

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: P332814-830

Luminaire Tested: **S124DIW-S1020D770U830-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332814-830
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-10,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124DIW-S1020D770U830-4F0-1E-UDD-D1
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 770 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6479.2 lumens
Efficiency: N/A
Efficacy: 120.9 lumens/watt
Spacing Criteria (0/90/45): 1.23 / 1.28 / 1.39
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 4' x H: 0.08')
CIE Type: General Diffuse

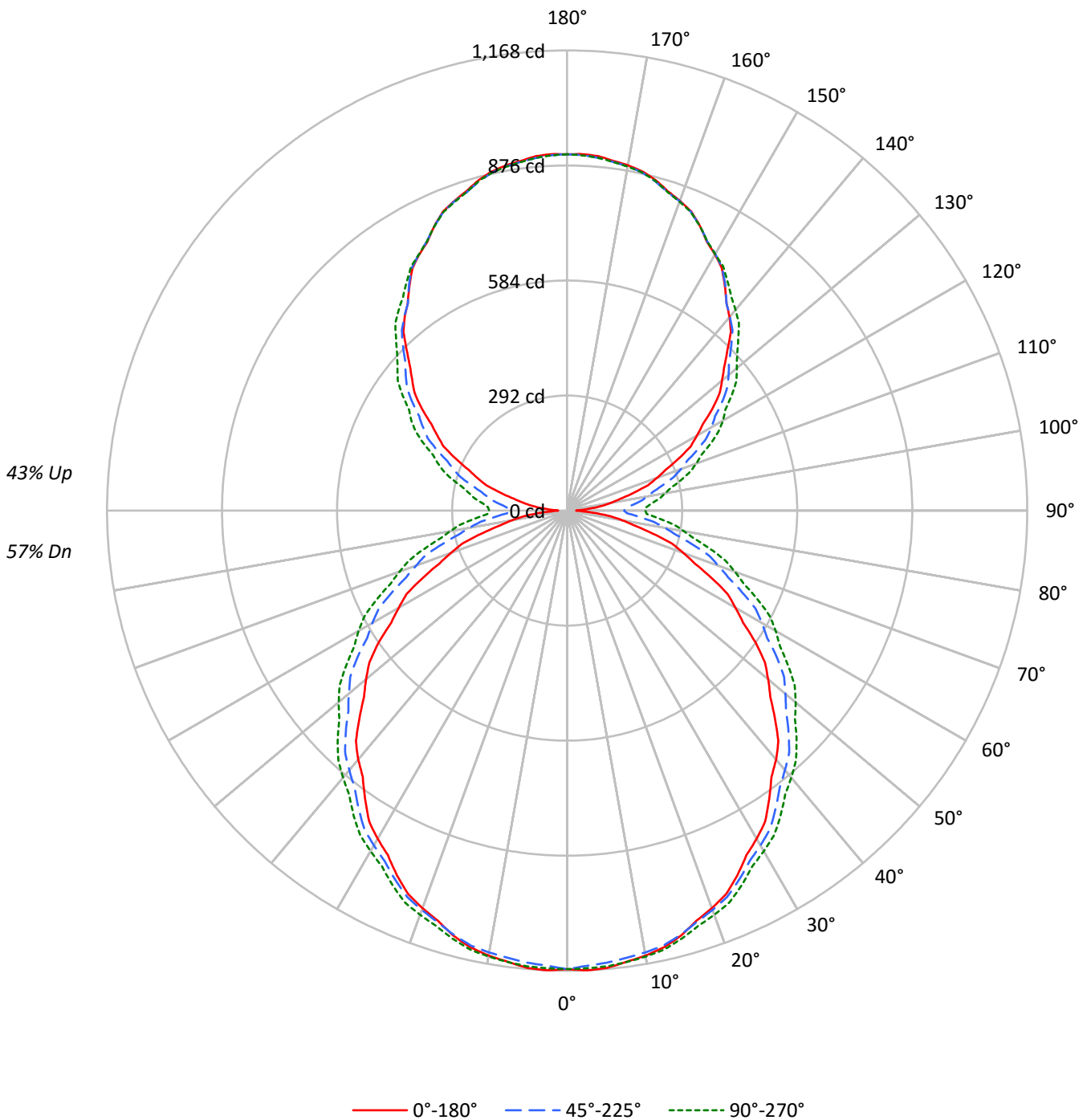
Input Watts (W): 53.6
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	0
RCR																		
0	109	109	109	109	101	101	101	101	87	87	87	74	74	74	62	62	62	57
1	98	93	89	85	91	87	83	80	75	72	69	63	61	59	53	52	50	45
2	89	81	74	68	82	75	69	64	65	60	56	55	52	49	46	44	41	37
3	81	71	63	56	75	66	59	53	57	51	47	48	44	41	40	37	35	31
4	74	62	54	47	68	58	51	45	50	44	40	43	38	34	36	32	30	26
5	68	55	47	40	62	52	44	38	45	39	34	38	33	30	32	29	26	22
6	62	50	41	35	57	46	39	33	40	34	29	34	30	26	29	25	22	19
7	57	45	36	31	53	42	34	29	36	30	26	31	26	23	27	23	20	17
8	53	40	32	27	49	38	31	26	33	27	23	29	24	20	24	20	18	15
9	50	37	29	24	46	35	28	23	30	25	20	26	22	18	22	19	16	14
10	46	34	26	21	43	32	25	20	28	22	18	24	20	16	21	17	14	12

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	9395	9395	9395
5°	9424	9182	9208
10°	9366	9032	9024
15°	9282	8858	8809
20°	9156	8666	8599
25°	9013	8450	8368
30°	8859	8237	8131
35°	8684	8018	7924
40°	8544	7809	7708
45°	8336	7617	7522
50°	8161	7395	7326
55°	7979	7187	7096
60°	7697	6921	6885
65°	7387	6635	6628
70°	7013	6309	6327
75°	6486	5950	6056
80°	5904	5605	5788
85°	5170	5301	5633



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	110.2	1.7
10°-20°	315.7	4.9
20°-30°	477.4	7.4
30°-40°	577.6	8.9
40°-50°	610.7	9.4
50°-60°	574.7	8.9
60°-70°	476.8	7.4
70°-80°	334.9	5.2
80°-90°	192.1	3.0
90°-100°	172.1	2.7
100°-110°	260.0	4.0
110°-120°	355.8	5.5
120°-130°	427.0	6.6
130°-140°	457.8	7.1
140°-150°	439.3	6.8
150°-160°	367.1	5.7
160°-170°	244.3	3.8
170°-180°	85.5	1.3
0°-30°	903.4	13.9
0°-40°	1481.0	22.9
0°-60°	2666.4	41.2
0°-90°	3670.3	56.6
90°-120°	787.9	12.2
90°-150°	2112.0	32.6
90°-180°	2809.0	43.4
0°-180°	6479.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1164	1164	1164	1164	1164	
5°	1165	1161	1152	1162	1161	111
15°	1117	1118	1114	1125	1125	315
25°	1022	1029	1033	1047	1049	470
35°	894	910	923	940	945	560
45°	745	770	795	816	824	576
55°	584	612	650	675	684	520
65°	404	446	490	521	533	400
75°	224	273	327	362	375	238
85°	69	124	182	220	235	74
90°	23	83	144	185	198	16
95°	59	109	166	202	216	60
105°	175	203	252	286	300	186
115°	313	326	365	392	401	309
125°	449	450	480	502	510	401
135°	576	580	589	608	614	445
145°	697	699	700	706	710	436
155°	798	797	797	799	797	367
165°	868	866	865	868	866	245
175°	903	900	899	903	899	86
180°	904	904	904	904	904	



TEST NUMBER: P332814-830

CATALOG NUMBER: S124DIW-S1020D770U830-4F0-1E-UDD-D1

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8
2.5°	1167.9	1167.2	1166.5	1165.8	1165.1	1163.9	1162.0	1160.2	1158.3	1156.4	1158.0
5°	1165.0	1164.1	1163.3	1162.4	1161.6	1160.1	1158.1	1156.0	1154.0	1152.0	1154.3
7.5°	1155.1	1154.6	1154.0	1153.6	1153.0	1152.0	1150.3	1148.6	1146.9	1145.2	1147.8
10°	1146.8	1146.5	1146.2	1145.9	1145.7	1144.7	1143.3	1141.9	1140.4	1139.0	1141.6
12.5°	1135.3	1135.3	1135.2	1135.1	1135.1	1134.5	1133.6	1132.6	1131.6	1130.6	1133.0
15°	1116.8	1117.1	1117.4	1117.7	1117.9	1117.7	1116.8	1116.0	1115.0	1114.2	1116.8
17.5°	1091.6	1092.4	1093.3	1094.1	1095.0	1095.3	1095.1	1095.0	1094.9	1094.7	1097.3
20°	1073.8	1074.7	1075.5	1076.4	1077.3	1077.9	1078.2	1078.5	1078.7	1079.0	1081.9
22.5°	1054.0	1055.1	1056.2	1057.3	1058.4	1059.2	1059.7	1060.3	1060.7	1061.3	1064.2
25°	1021.7	1023.4	1025.1	1026.9	1028.6	1029.9	1030.8	1031.7	1032.6	1033.4	1036.6
27.5°	985.7	988.3	990.8	993.3	995.9	997.9	999.2	1000.5	1001.8	1003.1	1006.2
30°	961.8	964.0	966.4	968.7	971.0	973.2	975.2	977.2	979.2	981.3	984.5
32.5°	935.7	938.5	941.2	944.1	946.8	949.3	951.6	953.9	956.1	958.4	962.0
35°	894.0	897.5	900.9	904.4	907.9	911.1	914.0	916.8	919.7	922.7	926.7
37.5°	852.0	856.0	860.0	864.0	868.0	871.8	875.3	878.9	882.6	886.2	890.2
40°	824.9	828.7	832.5	836.2	840.0	843.9	847.9	852.0	856.0	860.1	864.4
42.5°	793.6	797.9	802.1	806.3	810.5	815.0	819.7	824.5	829.2	834.1	838.9
45°	745.4	750.9	756.4	762.0	767.4	772.9	778.4	783.9	789.4	794.9	799.8
47.5°	699.3	704.9	710.6	716.3	722.0	728.0	734.3	740.7	747.2	753.5	758.6
50°	665.9	672.3	678.6	685.0	691.4	697.8	704.2	710.5	716.9	723.2	729.1
52.5°	632.5	638.9	645.3	651.7	658.1	664.9	672.1	679.5	686.7	694.1	699.8
55°	583.8	589.9	596.0	602.1	608.1	615.5	624.2	632.9	641.6	650.3	656.1
57.5°	529.3	536.9	544.4	552.0	559.5	567.5	576.2	584.8	593.4	602.1	609.0
60°	493.9	501.4	509.0	516.5	524.1	532.5	542.2	551.7	561.2	570.8	577.4
62.5°	459.5	467.7	476.0	484.2	492.4	501.2	510.9	520.4	530.0	539.5	546.2
65°	404.0	413.2	422.5	431.8	441.0	450.6	460.4	470.3	480.1	490.0	497.2
67.5°	350.5	360.4	370.2	380.1	389.9	400.1	410.7	421.2	431.8	442.3	449.7
70°	314.1	324.0	333.8	343.6	353.5	363.9	374.8	385.9	396.9	407.9	415.8
72.5°	278.6	288.7	298.8	308.9	319.0	329.8	341.5	353.2	365.0	376.6	384.2
75°	224.1	234.9	245.5	256.3	267.0	278.4	290.6	302.7	314.9	327.1	335.2
77.5°	173.3	184.6	196.0	207.4	218.8	230.7	243.6	256.3	269.0	281.7	289.9
80°	142.0	153.6	165.2	176.8	188.4	200.6	213.3	226.0	238.7	251.5	260.2
82.5°	110.7	122.8	134.9	146.9	158.9	171.4	184.1	196.8	209.6	222.3	231.2
85°	69.1	81.2	93.4	105.6	117.7	130.4	143.4	156.4	169.4	182.5	191.1
87.5°	39.0	51.2	63.3	75.5	87.7	100.2	113.1	126.0	138.9	151.9	160.5
90°	22.9	36.3	49.6	62.9	76.2	89.6	103.3	117.0	130.7	144.4	153.7
92.5°	34.8	47.1	59.6	71.9	84.4	97.2	110.5	123.9	137.1	150.4	159.2
95°	58.9	69.8	80.9	91.8	102.7	114.7	127.6	140.6	153.5	166.5	174.8
97.5°	88.7	98.0	107.4	116.7	126.0	137.2	150.2	163.3	176.3	189.4	197.6
100°	112.3	120.5	128.6	136.8	144.9	155.3	168.0	180.7	193.4	206.0	214.2
102.5°	138.0	144.9	151.7	158.5	165.4	175.0	187.4	199.7	212.1	224.3	232.4
105°	174.7	180.7	186.6	192.6	198.5	207.2	218.5	229.8	241.2	252.5	260.2
107.5°	215.7	220.6	225.6	230.5	235.4	243.1	253.3	263.5	273.7	284.0	291.5
110°	242.7	247.0	251.4	255.8	260.1	267.3	277.3	287.3	297.3	307.3	313.6



TEST NUMBER: P332814-830

CATALOG NUMBER: S124DIW-S1020D770U830-4F0-1E-UDD-D1

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	270.7	274.4	278.1	281.7	285.3	291.9	301.2	310.7	320.1	329.4	335.8
115°	312.8	315.5	318.0	320.7	323.3	329.0	338.0	346.9	355.9	364.9	371.1
117.5°	353.7	355.3	357.0	358.7	360.4	365.5	373.9	382.3	390.8	399.2	404.6
120°	380.0	381.5	383.0	384.6	386.1	390.8	398.7	406.6	414.5	422.4	427.4
122.5°	408.6	409.1	409.4	409.9	410.3	414.3	422.1	429.8	437.5	445.3	450.5
125°	449.4	449.1	448.8	448.6	448.3	451.7	458.7	465.8	472.9	480.0	485.2
127.5°	487.4	487.6	487.7	487.9	488.0	490.8	496.2	501.4	506.7	512.1	517.0
130°	513.2	513.3	513.5	513.7	513.9	516.3	520.9	525.6	530.2	534.8	539.7
132.5°	540.6	540.6	540.7	540.7	540.8	542.6	546.2	549.8	553.4	556.9	561.7
135°	575.5	576.5	577.4	578.3	579.3	580.7	582.8	584.8	586.8	588.8	593.1
137.5°	615.0	615.1	615.3	615.4	615.6	616.2	617.5	618.7	620.0	621.2	625.0
140°	641.3	641.3	641.3	641.4	641.4	641.5	641.8	642.2	642.4	642.7	646.3
142.5°	664.3	664.6	664.8	665.1	665.3	665.3	665.0	664.7	664.4	664.1	667.4
145°	697.4	697.7	698.0	698.3	698.7	698.9	699.1	699.3	699.4	699.6	701.2
147.5°	730.4	730.8	731.3	731.7	732.2	732.4	732.3	732.1	732.0	731.9	732.0
150°	750.5	750.8	751.2	751.5	751.9	752.1	752.1	752.1	752.1	752.1	752.1
152.5°	768.5	768.8	769.1	769.4	769.8	770.0	770.1	770.2	770.3	770.4	770.8
155°	797.5	797.5	797.5	797.5	797.5	797.4	797.2	797.1	796.9	796.8	797.4
157.5°	822.1	821.8	821.5	821.2	821.0	820.9	820.8	820.8	820.8	820.7	821.1
160°	836.7	836.5	836.3	836.2	836.0	835.8	835.8	835.6	835.4	835.3	835.8
162.5°	850.1	849.7	849.2	848.9	848.5	848.2	848.0	847.9	847.7	847.5	848.4
165°	868.2	867.7	867.2	866.8	866.3	865.9	865.5	865.3	865.0	864.6	865.5
167.5°	881.9	881.4	880.7	880.1	879.4	879.0	879.1	879.1	879.1	879.2	880.1
170°	889.9	889.0	888.3	887.5	886.7	886.4	886.6	886.7	886.8	887.0	888.0
172.5°	895.4	894.8	894.1	893.4	892.8	892.5	892.5	892.6	892.6	892.6	893.7
175°	903.1	902.3	901.5	900.8	900.0	899.6	899.4	899.2	899.1	898.9	900.0
177.5°	905.6	905.0	904.4	903.8	903.1	902.9	902.9	902.9	902.9	902.9	903.7
180°	904.5	904.5	904.5	904.5	904.5	904.5	904.5	904.5	904.5	904.5	904.5



TEST NUMBER: P332814-830

CATALOG NUMBER: S124DIW-S1020D770U830-4F0-1E-UDD-D1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8
2.5°	1159.7	1161.3	1162.9	1163.6	1163.4	1163.1	1162.9	1162.7
5°	1156.6	1159.0	1161.3	1162.2	1162.0	1161.7	1161.4	1161.1
7.5°	1150.5	1153.0	1155.7	1156.8	1156.5	1156.2	1155.9	1155.7
10°	1144.2	1146.8	1149.4	1150.6	1150.3	1150.0	1149.7	1149.4
12.5°	1135.4	1137.7	1140.1	1141.3	1141.2	1141.1	1141.1	1141.0
15°	1119.5	1122.0	1124.6	1125.8	1125.5	1125.2	1124.9	1124.6
17.5°	1099.9	1102.7	1105.3	1106.5	1106.3	1106.1	1105.8	1105.6
20°	1084.8	1087.7	1090.6	1092.0	1092.0	1092.0	1092.0	1092.0
22.5°	1067.1	1070.0	1072.9	1074.6	1075.1	1075.4	1075.9	1076.4
25°	1039.8	1042.9	1046.1	1047.9	1048.2	1048.5	1048.8	1049.0
27.5°	1009.1	1012.0	1015.0	1016.6	1017.0	1017.4	1017.7	1018.0
30°	987.7	990.8	994.0	995.9	996.5	997.0	997.7	998.2
32.5°	965.6	969.3	973.0	975.1	975.6	976.2	976.8	977.4
35°	930.8	934.8	938.9	941.3	942.2	943.0	944.0	944.8
37.5°	894.4	898.5	902.6	905.1	906.1	907.0	907.9	908.8
40°	868.7	873.1	877.5	880.2	881.4	882.5	883.7	884.9
42.5°	843.7	848.5	853.3	856.1	857.1	858.0	858.9	859.8
45°	804.7	809.7	814.6	817.8	819.3	820.7	822.2	823.6
47.5°	763.6	768.7	773.9	777.3	779.0	780.8	782.5	784.3
50°	734.8	740.6	746.4	750.2	752.0	753.7	755.4	757.1
52.5°	705.7	711.4	717.3	721.0	722.7	724.4	726.2	727.9
55°	661.9	667.7	673.4	677.2	678.9	680.7	682.4	684.2
57.5°	615.9	622.7	629.6	633.9	635.5	637.2	638.8	640.4
60°	584.1	590.8	597.4	601.9	604.3	606.5	608.9	611.1
62.5°	552.8	559.5	566.2	570.6	573.0	575.2	577.6	579.9
65°	504.4	511.7	519.0	523.8	526.0	528.4	530.7	533.0
67.5°	457.0	464.4	471.7	476.5	478.8	481.1	483.3	485.6
70°	423.5	431.3	439.1	444.1	446.1	448.2	450.2	452.2
72.5°	391.8	399.4	407.0	411.9	414.2	416.4	418.7	420.9
75°	343.3	351.4	359.5	364.9	367.5	370.1	372.7	375.3
77.5°	298.2	306.4	314.6	320.2	322.9	325.7	328.5	331.3
80°	268.9	277.6	286.3	291.7	294.1	296.4	298.7	301.0
82.5°	240.2	249.1	258.0	263.7	266.3	268.8	271.4	273.9
85°	199.8	208.5	217.2	223.0	225.9	228.8	231.7	234.6
87.5°	169.1	177.7	186.2	191.8	194.4	197.1	199.6	202.3
90°	163.1	172.4	181.7	187.7	190.3	192.9	195.6	198.2
92.5°	167.9	176.6	185.4	191.0	193.5	196.0	198.5	201.0
95°	183.1	191.4	199.7	205.1	207.7	210.4	212.9	215.6
97.5°	205.7	213.9	222.0	227.2	229.8	232.2	234.8	237.2
100°	222.3	230.5	238.6	243.6	245.7	247.7	249.8	251.8
102.5°	240.4	248.5	256.5	261.6	264.0	266.5	268.8	271.2
105°	267.9	275.6	283.3	288.6	291.3	294.2	296.9	299.7
107.5°	299.1	306.6	314.2	319.1	321.0	323.1	325.2	327.3
110°	319.9	326.3	332.6	337.1	340.0	342.8	345.5	348.4



TEST NUMBER: P332814-830

CATALOG NUMBER: S124DIW-S1020D770U830-4F0-1E-UDD-D1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	342.1	348.6	354.9	359.3	361.7	364.1	366.6	368.9
115°	377.3	383.5	389.7	393.8	395.6	397.5	399.4	401.2
117.5°	410.1	415.7	421.1	424.9	426.9	428.9	430.9	432.9
120°	432.5	437.5	442.5	446.4	448.9	451.6	454.2	456.9
122.5°	455.8	461.0	466.3	469.7	471.2	472.8	474.3	475.8
125°	490.4	495.6	500.8	504.1	505.5	506.9	508.3	509.8
127.5°	521.9	526.8	531.7	535.0	536.7	538.4	540.2	541.9
130°	544.6	549.5	554.4	557.4	558.6	559.7	560.8	561.9
132.5°	566.3	571.0	575.6	578.7	580.2	581.7	583.2	584.7
135°	597.5	601.8	606.1	609.0	610.2	611.5	612.7	614.1
137.5°	628.9	632.6	636.5	639.1	640.7	642.2	643.8	645.4
140°	649.9	653.6	657.1	659.6	660.9	662.1	663.5	664.8
142.5°	670.6	673.9	677.2	679.4	680.6	681.7	683.0	684.2
145°	702.7	704.3	705.9	707.0	707.7	708.4	709.1	709.7
147.5°	732.1	732.2	732.3	732.7	733.5	734.2	735.1	735.8
150°	752.1	752.1	752.1	752.0	751.8	751.6	751.5	751.3
152.5°	771.2	771.6	771.9	771.9	771.6	771.2	770.7	770.3
155°	798.1	798.6	799.3	799.3	798.6	798.1	797.4	796.8
157.5°	821.6	822.1	822.6	822.6	822.0	821.5	821.0	820.4
160°	836.2	836.7	837.2	837.0	836.2	835.4	834.6	833.9
162.5°	849.2	850.1	850.9	850.9	850.2	849.4	848.7	847.8
165°	866.5	867.4	868.4	868.6	867.9	867.2	866.7	866.0
167.5°	881.1	881.9	882.9	882.9	881.9	881.0	880.1	879.0
170°	888.9	889.9	890.8	890.7	889.6	888.5	887.4	886.4
172.5°	894.8	895.8	896.8	896.8	895.7	894.7	893.5	892.5
175°	901.1	902.2	903.2	903.2	902.2	901.1	900.0	898.9
177.5°	904.6	905.4	906.3	906.3	905.2	904.3	903.2	902.3
180°	904.5	904.5	904.5	904.5	904.5	904.5	904.5	904.5

(END OF REPORT)