

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: P332838-940

Luminaire Tested: **S124DIW-S1195D470U940-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332838-940
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-S1195D470U940-4F0-1E-UDD-D1
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1195 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 470 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5785.6 lumens
Efficiency: N/A
Efficacy: 110.4 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

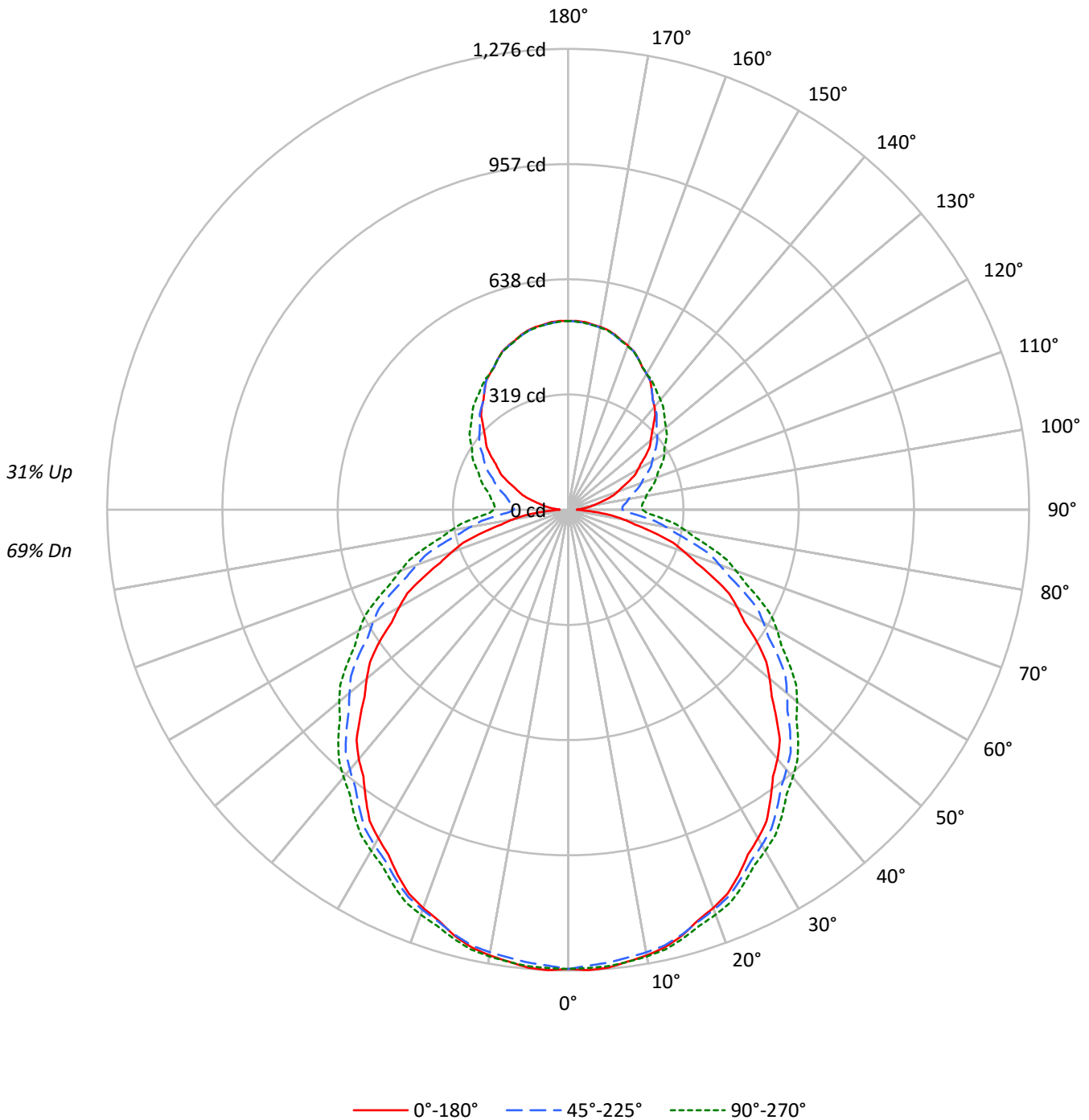
Input Watts (W): 52.4
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	112	112	112	112	106	106	106	106	94	94	94	84	84	84	74	74	74	69
1	101	96	91	87	95	90	86	83	81	77	75	71	69	67	63	61	60	55
2	91	83	76	70	86	78	72	67	70	65	61	62	58	55	55	52	49	45
3	83	72	64	58	78	68	61	55	61	55	50	54	50	46	48	44	41	38
4	76	64	55	48	71	60	52	46	54	48	43	48	43	39	43	38	35	32
5	69	57	48	41	65	54	46	40	48	42	36	43	38	33	38	34	30	27
6	64	51	42	36	60	48	40	34	43	37	32	39	33	29	35	30	27	24
7	59	46	37	31	55	44	36	30	39	33	28	35	30	26	31	27	23	21
8	55	42	33	28	52	40	32	27	36	29	25	32	27	23	29	24	21	19
9	51	38	30	25	48	36	29	24	33	27	22	30	24	20	27	22	19	17
10	48	35	27	22	45	33	26	21	30	24	20	27	22	19	25	20	17	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	10266	10266	10266
5°	10297	10032	10061
10°	10234	9869	9861
15°	10142	9679	9625
20°	10004	9469	9396
25°	9848	9234	9144
30°	9679	9000	8885
35°	9488	8760	8658
40°	9335	8533	8422
45°	9109	8323	8219
50°	8917	8080	8004
55°	8719	7852	7753
60°	8410	7562	7524
65°	8071	7250	7242
70°	7660	6893	6914
75°	7091	6501	6617
80°	6453	6124	6326
85°	5641	5792	6154



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	120.4	2.1
10°-20°	345.0	6.0
20°-30°	521.7	9.0
30°-40°	631.2	10.9
40°-50°	667.3	11.5
50°-60°	628.0	10.9
60°-70°	521.0	9.0
70°-80°	366.0	6.3
80°-90°	208.5	3.6
90°-100°	157.3	2.7
100°-110°	193.0	3.3
110°-120°	234.3	4.0
120°-130°	262.9	4.5
130°-140°	271.5	4.7
140°-150°	255.1	4.4
150°-160°	212.1	3.7
160°-170°	141.1	2.4
170°-180°	49.4	0.9
0°-30°	987.1	17.1
0°-40°	1618.2	28.0
0°-60°	2913.5	50.4
0°-90°	4008.9	69.3
90°-120°	584.6	10.1
90°-150°	1374.1	23.8
90°-180°	1777.0	30.7
0°-180°	5785.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1272	1272	1272	1272	1272	
5°	1273	1268	1259	1269	1269	121
15°	1220	1221	1218	1229	1229	344
25°	1116	1125	1129	1144	1146	514
35°	977	994	1008	1027	1032	611
45°	814	842	869	892	900	629
55°	638	668	710	738	748	568
65°	441	487	535	570	582	437
75°	245	298	357	396	410	260
85°	75	136	199	240	256	80
90°	24	86	150	192	206	17
95°	43	94	155	193	207	42
105°	107	137	190	226	240	114
115°	185	199	242	272	283	183
125°	262	263	296	321	330	234
135°	334	337	346	367	376	259
145°	404	404	404	412	417	253
155°	461	461	460	462	460	212
165°	501	500	499	502	500	141
175°	522	520	519	522	519	49
180°	522	522	522	522	522	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1271.6	1271.6	1271.6	1271.6	1271.6	1271.6	1271.6	1271.6	1271.6	1271.6	1271.6
2.5°	1276.1	1275.3	1274.6	1273.8	1273.1	1271.7	1269.6	1267.7	1265.6	1263.6	1265.3
5°	1272.9	1272.0	1271.0	1270.2	1269.2	1267.6	1265.3	1263.1	1261.0	1258.7	1261.2
7.5°	1262.1	1261.6	1261.0	1260.4	1259.9	1258.6	1256.9	1255.0	1253.1	1251.3	1254.2
10°	1253.0	1252.7	1252.4	1252.1	1251.8	1250.8	1249.2	1247.7	1246.1	1244.5	1247.3
12.5°	1240.5	1240.5	1240.4	1240.3	1240.3	1239.7	1238.6	1237.5	1236.4	1235.4	1238.0
15°	1220.3	1220.6	1220.9	1221.2	1221.6	1221.2	1220.3	1219.3	1218.3	1217.5	1220.3
17.5°	1192.7	1193.6	1194.5	1195.5	1196.4	1196.9	1196.7	1196.4	1196.2	1196.1	1199.0
20°	1173.3	1174.2	1175.2	1176.2	1177.1	1177.7	1178.0	1178.4	1178.7	1179.0	1182.1
22.5°	1151.6	1152.8	1154.1	1155.2	1156.5	1157.4	1157.9	1158.5	1159.0	1159.6	1162.8
25°	1116.3	1118.2	1120.2	1122.0	1123.9	1125.3	1126.3	1127.2	1128.2	1129.2	1132.7
27.5°	1077.0	1079.9	1082.6	1085.4	1088.2	1090.3	1091.7	1093.2	1094.7	1096.1	1099.3
30°	1050.8	1053.4	1055.9	1058.5	1061.0	1063.4	1065.5	1067.7	1070.0	1072.2	1075.7
32.5°	1022.3	1025.4	1028.4	1031.4	1034.5	1037.2	1039.7	1042.2	1044.6	1047.1	1051.1
35°	976.8	980.6	984.4	988.2	991.9	995.4	998.6	1001.7	1005.0	1008.1	1012.5
37.5°	930.9	935.3	939.7	944.1	948.4	952.5	956.4	960.4	964.3	968.2	972.8
40°	901.3	905.4	909.5	913.6	917.7	922.0	926.5	930.9	935.3	939.8	944.5
42.5°	867.2	871.7	876.4	881.0	885.6	890.6	895.7	900.9	906.1	911.3	916.6
45°	814.5	820.5	826.5	832.5	838.5	844.5	850.5	856.6	862.6	868.6	874.0
47.5°	764.0	770.3	776.5	782.7	788.9	795.5	802.5	809.4	816.4	823.3	828.8
50°	727.6	734.6	741.5	748.5	755.5	762.4	769.4	776.3	783.3	790.2	796.6
52.5°	691.2	698.1	705.1	712.0	719.0	726.5	734.4	742.4	750.4	758.4	764.7
55°	637.9	644.5	651.2	657.8	664.5	672.5	682.1	691.5	701.1	710.5	716.8
57.5°	578.4	586.7	594.9	603.1	611.3	620.1	629.5	639.0	648.5	657.8	665.4
60°	539.7	547.9	556.1	564.4	572.6	581.9	592.4	602.8	613.2	623.7	631.0
62.5°	502.0	511.0	520.0	529.1	538.0	547.7	558.2	568.6	579.1	589.5	596.7
65°	441.4	451.6	461.6	471.8	481.9	492.3	503.1	513.9	524.6	535.4	543.3
67.5°	383.0	393.8	404.6	415.3	426.1	437.2	448.7	460.2	471.7	483.3	491.3
70°	343.1	353.9	364.7	375.4	386.2	397.6	409.6	421.6	433.6	445.7	454.2
72.5°	304.4	315.4	326.5	337.4	348.5	360.3	373.2	385.9	398.7	411.5	419.8
75°	245.0	256.6	268.3	280.0	291.8	304.3	317.5	330.8	344.1	357.4	366.2
77.5°	189.4	201.8	214.2	226.6	239.0	252.2	266.1	280.0	293.9	307.8	316.8
80°	155.2	167.8	180.5	193.1	205.8	219.1	233.0	247.0	260.9	274.8	284.3
82.5°	121.0	134.2	147.4	160.5	173.7	187.3	201.2	215.1	229.0	242.9	252.6
85°	75.4	88.7	102.0	115.3	128.6	142.4	156.6	170.9	185.1	199.4	208.8
87.5°	42.4	55.5	68.6	81.7	94.8	108.3	122.3	136.3	150.3	164.3	173.7
90°	24.0	37.6	51.3	64.9	78.6	92.6	106.9	121.2	135.5	149.9	159.5
92.5°	30.3	42.8	55.4	67.9	80.3	93.7	107.8	121.9	136.0	150.2	159.3
95°	42.7	54.0	65.3	76.5	87.7	100.1	113.8	127.4	141.0	154.6	163.4
97.5°	59.1	68.8	78.4	88.0	97.6	109.3	122.9	136.4	150.1	163.6	172.2
100°	72.2	80.8	89.4	98.0	106.6	117.4	130.6	143.7	156.9	170.0	178.8
102.5°	87.1	94.4	101.8	109.1	116.5	126.6	139.5	152.3	165.1	177.9	186.5
105°	107.0	113.4	119.8	126.2	132.6	141.9	153.9	166.0	178.1	190.1	198.3
107.5°	130.5	135.8	141.1	146.4	151.7	159.9	171.0	182.2	193.3	204.5	212.5
110°	145.5	150.2	154.8	159.3	164.0	171.7	182.8	193.8	204.7	215.7	222.8



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	161.2	165.1	169.2	173.1	177.1	184.2	194.7	205.0	215.4	225.9	232.8
115°	184.8	187.5	190.4	193.2	196.1	202.5	212.5	222.4	232.4	242.3	249.1
117.5°	208.2	210.0	211.8	213.6	215.3	220.9	230.2	239.4	248.8	258.1	264.3
120°	222.9	224.2	225.5	226.9	228.1	233.3	242.1	251.0	259.9	268.9	274.7
122.5°	239.3	239.7	240.0	240.4	240.7	245.1	253.7	262.3	270.8	279.4	285.3
125°	262.3	262.0	261.6	261.4	261.0	264.7	272.6	280.4	288.2	296.0	301.8
127.5°	284.1	284.0	283.9	283.9	283.8	286.8	292.7	298.6	304.6	310.6	316.0
130°	298.5	298.4	298.4	298.3	298.3	300.8	305.9	310.9	315.9	321.0	326.5
132.5°	314.2	314.1	314.1	313.9	313.8	315.8	319.7	323.7	327.7	331.6	336.9
135°	333.8	334.3	334.8	335.4	335.9	337.3	339.6	341.7	343.9	346.2	351.1
137.5°	356.6	356.5	356.4	356.4	356.3	356.9	358.1	359.4	360.5	361.8	366.1
140°	371.8	371.7	371.5	371.4	371.2	371.3	371.7	371.9	372.3	372.6	376.6
142.5°	384.5	384.7	384.8	384.9	385.0	385.0	384.7	384.4	384.1	383.9	387.4
145°	403.5	403.5	403.6	403.6	403.7	403.7	403.8	403.9	403.9	404.0	405.9
147.5°	422.6	422.7	422.8	422.8	423.0	423.0	422.9	422.8	422.8	422.8	422.9
150°	434.2	434.3	434.3	434.4	434.4	434.4	434.4	434.4	434.4	434.4	434.4
152.5°	444.1	444.2	444.3	444.5	444.6	444.8	444.8	444.9	445.0	445.1	445.2
155°	460.7	460.7	460.7	460.7	460.7	460.6	460.5	460.4	460.3	460.2	460.6
157.5°	474.8	474.7	474.6	474.4	474.2	474.1	474.1	474.1	474.0	474.0	474.3
160°	483.3	483.2	483.1	483.0	483.0	482.9	482.8	482.7	482.6	482.5	482.8
162.5°	491.1	490.8	490.5	490.4	490.1	489.9	489.8	489.7	489.6	489.5	490.1
165°	501.4	501.1	500.9	500.6	500.3	500.2	500.0	499.8	499.6	499.4	500.0
167.5°	509.4	509.1	508.7	508.4	507.9	507.7	507.7	507.8	507.8	507.8	508.4
170°	514.0	513.5	513.1	512.6	512.2	512.0	512.1	512.2	512.3	512.4	512.9
172.5°	517.2	516.8	516.5	516.1	515.7	515.5	515.5	515.6	515.6	515.6	516.2
175°	521.7	521.2	520.8	520.3	519.9	519.6	519.5	519.4	519.3	519.2	519.9
177.5°	523.1	522.7	522.4	522.0	521.7	521.5	521.5	521.5	521.5	521.5	522.0
180°	522.5	522.5	522.5	522.5	522.5	522.5	522.5	522.5	522.5	522.5	522.5



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1271.6	1271.6	1271.6	1271.6	1271.6	1271.6	1271.6	1271.6
2.5°	1267.1	1268.9	1270.7	1271.4	1271.1	1270.9	1270.7	1270.4
5°	1263.8	1266.3	1268.8	1270.0	1269.6	1269.4	1269.0	1268.7
7.5°	1257.0	1259.9	1262.8	1264.0	1263.6	1263.4	1263.0	1262.8
10°	1250.2	1253.0	1255.9	1257.1	1256.9	1256.5	1256.2	1255.9
12.5°	1240.5	1243.1	1245.7	1247.1	1247.0	1246.9	1246.8	1246.8
15°	1223.2	1226.0	1228.8	1230.1	1229.8	1229.5	1229.1	1228.8
17.5°	1201.9	1204.8	1207.7	1209.1	1208.8	1208.5	1208.3	1208.0
20°	1185.4	1188.5	1191.7	1193.2	1193.2	1193.2	1193.2	1193.2
22.5°	1165.9	1169.1	1172.2	1174.1	1174.7	1175.1	1175.6	1176.2
25°	1136.1	1139.6	1143.1	1145.0	1145.3	1145.6	1145.9	1146.2
27.5°	1102.6	1105.8	1109.0	1110.8	1111.3	1111.6	1112.0	1112.3
30°	1079.1	1082.6	1086.1	1088.2	1088.8	1089.4	1090.0	1090.7
32.5°	1055.1	1059.1	1063.1	1065.4	1066.0	1066.7	1067.3	1067.9
35°	1017.0	1021.4	1025.8	1028.5	1029.5	1030.5	1031.4	1032.3
37.5°	977.2	981.7	986.2	989.0	990.0	991.0	992.0	993.0
40°	949.2	954.0	958.8	961.8	963.0	964.3	965.5	966.8
42.5°	921.8	927.0	932.3	935.4	936.5	937.5	938.4	939.5
45°	879.3	884.8	890.1	893.6	895.2	896.7	898.3	899.9
47.5°	834.5	840.0	845.6	849.3	851.2	853.1	855.0	856.9
50°	802.9	809.2	815.6	819.7	821.6	823.5	825.4	827.2
52.5°	771.1	777.4	783.6	787.8	789.7	791.6	793.4	795.4
55°	723.2	729.5	735.8	739.9	741.8	743.8	745.6	747.5
57.5°	672.9	680.5	688.0	692.6	694.4	696.2	697.9	699.7
60°	638.2	645.5	652.7	657.6	660.2	662.7	665.3	667.8
62.5°	604.0	611.4	618.6	623.5	626.1	628.6	631.1	633.6
65°	551.2	559.1	567.0	572.2	574.8	577.3	579.9	582.4
67.5°	499.4	507.4	515.4	520.7	523.2	525.6	528.1	530.6
70°	462.8	471.3	479.8	485.3	487.4	489.6	491.9	494.1
72.5°	428.1	436.4	444.7	450.0	452.5	455.0	457.4	459.9
75°	375.1	384.0	392.8	398.7	401.5	404.4	407.2	410.1
77.5°	325.8	334.8	343.8	349.8	352.8	355.9	358.9	361.9
80°	293.8	303.3	312.8	318.8	321.3	323.9	326.4	329.0
82.5°	262.4	272.2	281.9	288.2	291.0	293.7	296.5	299.3
85°	218.3	227.8	237.3	243.6	246.8	249.9	253.2	256.3
87.5°	183.0	192.3	201.5	207.6	210.4	213.2	216.1	218.8
90°	169.2	179.0	188.7	194.9	197.6	200.4	203.0	205.8
92.5°	168.6	177.9	187.1	193.1	195.7	198.3	201.0	203.6
95°	172.2	181.0	189.8	195.6	198.5	201.3	204.2	207.1
97.5°	180.8	189.5	198.0	203.8	206.4	209.2	211.9	214.6
100°	187.5	196.2	204.9	210.4	212.6	214.8	217.0	219.3
102.5°	195.0	203.6	212.0	217.7	220.2	222.7	225.2	227.7
105°	206.5	214.7	222.8	228.4	231.1	234.0	236.7	239.6
107.5°	220.5	228.5	236.6	241.7	244.0	246.2	248.5	250.7
110°	229.9	237.0	244.2	249.1	251.8	254.7	257.4	260.3



TEST NUMBER: P332838-940

CATALOG NUMBER: S124DIW-S1195D470U940-4F0-1E-UDD-D1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	239.9	246.8	253.8	258.6	261.2	263.8	266.4	268.9
115°	256.0	262.9	269.7	274.3	276.4	278.5	280.6	282.8
117.5°	270.6	276.9	283.2	287.5	289.8	292.2	294.5	296.9
120°	280.6	286.5	292.4	296.7	299.3	302.1	304.8	307.6
122.5°	291.4	297.4	303.4	307.4	309.3	311.3	313.3	315.2
125°	307.7	313.5	319.4	323.2	324.9	326.6	328.3	330.0
127.5°	321.6	327.1	332.6	336.4	338.4	340.4	342.4	344.4
130°	332.1	337.5	343.0	346.6	348.1	349.6	351.2	352.8
132.5°	342.1	347.4	352.7	356.2	357.9	359.7	361.5	363.2
135°	356.0	360.8	365.7	369.0	370.6	372.2	373.8	375.5
137.5°	370.5	375.0	379.3	382.4	384.0	385.6	387.3	388.9
140°	380.6	384.7	388.7	391.5	392.9	394.4	395.9	397.4
142.5°	391.0	394.7	398.2	400.6	402.0	403.3	404.6	405.9
145°	407.7	409.5	411.3	412.7	413.7	414.7	415.7	416.7
147.5°	423.1	423.3	423.5	424.0	424.9	425.9	426.8	427.7
150°	434.4	434.4	434.4	434.4	434.3	434.2	434.1	434.0
152.5°	445.5	445.7	445.9	445.9	445.7	445.4	445.2	445.0
155°	460.9	461.3	461.6	461.6	461.3	460.9	460.6	460.2
157.5°	474.6	474.8	475.1	475.1	474.8	474.5	474.2	473.9
160°	483.0	483.3	483.6	483.5	483.0	482.6	482.1	481.6
162.5°	490.5	491.1	491.5	491.5	491.1	490.6	490.2	489.7
165°	500.5	501.1	501.6	501.7	501.3	501.0	500.6	500.2
167.5°	508.9	509.4	510.0	510.0	509.4	508.9	508.3	507.7
170°	513.4	514.0	514.5	514.4	513.8	513.2	512.6	511.9
172.5°	516.8	517.5	518.0	518.0	517.4	516.7	516.1	515.5
175°	520.5	521.1	521.7	521.7	521.1	520.5	519.9	519.2
177.5°	522.5	523.0	523.5	523.4	522.9	522.4	521.7	521.2
180°	522.5	522.5	522.5	522.5	522.5	522.5	522.5	522.5

(END OF REPORT)