

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: P332838-830

Luminaire Tested: **S124DIW-S1195D470U830-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332838-830
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-S1195D470U830-4F0-1E-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: 6115.4 lumens
Efficiency: N/A
Efficacy: 116.7 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

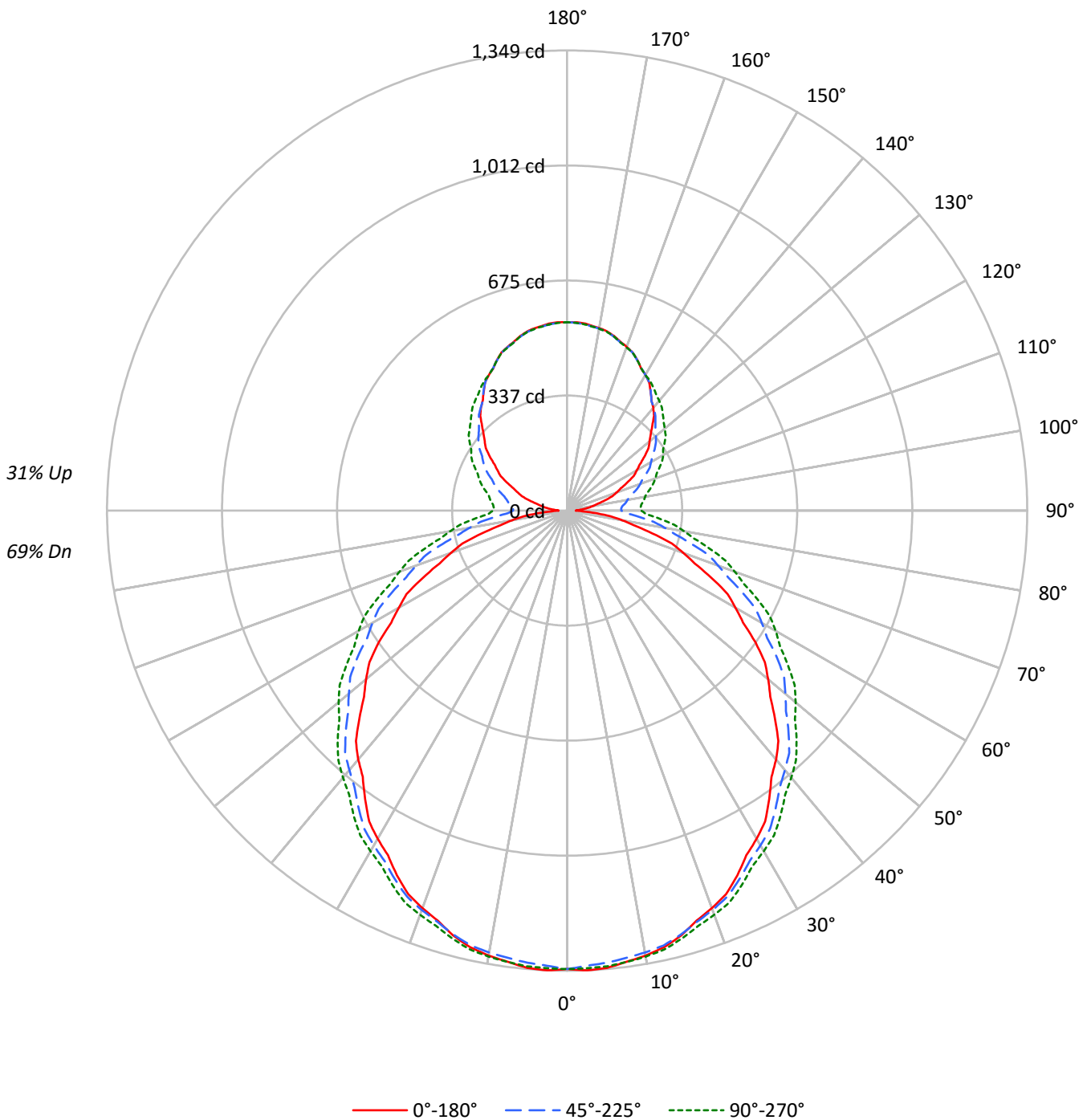
Input Watts (W): 52.4
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°	10851	10851	10851
5°	10884	10604	10635
10°	10818	10431	10423
15°	10721	10231	10174
20°	10574	10009	9931
25°	10410	9760	9665
30°	10231	9513	9392
35°	10029	9259	9152
40°	9868	9019	8902
45°	9628	8797	8688
50°	9425	8541	8461
55°	9216	8300	8195
60°	8889	7992	7953
65°	8532	7663	7655
70°	8098	7286	7308
75°	7493	6872	6995
80°	6823	6474	6686
85°	5963	6123	6505



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	127.3	2.1
10°-20°	364.7	6.0
20°-30°	551.4	9.0
30°-40°	667.1	10.9
40°-50°	705.3	11.5
50°-60°	663.8	10.9
60°-70°	550.7	9.0
70°-80°	386.8	6.3
80°-90°	220.3	3.6
90°-100°	166.3	2.7
100°-110°	204.0	3.3
110°-120°	247.7	4.0
120°-130°	277.9	4.5
130°-140°	286.9	4.7
140°-150°	269.7	4.4
150°-160°	224.2	3.7
160°-170°	149.1	2.4
170°-180°	52.2	0.9
0°-30°	1043.3	17.1
0°-40°	1710.5	28.0
0°-60°	3079.5	50.4
0°-90°	4237.4	69.3
90°-120°	617.9	10.1
90°-150°	1452.4	23.8
90°-180°	1878.0	30.7
0°-180°	6115.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1344	1344	1344	1344	1344	
5°	1346	1341	1330	1342	1341	128
15°	1290	1291	1287	1300	1299	363
25°	1180	1189	1194	1209	1212	543
35°	1032	1050	1066	1086	1091	646
45°	861	890	918	943	951	665
55°	674	707	751	780	790	601
65°	467	515	566	602	616	462
75°	259	315	378	418	434	275
85°	80	143	211	254	271	85
90°	25	90	158	203	218	17
95°	45	99	163	204	219	44
105°	113	145	201	238	253	121
115°	195	211	256	288	299	193
125°	277	278	313	340	349	247
135°	353	356	366	388	397	273
145°	426	427	427	436	440	267
155°	487	487	486	488	486	224
165°	530	529	528	530	529	149
175°	551	549	549	552	549	52
180°	552	552	552	552	552	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1344.1	1344.1	1344.1	1344.1	1344.1	1344.1	1344.1	1344.1	1344.1	1344.1	1344.1
2.5°	1348.9	1348.0	1347.3	1346.4	1345.7	1344.2	1342.0	1339.9	1337.8	1335.6	1337.5
5°	1345.5	1344.5	1343.5	1342.6	1341.5	1339.8	1337.5	1335.1	1332.8	1330.5	1333.1
7.5°	1334.1	1333.5	1332.8	1332.3	1331.7	1330.4	1328.5	1326.5	1324.6	1322.7	1325.7
10°	1324.5	1324.1	1323.8	1323.4	1323.1	1322.1	1320.4	1318.8	1317.1	1315.4	1318.4
12.5°	1311.2	1311.2	1311.1	1311.0	1311.0	1310.3	1309.2	1308.1	1306.9	1305.8	1308.5
15°	1289.9	1290.2	1290.5	1290.8	1291.2	1290.8	1289.9	1288.8	1287.8	1286.9	1289.9
17.5°	1260.7	1261.7	1262.6	1263.7	1264.6	1265.1	1264.9	1264.6	1264.4	1264.2	1267.3
20°	1240.2	1241.1	1242.2	1243.2	1244.2	1244.8	1245.2	1245.6	1245.9	1246.2	1249.5
22.5°	1217.3	1218.5	1219.8	1221.1	1222.4	1223.3	1223.9	1224.6	1225.1	1225.7	1229.1
25°	1180.0	1181.9	1184.0	1186.0	1188.0	1189.5	1190.5	1191.5	1192.5	1193.5	1197.2
27.5°	1138.4	1141.4	1144.3	1147.3	1150.2	1152.4	1154.0	1155.6	1157.1	1158.6	1162.0
30°	1110.7	1113.4	1116.1	1118.8	1121.4	1124.0	1126.2	1128.6	1131.0	1133.3	1137.0
32.5°	1080.6	1083.8	1087.0	1090.2	1093.4	1096.4	1099.0	1101.6	1104.2	1106.8	1111.1
35°	1032.5	1036.5	1040.5	1044.5	1048.5	1052.2	1055.6	1058.9	1062.2	1065.5	1070.3
37.5°	984.0	988.6	993.3	997.9	1002.5	1006.8	1011.0	1015.1	1019.3	1023.4	1028.2
40°	952.7	957.1	961.4	965.7	970.1	974.6	979.3	984.0	988.6	993.3	998.3
42.5°	916.6	921.4	926.3	931.2	936.1	941.3	946.8	952.3	957.7	963.3	968.8
45°	860.9	867.2	873.6	880.0	886.3	892.7	899.0	905.4	911.7	918.1	923.8
47.5°	807.6	814.2	820.8	827.3	833.9	840.8	848.2	855.5	862.9	870.2	876.1
50°	769.1	776.5	783.8	791.2	798.5	805.9	813.2	820.6	827.9	835.3	842.0
52.5°	730.6	737.9	745.3	752.6	760.0	767.9	776.3	784.8	793.1	801.6	808.3
55°	674.3	681.3	688.3	695.3	702.4	710.9	721.0	730.9	741.0	751.0	757.7
57.5°	611.3	620.1	628.8	637.4	646.1	655.4	665.4	675.4	685.4	695.3	703.3
60°	570.4	579.1	587.8	596.5	605.2	615.1	626.1	637.2	648.2	659.2	666.9
62.5°	530.7	540.2	549.7	559.2	568.6	578.9	590.0	601.1	612.1	623.1	630.7
65°	466.6	477.3	488.0	498.7	509.3	520.4	531.8	543.2	554.5	565.9	574.3
67.5°	404.8	416.2	427.6	438.9	450.3	462.1	474.3	486.4	498.6	510.9	519.3
70°	362.7	374.1	385.5	396.8	408.2	420.3	432.9	445.6	458.4	471.1	480.1
72.5°	321.8	333.4	345.1	356.7	368.3	380.9	394.5	407.9	421.4	435.0	443.7
75°	258.9	271.3	283.6	296.0	308.4	321.6	335.6	349.7	363.7	377.8	387.1
77.5°	200.2	213.3	226.4	239.5	252.6	266.6	281.3	296.0	310.7	325.4	334.9
80°	164.1	177.4	190.8	204.2	217.5	231.6	246.3	261.1	275.8	290.5	300.5
82.5°	127.9	141.9	155.8	169.7	183.6	197.9	212.6	227.3	242.0	256.7	267.0
85°	79.7	93.8	107.8	121.9	135.9	150.5	165.5	180.6	195.7	210.8	220.7
87.5°	44.8	58.6	72.5	86.3	100.2	114.5	129.3	144.1	158.9	173.7	183.6
90°	25.4	39.8	54.2	68.6	83.0	97.8	113.0	128.1	143.3	158.4	168.6
92.5°	32.0	45.2	58.5	71.7	84.9	99.1	114.0	128.8	143.7	158.7	168.4
95°	45.1	57.1	69.0	80.9	92.7	105.8	120.3	134.7	149.0	163.4	172.7
97.5°	62.5	72.7	82.8	93.0	103.2	115.6	129.9	144.2	158.6	173.0	182.0
100°	76.3	85.4	94.5	103.6	112.6	124.1	138.1	151.9	165.8	179.7	189.0
102.5°	92.1	99.8	107.6	115.4	123.2	133.8	147.4	161.0	174.5	188.0	197.1
105°	113.1	119.9	126.6	133.4	140.2	150.0	162.7	175.5	188.2	201.0	209.6
107.5°	138.0	143.5	149.1	154.8	160.3	169.0	180.8	192.6	204.3	216.1	224.6
110°	153.8	158.7	163.6	168.4	173.3	181.5	193.2	204.8	216.4	228.0	235.5



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	170.4	174.6	178.8	182.9	187.2	194.7	205.8	216.7	227.7	238.7	246.1
115°	195.3	198.2	201.2	204.2	207.3	214.1	224.6	235.1	245.6	256.1	263.3
117.5°	220.1	222.0	223.9	225.7	227.6	233.5	243.3	253.1	263.0	272.8	279.4
120°	235.6	237.0	238.4	239.8	241.1	246.6	255.9	265.3	274.8	284.2	290.4
122.5°	253.0	253.4	253.7	254.1	254.4	259.1	268.2	277.2	286.3	295.3	301.6
125°	277.2	276.9	276.5	276.3	275.9	279.8	288.1	296.4	304.6	312.9	319.1
127.5°	300.3	300.2	300.1	300.1	300.0	303.1	309.4	315.7	322.0	328.3	334.0
130°	315.5	315.4	315.4	315.3	315.3	317.9	323.3	328.6	333.9	339.3	345.2
132.5°	332.2	332.1	332.0	331.8	331.7	333.8	337.9	342.1	346.4	350.5	356.1
135°	352.8	353.4	353.9	354.5	355.1	356.6	358.9	361.2	363.5	365.9	371.1
137.5°	376.9	376.8	376.7	376.7	376.6	377.2	378.5	379.8	381.1	382.4	387.0
140°	392.9	392.9	392.7	392.6	392.4	392.5	392.9	393.1	393.5	393.8	398.0
142.5°	406.4	406.6	406.7	406.8	406.9	406.9	406.6	406.3	406.0	405.8	409.5
145°	426.5	426.5	426.6	426.6	426.7	426.7	426.8	426.9	427.0	427.1	429.0
147.5°	446.7	446.8	446.9	447.0	447.1	447.1	447.0	447.0	447.0	446.9	447.0
150°	458.9	459.0	459.0	459.1	459.1	459.1	459.1	459.1	459.1	459.1	459.1
152.5°	469.4	469.5	469.7	469.9	470.0	470.1	470.1	470.2	470.3	470.4	470.6
155°	486.9	486.9	486.9	486.9	486.9	486.8	486.7	486.6	486.5	486.4	486.8
157.5°	501.9	501.7	501.6	501.4	501.2	501.1	501.1	501.1	501.1	501.1	501.3
160°	510.9	510.8	510.7	510.6	510.5	510.4	510.3	510.2	510.1	510.0	510.3
162.5°	519.1	518.8	518.5	518.3	518.0	517.8	517.7	517.6	517.6	517.5	518.0
165°	530.0	529.7	529.4	529.1	528.9	528.7	528.5	528.3	528.1	527.9	528.5
167.5°	538.5	538.1	537.7	537.3	536.9	536.7	536.7	536.8	536.8	536.8	537.3
170°	543.3	542.8	542.3	541.9	541.4	541.2	541.3	541.4	541.5	541.6	542.2
172.5°	546.7	546.3	545.9	545.5	545.1	544.9	544.9	545.0	545.0	545.0	545.6
175°	551.4	550.9	550.4	550.0	549.5	549.2	549.1	549.0	548.9	548.8	549.5
177.5°	552.9	552.5	552.1	551.8	551.4	551.2	551.2	551.2	551.2	551.2	551.8
180°	552.2	552.2	552.2	552.2	552.2	552.2	552.2	552.2	552.2	552.2	552.2



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1344.1	1344.1	1344.1	1344.1	1344.1	1344.1	1344.1	1344.1
2.5°	1339.4	1341.2	1343.1	1343.9	1343.6	1343.3	1343.1	1342.8
5°	1335.9	1338.5	1341.1	1342.4	1342.0	1341.7	1341.3	1341.0
7.5°	1328.7	1331.7	1334.7	1336.1	1335.7	1335.4	1335.0	1334.7
10°	1321.4	1324.5	1327.5	1328.8	1328.5	1328.1	1327.8	1327.5
12.5°	1311.3	1314.0	1316.7	1318.1	1318.1	1318.0	1317.9	1317.9
15°	1292.9	1295.9	1298.8	1300.2	1299.9	1299.6	1299.2	1298.8
17.5°	1270.5	1273.5	1276.6	1278.0	1277.7	1277.4	1277.1	1276.9
20°	1252.9	1256.2	1259.6	1261.2	1261.2	1261.2	1261.2	1261.2
22.5°	1232.4	1235.8	1239.1	1241.0	1241.6	1242.1	1242.6	1243.2
25°	1200.9	1204.6	1208.2	1210.2	1210.6	1210.9	1211.3	1211.5
27.5°	1165.5	1168.8	1172.2	1174.1	1174.6	1175.0	1175.4	1175.7
30°	1140.7	1144.3	1148.0	1150.2	1150.8	1151.5	1152.2	1152.9
32.5°	1115.2	1119.5	1123.7	1126.1	1126.8	1127.5	1128.1	1128.8
35°	1075.0	1079.6	1084.3	1087.1	1088.2	1089.2	1090.1	1091.2
37.5°	1032.9	1037.6	1042.5	1045.4	1046.4	1047.4	1048.6	1049.6
40°	1003.3	1008.4	1013.4	1016.6	1017.9	1019.3	1020.6	1021.9
42.5°	974.3	979.9	985.4	988.7	989.9	990.9	991.9	993.1
45°	929.4	935.2	940.8	944.5	946.2	947.8	949.5	951.2
47.5°	882.0	887.9	893.8	897.7	899.8	901.7	903.7	905.8
50°	848.7	855.4	862.0	866.4	868.5	870.4	872.4	874.4
52.5°	815.0	821.7	828.3	832.7	834.7	836.7	838.7	840.7
55°	764.4	771.1	777.8	782.1	784.1	786.2	788.2	790.1
57.5°	711.2	719.3	727.2	732.1	734.0	735.8	737.7	739.6
60°	674.6	682.3	689.9	695.1	697.9	700.5	703.2	705.9
62.5°	638.5	646.2	653.8	659.0	661.8	664.4	667.0	669.8
65°	582.6	591.0	599.4	604.8	607.6	610.2	612.9	615.6
67.5°	527.8	536.3	544.8	550.4	553.0	555.5	558.2	560.8
70°	489.2	498.1	507.2	512.9	515.2	517.6	519.9	522.3
72.5°	452.5	461.3	470.0	475.7	478.3	480.9	483.5	486.2
75°	396.5	405.9	415.2	421.4	424.4	427.4	430.5	433.5
77.5°	344.4	353.9	363.4	369.8	373.0	376.2	379.4	382.6
80°	310.6	320.6	330.6	337.0	339.6	342.3	345.0	347.7
82.5°	277.4	287.7	297.9	304.6	307.6	310.5	313.4	316.3
85°	230.7	240.8	250.8	257.5	260.9	264.2	267.6	270.9
87.5°	193.4	203.2	213.0	219.4	222.3	225.4	228.4	231.3
90°	178.9	189.2	199.4	206.0	208.9	211.8	214.6	217.5
92.5°	178.2	188.0	197.7	204.1	206.9	209.6	212.4	215.2
95°	182.0	191.3	200.7	206.8	209.8	212.8	215.8	218.9
97.5°	191.1	200.3	209.3	215.4	218.2	221.1	223.9	226.9
100°	198.2	207.4	216.6	222.4	224.7	227.1	229.4	231.8
102.5°	206.1	215.2	224.1	230.1	232.7	235.4	238.1	240.7
105°	218.3	227.0	235.5	241.4	244.3	247.3	250.2	253.3
107.5°	233.1	241.6	250.1	255.5	257.9	260.2	262.7	265.0
110°	243.0	250.5	258.1	263.3	266.2	269.2	272.1	275.1



TEST NUMBER: P332838-830

CATALOG NUMBER: S124DIW-S1195D470U830-4F0-1E-UDD-D1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	253.5	260.9	268.2	273.3	276.1	278.8	281.5	284.3
115°	270.6	277.9	285.1	289.9	292.2	294.4	296.6	298.9
117.5°	286.1	292.7	299.4	303.9	306.3	308.9	311.3	313.9
120°	296.6	302.8	309.1	313.6	316.4	319.3	322.2	325.1
122.5°	308.0	314.3	320.7	324.9	327.0	329.0	331.1	333.2
125°	325.3	331.4	337.6	341.6	343.4	345.3	347.0	348.8
127.5°	339.9	345.7	351.6	355.5	357.7	359.8	361.9	364.0
130°	351.0	356.8	362.6	366.4	368.0	369.6	371.3	372.9
132.5°	361.7	367.2	372.8	376.5	378.3	380.2	382.1	383.9
135°	376.3	381.4	386.5	390.0	391.7	393.4	395.1	396.9
137.5°	391.6	396.3	401.0	404.2	405.9	407.6	409.3	411.0
140°	402.3	406.6	410.9	413.8	415.3	416.9	418.5	420.1
142.5°	413.3	417.2	420.9	423.5	424.9	426.3	427.6	429.0
145°	430.9	432.8	434.8	436.2	437.2	438.4	439.4	440.5
147.5°	447.2	447.4	447.6	448.2	449.1	450.2	451.1	452.0
150°	459.1	459.1	459.1	459.1	459.0	458.9	458.8	458.7
152.5°	470.9	471.1	471.4	471.3	471.1	470.8	470.6	470.3
155°	487.2	487.6	488.0	488.0	487.6	487.2	486.8	486.4
157.5°	501.6	501.9	502.2	502.2	501.9	501.5	501.2	500.9
160°	510.6	510.9	511.1	511.0	510.6	510.1	509.5	509.1
162.5°	518.5	519.1	519.5	519.5	519.1	518.6	518.1	517.6
165°	529.0	529.6	530.2	530.3	529.9	529.5	529.1	528.8
167.5°	537.9	538.5	539.0	539.0	538.5	537.9	537.2	536.7
170°	542.7	543.3	543.8	543.8	543.1	542.4	541.8	541.1
172.5°	546.3	547.0	547.5	547.5	546.9	546.2	545.5	544.9
175°	550.2	550.8	551.5	551.5	550.8	550.2	549.5	548.8
177.5°	552.3	552.8	553.4	553.3	552.7	552.1	551.5	550.9
180°	552.2	552.2	552.2	552.2	552.2	552.2	552.2	552.2

(END OF REPORT)