

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: P332837-940

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

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332837-940
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-S1195D470U940-4F0-1E-UDD-D
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1195 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: 6007.4 lumens
Efficiency: N/A
Efficacy: 114.6 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

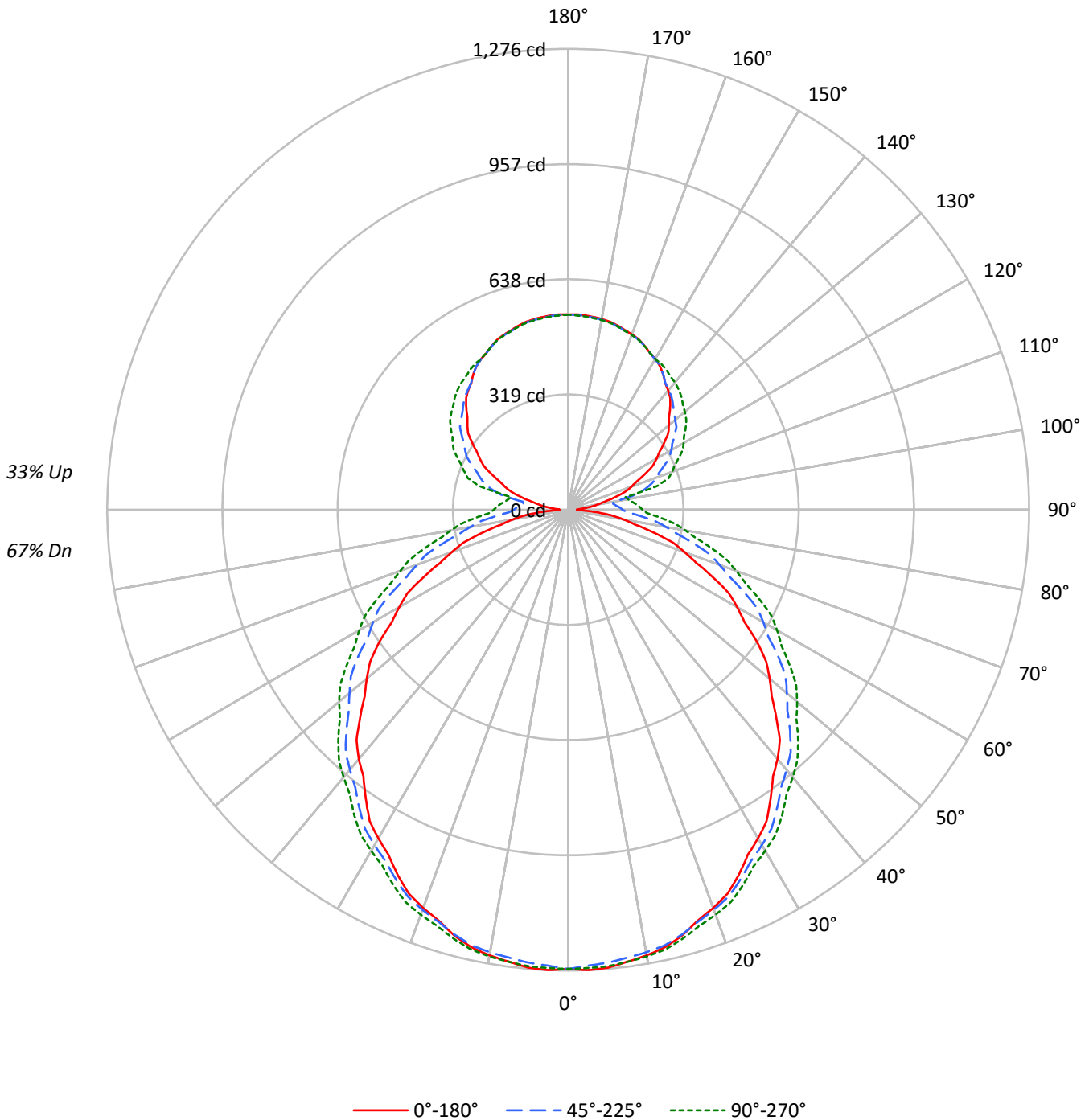
Input Watts (W): 52.4
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	111	111	111	111	105	105	105	105	93	93	93	82	82	82	71	71	71	67
1	100	95	91	87	94	90	86	82	79	76	73	70	67	65	61	59	58	53
2	91	82	75	70	85	78	71	66	69	64	60	61	57	53	53	50	48	44
3	82	72	64	57	77	68	61	55	60	54	50	53	48	45	46	43	40	36
4	75	63	55	48	70	60	52	46	53	47	42	47	42	38	41	37	34	31
5	69	56	48	41	65	53	45	39	47	41	36	42	37	33	37	33	29	26
6	64	51	42	36	59	48	40	34	43	36	31	38	33	28	33	29	26	23
7	59	46	37	31	55	43	35	30	39	32	27	34	29	25	30	26	23	20
8	55	41	33	28	51	39	32	26	35	29	24	32	26	22	28	24	20	18
9	51	38	30	25	48	36	29	24	32	26	22	29	24	20	26	21	18	16
10	47	35	27	22	45	33	26	21	30	24	20	27	22	18	24	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	2.0
10°-20°	345.0	5.7
20°-30°	521.7	8.7
30°-40°	631.2	10.5
40°-50°	667.3	11.1
50°-60°	628.0	10.5
60°-70°	521.0	8.7
70°-80°	366.0	6.1
80°-90°	208.5	3.5
90°-100°	141.3	2.4
100°-110°	208.8	3.5
110°-120°	286.4	4.8
120°-130°	320.6	5.3
130°-140°	321.0	5.3
140°-150°	289.3	4.8
150°-160°	230.9	3.8
160°-170°	148.9	2.5
170°-180°	51.3	0.9
0°-30°	987.1	16.4
0°-40°	1618.2	26.9
0°-60°	2913.5	48.5
0°-90°	4008.9	66.7
90°-120°	636.5	10.6
90°-150°	1567.4	26.1
90°-180°	1999.0	33.3
0°-180°	6007.4	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	16
95°	41	75	133	172	187	43
105°	134	167	220	257	256	142
115°	236	251	295	326	337	232
125°	325	327	360	387	397	290
135°	399	399	410	433	443	308
145°	458	458	458	467	473	286
155°	501	501	500	501	500	231
165°	528	526	526	529	526	149
175°	540	538	538	541	537	51
180°	540	540	540	540	540	



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

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°	26.8	38.2	49.7	61.1	72.5	85.4	99.7	114.0	128.4	142.7	152.1
95°	40.8	48.2	55.6	62.9	70.3	80.5	93.5	106.6	119.7	132.8	141.9
97.5°	64.0	74.9	85.8	96.7	107.5	114.4	117.3	120.1	122.9	125.7	134.0
100°	81.9	91.8	101.7	111.5	121.3	126.2	126.2	126.1	126.1	126.0	133.0
102.5°	103.3	111.6	120.1	128.5	136.9	146.3	156.8	167.3	177.7	188.2	180.0
105°	134.5	141.3	148.2	155.1	161.9	171.5	183.6	195.7	207.9	220.1	228.8
107.5°	165.8	171.2	176.6	182.2	187.6	196.2	207.9	219.5	231.2	242.9	251.1
110°	186.0	190.6	195.4	200.1	204.7	212.9	224.5	236.1	247.8	259.4	266.8



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	205.5	209.9	214.4	218.7	223.2	230.8	241.6	252.4	263.2	274.0	281.1
115°	235.7	238.8	241.9	245.0	248.2	254.7	264.7	274.7	284.8	294.9	302.0
117.5°	264.0	266.2	268.2	270.3	272.3	278.2	287.8	297.5	307.1	316.7	323.2
120°	282.3	283.7	284.9	286.2	287.6	292.7	301.8	310.9	320.0	329.1	335.6
122.5°	300.4	300.9	301.2	301.7	302.0	306.7	315.5	324.2	333.1	341.9	348.3
125°	324.9	325.0	325.0	325.1	325.1	329.0	336.7	344.5	352.2	359.9	366.2
127.5°	349.3	349.0	348.7	348.6	348.3	351.4	357.9	364.4	371.0	377.5	383.1
130°	363.9	363.7	363.5	363.3	363.0	365.6	371.0	376.2	381.6	386.9	392.7
132.5°	378.5	378.4	378.2	378.0	377.9	380.0	384.4	388.8	393.2	397.5	403.1
135°	398.9	398.8	398.7	398.6	398.5	399.8	402.3	404.9	407.5	410.1	415.3
137.5°	418.2	417.9	417.7	417.4	417.1	417.7	419.2	420.6	422.1	423.6	428.4
140°	430.8	430.7	430.5	430.4	430.3	430.4	431.0	431.4	431.9	432.4	436.8
142.5°	441.0	441.2	441.5	441.8	442.0	442.1	442.0	441.9	441.8	441.8	445.6
145°	458.1	458.1	458.0	458.0	457.9	457.9	457.9	457.9	457.9	457.9	459.9
147.5°	471.9	472.1	472.3	472.4	472.7	472.7	472.6	472.5	472.4	472.3	472.7
150°	482.0	482.0	482.0	482.1	482.1	482.1	482.0	481.9	481.8	481.7	481.7
152.5°	489.2	489.5	489.6	489.9	490.1	490.1	490.0	489.8	489.6	489.5	489.6
155°	500.7	500.8	500.9	501.0	501.1	501.0	500.7	500.4	500.2	499.9	500.2
157.5°	510.7	510.6	510.5	510.5	510.4	510.2	510.0	509.6	509.3	509.1	509.5
160°	516.5	516.2	515.9	515.7	515.4	515.2	515.1	515.1	515.0	514.9	515.4
162.5°	521.7	521.3	520.9	520.6	520.3	520.0	520.0	519.9	519.8	519.7	520.2
165°	528.2	527.7	527.3	526.8	526.4	526.2	526.2	526.2	526.2	526.2	526.9
167.5°	533.3	532.9	532.4	532.0	531.5	531.2	531.2	531.1	531.1	531.0	531.8
170°	536.3	535.7	535.2	534.7	534.1	533.9	534.0	534.0	534.1	534.2	534.9
172.5°	538.2	537.7	537.2	536.6	536.1	535.8	535.9	536.0	536.1	536.2	536.9
175°	540.3	539.8	539.2	538.7	538.1	538.0	538.1	538.1	538.2	538.3	539.1
177.5°	541.3	540.8	540.3	539.8	539.3	539.1	539.2	539.4	539.5	539.7	540.2
180°	540.3	540.3	540.3	540.3	540.3	540.3	540.3	540.3	540.3	540.3	540.3



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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°	161.6	171.1	180.6	186.5	189.1	191.7	194.3	196.8
95°	151.0	160.0	169.1	175.1	178.1	181.0	184.0	186.9
97.5°	142.4	150.8	159.1	164.7	167.5	170.3	173.1	175.9
100°	140.0	147.0	154.1	158.7	161.0	163.4	165.7	167.9
102.5°	171.8	163.6	155.5	152.7	155.2	157.6	160.1	162.6
105°	237.5	246.2	254.9	259.0	258.2	257.5	256.8	256.1
107.5°	259.3	267.4	275.6	281.1	283.7	286.2	288.9	291.5
110°	274.3	281.8	289.2	294.4	297.1	300.0	302.7	305.5



TEST NUMBER: P332837-940

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

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	288.0	295.0	302.0	306.9	309.8	312.7	315.6	318.4
115°	309.2	316.3	323.4	328.1	330.3	332.5	334.7	337.0
117.5°	329.8	336.4	342.9	347.4	349.9	352.4	354.9	357.4
120°	342.1	348.7	355.2	359.5	361.9	364.3	366.6	369.0
122.5°	354.7	361.1	367.6	371.8	374.0	376.0	378.2	380.2
125°	372.5	378.8	385.0	389.2	391.2	393.2	395.1	397.2
127.5°	388.7	394.3	400.0	403.9	405.9	408.0	410.1	412.1
130°	398.5	404.3	410.1	413.9	415.8	417.7	419.6	421.5
132.5°	408.6	414.1	419.7	423.4	425.2	427.0	428.8	430.7
135°	420.5	425.8	431.1	434.7	436.8	438.8	441.0	443.0
137.5°	433.2	438.0	442.8	446.0	447.5	449.1	450.6	452.1
140°	441.2	445.6	450.0	453.0	454.7	456.4	458.0	459.7
142.5°	449.4	453.2	457.0	459.6	460.9	462.3	463.6	464.9
145°	461.8	463.9	465.8	467.5	469.0	470.5	471.9	473.3
147.5°	473.0	473.3	473.7	474.4	475.5	476.5	477.7	478.8
150°	481.7	481.7	481.7	481.8	481.9	482.0	482.1	482.1
152.5°	489.7	489.9	490.1	490.1	490.1	490.0	489.9	489.9
155°	500.6	501.0	501.3	501.4	501.1	500.9	500.6	500.3
157.5°	510.0	510.4	510.9	510.9	510.4	510.0	509.5	509.1
160°	515.9	516.5	517.0	517.0	516.5	515.9	515.4	514.9
162.5°	520.8	521.3	521.8	521.8	521.2	520.6	520.0	519.4
165°	527.6	528.3	529.1	529.0	528.2	527.4	526.6	525.8
167.5°	532.6	533.4	534.2	534.1	533.2	532.4	531.5	530.6
170°	535.7	536.4	537.2	537.1	536.1	535.2	534.3	533.4
172.5°	537.6	538.3	539.0	539.0	538.0	537.0	536.0	535.0
175°	539.9	540.7	541.5	541.4	540.3	539.2	538.1	537.1
177.5°	540.8	541.4	542.0	541.8	541.0	540.1	539.2	538.4
180°	540.3	540.3	540.3	540.3	540.3	540.3	540.3	540.3

(END OF REPORT)