

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: P331563-840

Luminaire Tested: **S122DIW-S865D710U840-4F0-1E-UDD-D**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331563-840  
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-S865D710U840-4F0-1E-UDD-D  
Description: DEFINE 2 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 865 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 710 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

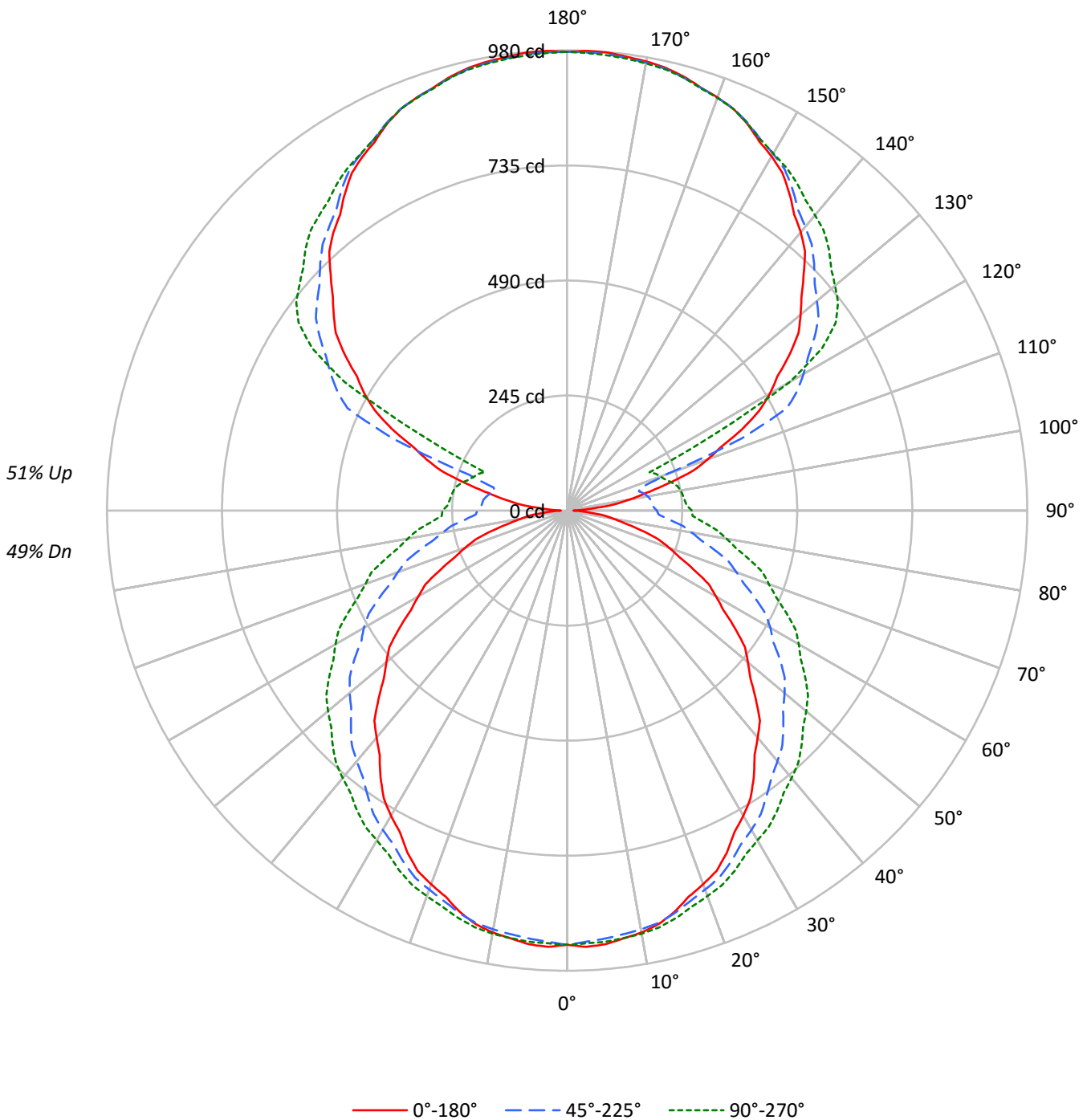
Lumens per Lamp: N/A  
Luminaire Lumens: 6393.1 lumens  
Efficiency: N/A  
Efficacy: 119.3 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.32 / 1.42  
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.08')  
CIE Type: General Diffuse  
  
Input Watts (W): 53.6  
Input Voltage (V): 120  
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: P331563-840

CATALOG NUMBER: S122DIW-S865D710U840-4F0-1E-UDD-D

### Luminous Intensity Polar Plot





TEST NUMBER: P331563-840

CATALOG NUMBER: S122DIW-S865D710U840-4F0-1E-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	107	107	107	107	99	99	99	99	83	83	83		68	68	68		55	55	55	49
1	96	91	87	83	88	84	80	77	70	68	65		58	56	54		47	45	44	38
2	87	79	72	66	80	73	67	62	61	56	53		50	47	44		40	38	36	31
3	79	69	61	55	72	63	56	51	53	48	44		44	40	37		35	32	30	25
4	72	60	52	46	66	56	48	43	47	41	37		39	34	31		31	28	25	21
5	66	54	45	39	60	50	42	36	42	36	31		35	30	26		28	24	22	18
6	61	48	40	33	55	44	37	31	38	32	27		31	26	23		25	22	19	16
7	56	43	35	29	51	40	33	27	34	28	24		28	24	20		23	19	17	14
8	52	39	31	26	48	36	29	24	31	25	21		26	21	18		21	17	15	12
9	48	36	28	23	44	33	26	21	28	23	19		24	19	16		19	16	13	11
10	45	33	25	20	41	30	24	19	26	20	17		22	17	14		18	15	12	10

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

	0°	45°	90°
0°	14928	14928	14928
5°	15002	14370	14315
10°	14907	13945	13789
15°	14701	13496	13236
20°	14442	13015	12701
25°	14187	12551	12216
30°	13824	12074	11729
35°	13459	11611	11386
40°	13075	11219	11044
45°	12709	10869	10750
50°	12316	10551	10462
55°	11908	10209	10166
60°	11404	9856	9857
65°	10880	9439	9485
70°	10292	8992	9089
75°	9539	8554	8722
80°	8357	8107	8349
85°	7227	7720	8061



TEST NUMBER: P331563-840

CATALOG NUMBER: S122DIW-S865D710U840-4F0-1E-UDD-D

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	87.6	1.4
10°-20°	251.2	3.9
20°-30°	380.7	6.0
30°-40°	463.7	7.3
40°-50°	498.9	7.8
50°-60°	484.5	7.6
60°-70°	423.0	6.6
70°-80°	325.7	5.1
80°-90°	221.0	3.5
90°-100°	183.2	2.9
100°-110°	229.5	3.6
110°-120°	392.1	6.1
120°-130°	567.9	8.9
130°-140°	577.8	9.0
140°-150°	524.2	8.2
150°-160°	419.1	6.6
160°-170°	270.1	4.2
170°-180°	93.0	1.5
0°-30°	719.6	11.3
0°-40°	1183.3	18.5
0°-60°	2166.6	33.9
0°-90°	3136.3	49.1
90°-120°	804.7	12.6
90°-150°	2474.7	38.7
90°-180°	3257.0	50.9
0°-180°	6393.1	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	925	925	925	925	925	
5°	927	923	915	923	922	88
15°	884	887	887	898	898	249
25°	804	814	826	841	846	369
35°	693	716	741	769	780	433
45°	568	605	651	691	706	438
55°	436	485	553	600	619	389
65°	298	364	442	495	514	295
75°	165	240	326	381	401	174
85°	48	132	217	271	292	52
90°	14	100	191	246	266	11
95°	57	99	182	234	252	65
105°	222	272	158	211	231	237
115°	412	442	516	243	193	405
125°	577	589	643	683	698	515
135°	713	724	744	777	788	551
145°	825	825	836	849	852	516
155°	908	903	911	914	909	418
165°	957	953	955	960	955	270
175°	979	974	976	980	974	93
180°	977	977	977	977	977	



TEST NUMBER: P331563-840

CATALOG NUMBER: S122DIW-S865D710U840-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	924.6	924.6	924.6	924.6	924.6	924.6	924.6	924.6	924.6	924.6	924.6
2.5°	930.0	929.3	928.6	927.9	927.2	925.9	924.2	922.6	920.9	919.3	920.5
5°	927.3	926.5	925.5	924.6	923.7	922.4	920.6	918.8	917.1	915.2	917.1
7.5°	919.0	918.4	917.8	917.3	916.7	915.6	914.2	912.9	911.5	910.2	912.3
10°	912.6	912.0	911.4	910.8	910.2	909.5	908.6	907.7	906.8	905.8	908.3
12.5°	901.8	902.0	902.1	902.2	902.3	902.0	901.4	900.7	900.1	899.4	901.8
15°	884.4	885.0	885.7	886.3	886.8	887.1	887.1	887.1	887.1	887.1	889.8
17.5°	861.9	863.1	864.4	865.7	866.9	868.0	869.0	869.9	870.9	871.8	874.6
20°	846.9	848.4	849.9	851.4	852.8	854.2	855.4	856.6	857.8	859.0	862.2
22.5°	830.8	832.5	834.2	836.0	837.7	839.4	841.1	842.7	844.4	846.1	849.4
25°	804.1	806.1	808.2	810.3	812.3	814.8	817.4	820.1	822.7	825.5	829.0
27.5°	771.8	775.3	778.6	782.0	785.5	788.7	791.8	795.1	798.2	801.3	805.9
30°	750.4	754.3	758.2	762.0	765.9	769.8	773.7	777.5	781.4	785.3	790.0
32.5°	726.8	731.1	735.5	739.9	744.3	748.7	753.3	757.9	762.4	767.0	772.5
35°	692.8	697.8	703.0	708.0	713.1	718.4	724.1	729.7	735.4	741.0	747.6
37.5°	655.8	661.7	667.5	673.3	679.1	685.7	693.1	700.4	707.7	715.1	722.4
40°	631.2	637.7	644.3	650.9	657.3	664.7	672.7	680.8	688.8	696.8	704.6
42.5°	607.5	614.1	620.7	627.2	633.8	641.7	650.9	660.1	669.3	678.6	687.0
45°	568.2	576.2	584.2	592.3	600.4	609.6	620.0	630.5	640.9	651.3	660.5
47.5°	529.3	538.1	546.8	555.6	564.3	574.8	587.0	599.3	611.5	623.7	633.3
50°	502.5	511.7	521.0	530.2	539.5	550.8	564.1	577.5	591.0	604.4	614.5
52.5°	476.8	486.5	496.2	505.9	515.6	527.6	541.7	555.7	569.9	584.0	594.3
55°	435.6	446.3	457.0	467.7	478.4	491.5	507.0	522.5	538.0	553.4	564.1
57.5°	394.8	406.9	419.0	431.0	443.1	457.1	472.8	488.7	504.4	520.2	531.8
60°	365.9	378.6	391.4	404.2	417.1	431.9	448.9	465.9	482.8	499.9	511.2
62.5°	340.1	353.4	366.7	379.9	393.2	408.4	425.4	442.3	459.3	476.3	488.3
65°	297.5	312.0	326.7	341.2	355.9	371.9	389.5	407.1	424.6	442.2	454.4
67.5°	258.3	273.6	288.8	304.1	319.3	336.0	354.0	371.9	389.9	407.9	420.2
70°	230.5	246.0	261.5	276.9	292.5	309.4	327.9	346.3	364.8	383.2	396.1
72.5°	204.8	220.8	236.7	252.7	268.6	285.9	304.7	323.4	342.0	360.7	373.3
75°	164.8	181.5	198.1	214.9	231.6	249.4	268.4	287.5	306.6	325.6	338.4
77.5°	126.2	143.7	161.2	178.5	196.0	214.4	233.8	253.2	272.5	291.9	304.6
80°	100.5	118.7	136.8	155.0	173.2	191.9	211.3	230.7	249.9	269.3	281.9
82.5°	79.1	96.9	114.9	132.8	150.8	169.6	189.1	208.7	228.3	247.9	260.4
85°	48.3	66.8	85.1	103.6	122.1	140.9	159.9	178.9	198.0	217.1	229.6
87.5°	26.4	44.5	62.6	80.7	98.8	117.4	136.8	156.1	175.4	194.7	207.0
90°	14.1	33.1	52.1	71.1	90.1	109.8	130.1	150.4	170.7	191.1	203.7
92.5°	26.6	42.5	58.5	74.4	90.3	107.8	126.7	145.7	164.7	183.6	195.7
95°	56.7	65.4	74.3	83.1	91.9	105.8	124.8	143.7	162.7	181.7	193.8
97.5°	100.6	98.5	96.2	94.1	91.9	100.7	120.4	140.1	159.8	179.5	191.2
100°	134.5	124.0	113.5	103.0	92.5	96.9	116.2	135.6	154.9	174.3	186.6
102.5°	170.8	176.3	181.8	187.3	192.8	192.5	186.3	180.2	174.1	167.9	180.4
105°	221.7	235.0	248.3	261.7	275.0	268.0	240.5	213.2	185.8	158.3	170.6
107.5°	281.1	291.9	302.6	313.3	324.0	311.0	274.5	237.8	201.3	164.6	172.9
110°	318.5	327.8	337.1	346.3	355.6	344.8	314.0	283.2	252.4	221.6	215.4



TEST NUMBER: P331563-840

CATALOG NUMBER: S122DIW-S865D710U840-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	354.8	362.6	370.6	378.5	386.5	391.7	394.4	397.1	399.7	402.3	354.6
115°	411.8	417.8	423.7	429.7	435.7	447.3	464.6	481.9	499.3	516.5	452.8
117.5°	461.6	466.7	471.8	477.0	482.1	492.2	507.3	522.4	537.5	552.6	543.8
120°	498.9	502.4	505.9	509.6	513.1	522.2	536.9	551.7	566.4	581.2	591.4
122.5°	530.6	533.5	536.4	539.5	542.4	551.0	565.3	579.6	593.8	608.1	617.3
125°	577.4	579.5	581.5	583.6	585.6	592.9	605.4	617.9	630.5	643.0	652.1
127.5°	621.2	623.1	625.1	627.0	628.9	634.9	644.8	654.8	664.7	674.6	683.6
130°	648.8	651.1	653.3	655.5	657.7	662.8	670.8	678.7	686.7	694.7	703.6
132.5°	677.1	678.9	680.8	682.7	684.5	688.6	695.2	701.8	708.3	714.9	723.3
135°	712.6	715.1	717.6	720.0	722.6	726.1	730.4	734.9	739.2	743.7	751.4
137.5°	749.7	751.4	753.2	754.9	756.5	758.8	761.7	764.7	767.6	770.5	777.5
140°	774.1	775.0	776.0	776.9	777.9	779.5	781.8	784.2	786.5	788.8	795.0
142.5°	794.4	795.3	796.1	796.9	797.7	799.2	801.3	803.4	805.5	807.6	812.7
145°	825.1	824.9	824.8	824.6	824.4	825.7	828.3	831.0	833.6	836.4	839.2
147.5°	852.8	852.3	851.7	851.1	850.5	851.5	854.1	856.8	859.4	862.0	863.1
150°	871.0	869.9	868.8	867.7	866.6	867.3	869.8	872.3	874.8	877.4	878.3
152.5°	886.3	885.0	883.8	882.5	881.3	881.9	884.3	886.7	889.1	891.5	892.4
155°	908.5	907.1	905.6	904.2	902.8	903.0	904.9	906.8	908.7	910.6	911.5
157.5°	925.8	924.6	923.4	922.2	921.1	921.1	922.4	923.7	925.0	926.3	927.5
160°	936.0	935.0	934.1	933.2	932.2	932.2	933.2	934.1	935.0	936.0	937.0
162.5°	945.0	944.1	943.2	942.2	941.3	941.2	942.0	942.9	943.7	944.5	945.5
165°	957.3	956.2	955.3	954.4	953.4	953.2	953.7	954.1	954.6	955.1	956.2
167.5°	966.2	965.3	964.4	963.4	962.5	962.3	962.7	963.1	963.6	964.0	965.1
170°	971.4	970.4	969.5	968.6	967.6	967.2	967.6	968.0	968.3	968.6	969.7
172.5°	974.7	973.8	972.9	971.9	971.0	970.7	971.0	971.3	971.6	971.9	973.0
175°	979.2	978.1	976.9	975.8	974.7	974.3	974.6	975.0	975.3	975.6	976.7
177.5°	979.9	979.0	978.1	977.2	976.3	975.9	976.0	976.2	976.3	976.4	977.3
180°	977.0	977.0	977.0	977.0	977.0	977.0	977.0	977.0	977.0	977.0	977.0



TEST NUMBER: P331563-840

CATALOG NUMBER: S122DIW-S865D710U840-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	924.6	924.6	924.6	924.6	924.6	924.6	924.6	924.6
2.5°	921.6	922.8	924.0	924.4	923.9	923.4	922.9	922.5
5°	918.8	920.6	922.4	923.1	922.8	922.5	922.2	921.9
7.5°	914.4	916.6	918.8	919.7	919.4	919.1	918.8	918.5
10°	910.6	913.0	915.4	916.5	916.1	915.8	915.5	915.2
12.5°	904.2	906.6	909.0	910.0	909.7	909.4	909.1	908.8
15°	892.4	895.1	897.9	899.0	898.7	898.4	898.1	897.9
17.5°	877.5	880.2	883.0	884.4	884.4	884.4	884.4	884.4
20°	865.6	868.8	872.0	873.7	873.7	873.7	873.7	873.7
22.5°	852.6	856.0	859.2	861.1	861.5	862.0	862.5	863.0
25°	832.6	836.2	839.8	842.0	842.8	843.7	844.7	845.6
27.5°	810.4	815.0	819.4	822.0	822.7	823.3	824.0	824.7
30°	794.8	799.5	804.4	807.2	808.0	808.9	809.8	810.7
32.5°	778.0	783.5	788.9	792.5	794.1	795.7	797.3	798.9
35°	754.2	760.7	767.3	771.5	773.7	775.8	777.8	779.9
37.5°	729.5	736.8	744.1	748.8	751.0	753.3	755.5	757.7
40°	712.3	720.0	727.8	733.0	735.7	738.3	741.0	743.8
42.5°	695.5	704.0	712.5	718.0	720.6	723.4	726.0	728.7
45°	669.7	678.9	688.2	694.3	697.3	700.2	703.3	706.2
47.5°	643.0	652.6	662.3	668.7	672.0	675.3	678.5	681.9
50°	624.6	634.7	644.9	651.6	654.8	658.1	661.4	664.7
52.5°	604.7	615.1	625.4	632.4	635.9	639.4	642.9	646.4
55°	574.9	585.6	596.3	603.6	607.4	611.4	615.2	619.0
57.5°	543.3	554.8	566.4	574.2	578.0	582.0	585.9	589.9
60°	522.5	533.8	545.1	552.8	557.0	561.2	565.3	569.6
62.5°	500.3	512.3	524.3	532.4	536.2	540.2	544.1	548.1
65°	466.7	478.9	491.1	499.1	502.9	506.9	510.7	514.5
67.5°	432.5	444.8	457.3	465.4	469.5	473.5	477.6	481.6
70°	408.9	421.6	434.4	442.6	446.3	449.8	453.4	457.0
72.5°	385.9	398.4	411.0	419.4	423.7	428.0	432.3	436.6
75°	351.2	364.1	376.9	385.2	389.1	392.9	396.8	400.7
77.5°	317.4	330.1	342.8	351.3	355.5	359.6	363.9	368.0
80°	294.4	306.9	319.4	327.7	331.8	336.1	340.2	344.4
82.5°	273.0	285.4	297.9	306.2	310.1	314.0	317.9	321.8
85°	242.1	254.6	267.1	275.5	279.6	283.8	287.9	292.2
87.5°	219.3	231.7	244.0	252.1	255.9	259.8	263.7	267.5
90°	216.4	229.1	241.8	250.1	254.0	257.9	261.8	265.7
92.5°	207.8	219.8	232.0	239.8	243.7	247.4	251.2	254.9
95°	205.9	218.0	230.0	237.8	241.3	244.7	248.1	251.5
97.5°	202.8	214.4	226.1	233.8	237.4	241.2	244.9	248.5
100°	198.8	211.2	223.4	231.4	234.9	238.5	242.1	245.7
102.5°	192.8	205.2	217.6	225.6	229.3	233.1	236.8	240.5
105°	182.7	194.8	206.9	215.0	218.9	222.8	226.7	230.7
107.5°	181.2	189.3	197.6	203.7	207.6	211.5	215.4	219.3
110°	209.1	203.0	196.8	195.7	199.5	203.5	207.4	211.3





TEST NUMBER: P331563-840

CATALOG NUMBER: S122DIW-S865D710U840-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	306.8	259.0	211.3	189.2	193.0	196.8	200.6	204.4
115°	389.0	325.2	261.4	225.5	217.4	209.3	201.4	193.3
117.5°	535.0	526.2	517.5	495.9	461.8	427.7	393.5	359.4
120°	601.7	611.9	622.1	618.2	600.3	582.4	564.4	546.4
122.5°	626.6	635.8	645.0	649.0	647.7	646.4	645.0	643.7
125°	661.3	670.3	679.5	685.6	688.8	692.0	695.1	698.2
127.5°	692.6	701.6	710.5	716.4	719.1	721.9	724.5	727.2
130°	712.5	721.3	730.2	735.8	738.0	740.2	742.5	744.7
132.5°	731.6	740.0	748.4	753.8	756.0	758.2	760.4	762.7
135°	759.2	767.1	774.9	779.8	781.9	784.0	786.1	788.1
137.5°	784.6	791.5	798.6	802.8	804.3	805.8	807.3	808.8
140°	801.1	807.4	813.5	817.1	818.1	819.1	820.1	821.1
142.5°	817.8	822.9	828.0	830.9	831.7	832.4	833.2	833.9
145°	842.1	845.0	847.9	849.7	850.4	851.1	851.8	852.5
147.5°	864.1	865.3	866.3	866.9	866.9	867.0	867.0	867.1
150°	879.2	880.2	881.1	881.2	880.4	879.6	878.8	878.1
152.5°	893.3	894.3	895.2	895.2	894.1	893.1	892.1	891.0
155°	912.4	913.4	914.3	914.1	912.9	911.7	910.4	909.2
157.5°	928.6	929.6	930.7	930.6	929.4	928.2	927.0	925.6
160°	937.9	938.9	939.8	939.7	938.6	937.5	936.4	935.3
162.5°	946.6	947.7	948.8	948.7	947.3	945.9	944.5	943.2
165°	957.4	958.4	959.5	959.5	958.4	957.4	956.2	955.1
167.5°	966.2	967.3	968.4	968.3	966.8	965.4	964.0	962.6
170°	970.8	971.8	972.9	972.8	971.4	970.0	968.6	967.1
172.5°	974.1	975.2	976.3	976.1	974.7	973.3	971.9	970.5
175°	977.9	978.9	980.0	979.8	978.2	976.6	975.0	973.5
177.5°	978.3	979.1	980.0	979.9	978.8	977.5	976.4	975.3
180°	977.0	977.0	977.0	977.0	977.0	977.0	977.0	977.0

(END OF REPORT)