

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: P332807-830

Luminaire Tested: **S124DIW-S1020D470U830-4F0-1E-UDD-D**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332807-830
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-6,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124DIW-S1020D470U830-4F0-1E-UDD-D
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 470 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5735.3 lumens
Efficiency: N/A
Efficacy: 124.1 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: Semi-Direct

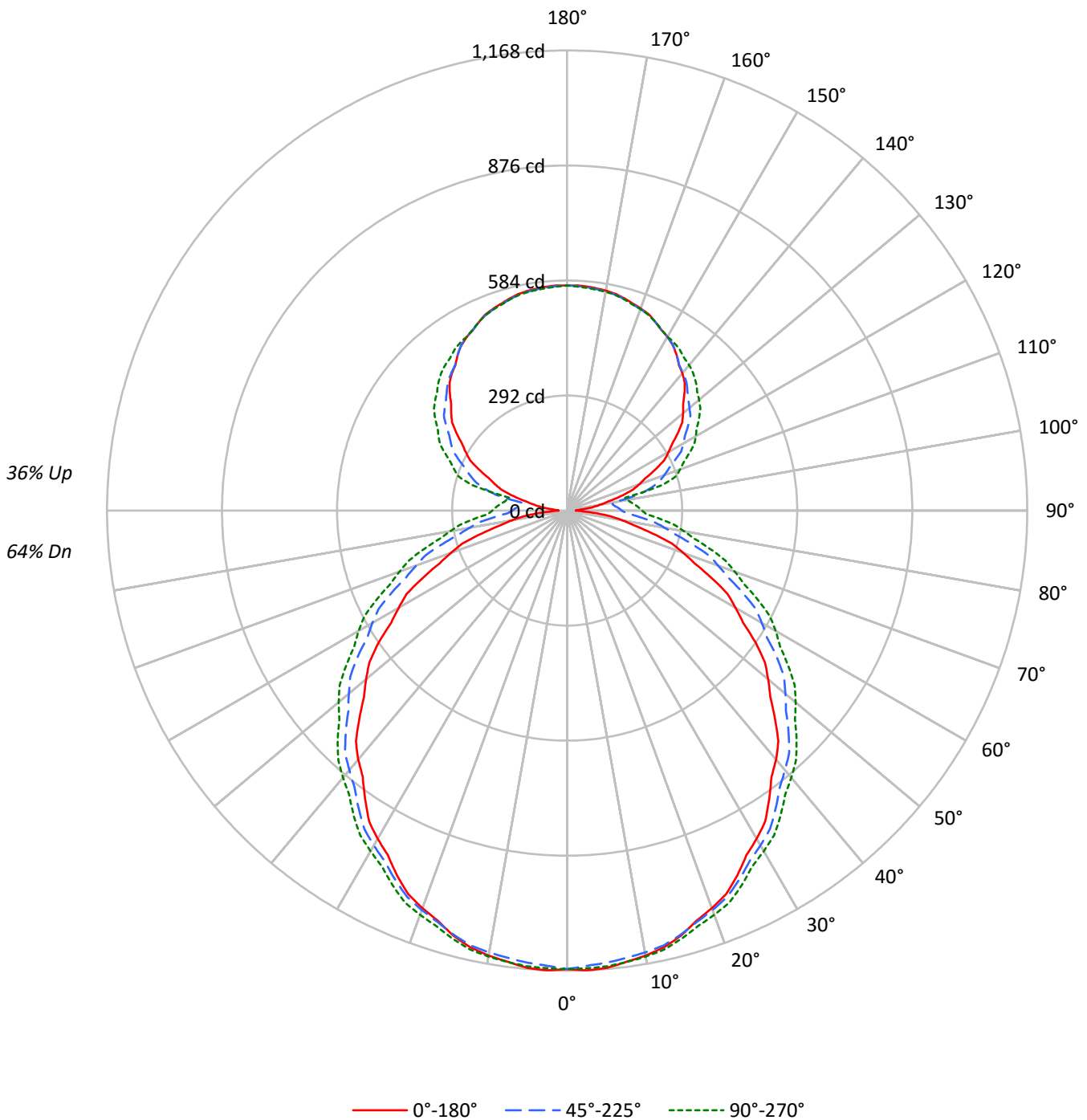
Input Watts (W): 46.2
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P332807-830

CATALOG NUMBER: S124DIW-S1020D470U830-4F0-1E-UDD-D

Luminous Intensity Polar Plot





TEST NUMBER: P332807-830

CATALOG NUMBER: S124DIW-S1020D470U830-4F0-1E-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	104	104	104	104	91	91	91	80	80	80	69	69	69	64
1	100	95	90	86	93	89	85	81	78	75	72	68	66	64	59	57	56	51
2	90	82	75	69	84	77	71	66	68	63	59	59	55	52	51	48	46	42
3	82	72	64	57	76	67	60	54	59	54	49	52	47	44	45	41	38	35
4	75	63	55	48	70	59	52	46	52	46	41	46	41	37	40	36	33	29
5	69	56	47	41	64	53	45	39	47	40	35	41	36	32	36	32	28	25
6	63	50	42	35	59	47	40	34	42	36	31	37	32	28	32	28	25	22
7	58	45	37	31	55	43	35	30	38	32	27	34	28	24	29	25	22	19
8	54	41	33	27	51	39	31	26	35	28	24	31	26	22	27	23	20	17
9	50	38	30	24	47	36	28	23	32	26	21	28	23	20	25	21	18	15
10	47	35	27	22	44	33	26	21	29	23	19	26	21	18	23	19	16	14

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



TEST NUMBER: P332807-830

CATALOG NUMBER: S124DIW-S1020D470U830-4F0-1E-UDD-D

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	110.2	1.9
10°-20°	315.7	5.5
20°-30°	477.4	8.3
30°-40°	577.6	10.1
40°-50°	610.7	10.6
50°-60°	574.7	10.0
60°-70°	476.8	8.3
70°-80°	334.9	5.8
80°-90°	191.0	3.3
90°-100°	132.0	2.3
100°-110°	207.8	3.6
110°-120°	294.1	5.1
120°-130°	334.0	5.8
130°-140°	337.2	5.9
140°-150°	305.4	5.3
150°-160°	244.0	4.3
160°-170°	157.4	2.7
170°-180°	54.2	0.9
0°-30°	903.4	15.8
0°-40°	1481.0	25.8
0°-60°	2666.4	46.5
0°-90°	3669.2	64.0
90°-120°	633.8	11.1
90°-150°	1610.4	28.1
90°-180°	2066.0	36.0
0°-180°	5735.3	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	73
90°	22	79	138	177	190	15
95°	40	70	123	159	173	44
105°	140	170	219	253	251	148
115°	248	262	302	331	341	244
125°	343	345	375	400	409	306
135°	421	421	432	453	462	325
145°	484	484	484	492	498	302
155°	529	530	528	530	529	244
165°	558	556	556	559	556	158
175°	571	569	569	572	568	54
180°	571	571	571	571	571	



TEST NUMBER: P332807-830

CATALOG NUMBER: S124DIW-S1020D470U830-4F0-1E-UDD-D

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°	38.8	50.9	62.9	74.9	86.9	99.3	112.2	125.1	137.9	150.7	159.2
90°	22.1	34.8	47.4	60.0	72.7	85.6	98.8	112.0	125.2	138.4	147.4
92.5°	25.2	35.6	46.2	56.6	67.1	79.0	92.2	105.4	118.6	131.8	140.5
95°	40.4	46.8	53.1	59.4	65.8	74.9	86.9	98.9	110.8	122.8	131.2
97.5°	65.2	75.5	85.8	96.0	106.2	111.9	113.1	114.2	115.4	116.6	124.2
100°	84.4	93.6	102.8	112.1	121.3	125.1	123.3	121.4	119.6	117.8	124.0
102.5°	107.0	114.8	122.6	130.5	138.4	146.9	156.4	165.7	175.0	184.4	174.6
105°	140.3	146.7	153.1	159.4	165.8	174.6	185.7	196.9	208.1	219.3	227.3
107.5°	173.4	178.5	183.5	188.5	193.6	201.5	212.3	223.1	233.8	244.6	252.1
110°	194.9	199.3	203.7	208.0	212.4	219.8	230.5	241.3	251.9	262.7	269.5



TEST NUMBER: P332807-830

CATALOG NUMBER: S124DIW-S1020D470U830-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	215.7	219.9	223.9	228.1	232.2	239.2	249.1	259.1	269.0	279.0	285.4
115°	247.9	250.8	253.6	256.6	259.5	265.5	274.7	283.8	293.0	302.2	308.7
117.5°	278.0	279.9	281.8	283.8	285.7	291.2	299.9	308.8	317.6	326.5	332.4
120°	297.4	298.7	299.9	301.1	302.4	307.2	315.5	323.8	332.1	340.4	346.4
122.5°	316.5	317.0	317.4	317.7	318.2	322.3	330.5	338.6	346.6	354.7	360.5
125°	342.7	342.8	342.9	342.9	343.0	346.6	353.6	360.7	367.8	374.8	380.6
127.5°	368.3	368.2	368.0	367.8	367.6	370.5	376.5	382.5	388.5	394.5	399.6
130°	384.1	383.9	383.7	383.5	383.3	385.7	390.6	395.5	400.4	405.3	410.7
132.5°	399.4	399.4	399.3	399.1	399.0	401.0	405.0	409.1	413.1	417.3	422.4
135°	421.2	421.1	421.0	420.9	420.8	422.0	424.4	426.8	429.2	431.6	436.5
137.5°	441.7	441.4	441.1	440.9	440.6	441.2	442.6	444.0	445.4	446.9	451.3
140°	455.0	454.9	454.8	454.7	454.6	454.8	455.2	455.7	456.2	456.7	460.7
142.5°	465.9	466.2	466.5	466.7	467.0	467.1	467.0	467.0	466.9	466.9	470.4
145°	484.0	484.0	484.0	484.0	484.0	484.0	484.0	484.0	484.0	484.0	485.8
147.5°	498.6	498.9	499.1	499.4	499.5	499.6	499.5	499.5	499.4	499.3	499.5
150°	509.2	509.3	509.3	509.4	509.5	509.5	509.4	509.3	509.3	509.2	509.2
152.5°	517.1	517.3	517.6	517.7	518.0	518.0	517.9	517.7	517.6	517.4	517.6
155°	529.2	529.3	529.4	529.5	529.6	529.5	529.2	529.0	528.7	528.4	528.8
157.5°	539.8	539.7	539.6	539.6	539.5	539.3	539.0	538.7	538.4	538.1	538.6
160°	545.9	545.6	545.4	545.1	544.8	544.6	544.5	544.4	544.3	544.2	544.8
162.5°	551.4	551.0	550.6	550.3	550.0	549.7	549.6	549.5	549.4	549.3	549.9
165°	558.3	557.8	557.3	556.9	556.4	556.2	556.2	556.2	556.2	556.2	556.9
167.5°	563.7	563.3	562.8	562.3	561.8	561.5	561.5	561.4	561.4	561.3	562.1
170°	566.8	566.3	565.7	565.1	564.6	564.3	564.4	564.5	564.6	564.7	565.4
172.5°	568.9	568.4	567.8	567.2	566.7	566.4	566.5	566.6	566.7	566.8	567.5
175°	571.1	570.5	570.0	569.4	568.8	568.6	568.7	568.8	568.9	569.0	569.9
177.5°	572.1	571.7	571.1	570.5	570.0	569.9	570.0	570.1	570.2	570.4	571.0
180°	571.1	571.1	571.1	571.1	571.1	571.1	571.1	571.1	571.1	571.1	571.1



TEST NUMBER: P332807-830

CATALOG NUMBER: S124DIW-S1020D470U830-4F0-1E-UDD-D

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°	167.7	176.3	184.7	190.3	192.8	195.5	198.0	200.7
90°	156.4	165.3	174.3	180.0	182.6	185.0	187.6	190.0
92.5°	149.3	158.1	166.7	172.3	174.7	177.0	179.4	181.7
95°	139.6	148.0	156.4	161.8	164.6	167.3	169.9	172.7
97.5°	131.9	139.5	147.1	152.2	154.9	157.4	160.0	162.6
100°	130.3	136.5	142.7	146.8	148.9	151.1	153.2	155.3
102.5°	164.8	155.0	145.1	141.3	143.6	145.9	148.2	150.4
105°	235.4	243.6	251.7	255.1	254.0	253.0	251.8	250.7
107.5°	259.7	267.2	274.8	279.7	282.2	284.6	287.1	289.5
110°	276.4	283.2	290.0	294.8	297.4	300.0	302.6	305.2



TEST NUMBER: P332807-830

CATALOG NUMBER: S124DIW-S1020D470U830-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	291.7	298.1	304.5	309.1	311.8	314.4	317.1	319.8
115°	315.3	321.9	328.4	332.7	334.7	336.8	338.7	340.8
117.5°	338.5	344.4	350.4	354.6	356.8	359.1	361.4	363.6
120°	352.3	358.4	364.3	368.3	370.5	372.6	374.8	376.9
122.5°	366.5	372.4	378.2	382.2	384.1	386.0	387.9	389.7
125°	386.3	392.2	397.9	401.7	403.6	405.4	407.3	409.1
127.5°	404.8	409.9	415.1	418.7	420.6	422.4	424.3	426.2
130°	415.9	421.2	426.6	430.1	431.9	433.6	435.3	437.1
132.5°	427.3	432.4	437.5	440.9	442.5	444.2	445.9	447.5
135°	441.3	446.1	450.9	454.3	456.2	458.2	460.1	462.0
137.5°	455.7	460.1	464.6	467.5	468.9	470.2	471.6	473.1
140°	464.8	468.8	472.9	475.7	477.2	478.7	480.3	481.8
142.5°	473.9	477.4	481.0	483.3	484.6	485.8	487.0	488.2
145°	487.7	489.5	491.3	492.9	494.3	495.6	496.9	498.3
147.5°	499.9	500.2	500.5	501.1	502.2	503.2	504.3	505.2
150°	509.2	509.2	509.2	509.3	509.3	509.4	509.5	509.6
152.5°	517.6	517.8	518.0	518.0	518.0	517.9	517.8	517.8
155°	529.1	529.5	529.9	530.0	529.7	529.4	529.1	528.9
157.5°	539.0	539.5	540.0	540.0	539.5	539.0	538.6	538.1
160°	545.4	545.9	546.5	546.5	545.9	545.4	544.8	544.2
162.5°	550.4	551.0	551.6	551.6	550.9	550.3	549.6	549.0
165°	557.7	558.5	559.2	559.1	558.3	557.4	556.6	555.7
167.5°	563.0	563.8	564.7	564.6	563.6	562.7	561.8	560.8
170°	566.2	566.9	567.8	567.7	566.7	565.7	564.8	563.8
172.5°	568.3	569.0	569.8	569.7	568.6	567.6	566.6	565.5
175°	570.7	571.6	572.4	572.2	571.1	570.0	568.8	567.7
177.5°	571.7	572.2	572.9	572.7	571.8	570.9	570.0	569.1
180°	571.1	571.1	571.1	571.1	571.1	571.1	571.1	571.1

(END OF REPORT)