°	527.9	528.7	529.5	530.0	530.5	530.9	531.3	531.7
150°	536.8	537.3	538.0	538.1	537.6	537.0	536.5	536.1
152.5°	545.4	546.0	546.6	546.5	545.9	545.3	544.6	544.0
155°	557.1	557.6	558.3	558.2	557.3	556.6	555.8	555.1
157.5°	566.9	567.5	568.3	568.2	567.4	566.6	565.9	565.2
160°	572.6	573.2	573.8	573.7	573.1	572.4	571.7	571.1
162.5°	577.9	578.7	579.3	579.2	578.3	577.5	576.7	575.9
165°	584.5	585.1	585.8	585.8	585.1	584.5	583.8	583.1
167.5°	590.0	590.6	591.3	591.2	590.3	589.5	588.5	587.7
170°	592.7	593.4	594.0	593.9	593.1	592.2	591.4	590.5
172.5°	594.7	595.4	596.1	596.0	595.1	594.3	593.4	592.6
175°	597.0	597.6	598.3	598.2	597.2	596.3	595.3	594.4
177.5°	597.2	597.7	598.3	598.2	597.5	596.8	596.1	595.5
180°	596.5	596.5	596.5	596.5	596.5	596.5	596.5	596.5

(END OF REPORT)