

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: P332838-840

Luminaire Tested: **S124DIW-S1195D470U840-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332838-840
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-S1195D470U840-4F0-1E-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: 6552.2 lumens
Efficiency: N/A
Efficacy: 125.0 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

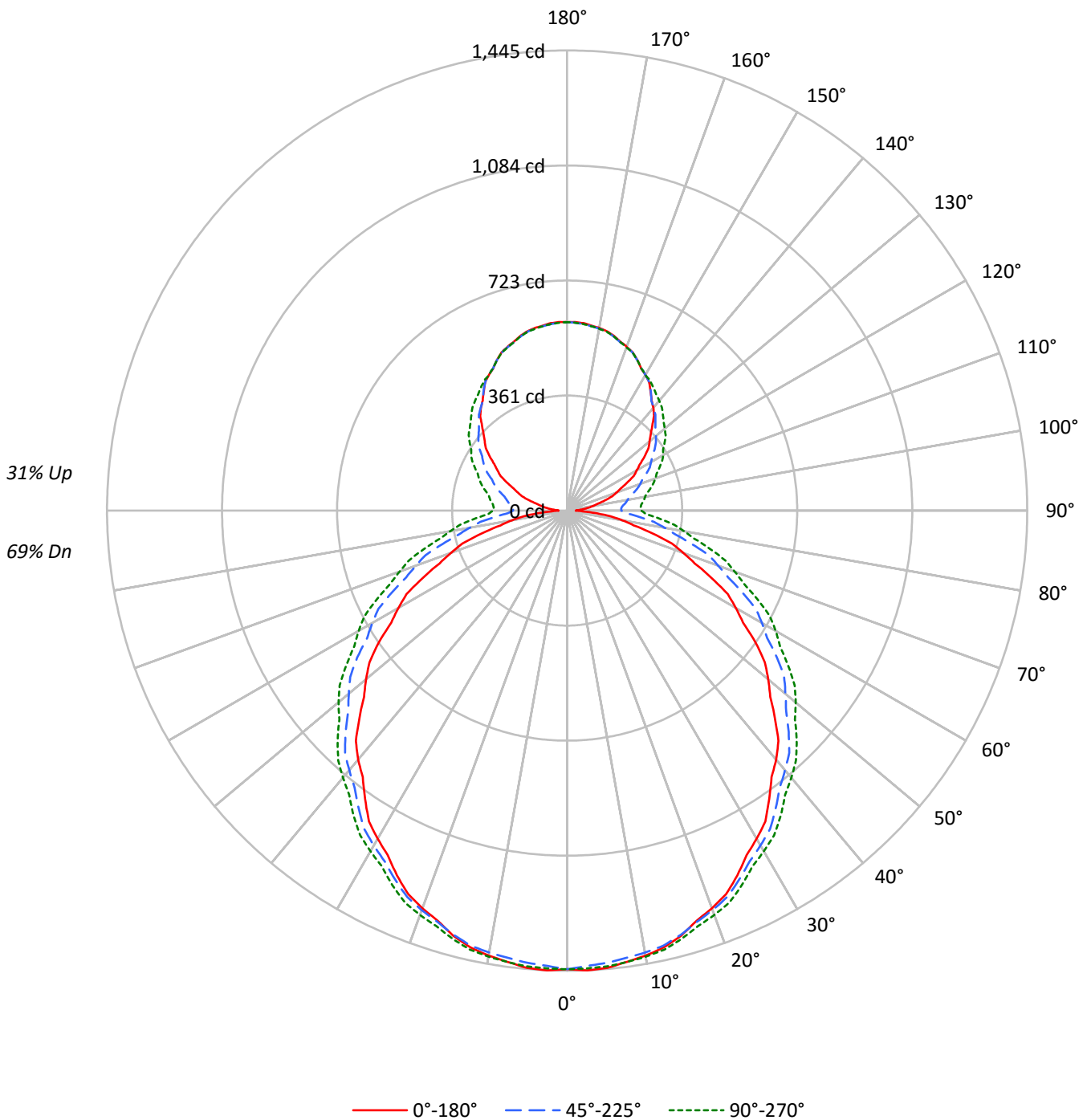
Input Watts (W): 52.4
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	11626	11626	11626
5°	11661	11362	11394
10°	11590	11176	11167
15°	11486	10961	10900
20°	11330	10723	10641
25°	11153	10457	10356
30°	10961	10193	10063
35°	10745	9921	9805
40°	10573	9663	9538
45°	10316	9426	9309
50°	10098	9151	9066
55°	9875	8894	8781
60°	9525	8563	8521
65°	9141	8210	8201
70°	8676	7806	7830
75°	8028	7363	7494
80°	7309	6935	7163
85°	6389	6559	6968



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	136.4	2.1
10°-20°	390.7	6.0
20°-30°	590.8	9.0
30°-40°	714.8	10.9
40°-50°	755.7	11.5
50°-60°	711.2	10.9
60°-70°	590.1	9.0
70°-80°	414.5	6.3
80°-90°	236.1	3.6
90°-100°	178.2	2.7
100°-110°	218.6	3.3
110°-120°	265.3	4.0
120°-130°	297.7	4.5
130°-140°	307.4	4.7
140°-150°	289.0	4.4
150°-160°	240.2	3.7
160°-170°	159.8	2.4
170°-180°	56.0	0.9
0°-30°	1117.8	17.1
0°-40°	1832.6	28.0
0°-60°	3299.5	50.4
0°-90°	4540.1	69.3
90°-120°	662.1	10.1
90°-150°	1556.2	23.8
90°-180°	2012.0	30.7
0°-180°	6552.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1440	1440	1440	1440	1440	
5°	1442	1436	1426	1438	1437	137
15°	1382	1383	1379	1392	1392	389
25°	1264	1274	1279	1296	1298	582
35°	1106	1125	1142	1163	1169	692
45°	922	953	984	1010	1019	713
55°	722	757	805	836	847	643
65°	500	552	606	645	660	495
75°	277	338	405	448	464	295
85°	85	153	226	272	290	91
90°	27	97	170	217	233	19
95°	48	106	175	218	234	47
105°	121	155	215	256	271	130
115°	209	226	274	308	320	207
125°	297	298	335	364	374	265
135°	378	381	392	416	425	293
145°	457	457	458	467	472	286
155°	522	522	521	523	521	240
165°	568	566	566	568	566	160
175°	591	589	588	591	588	56
180°	592	592	592	592	592	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1440.1	1440.1	1440.1	1440.1	1440.1	1440.1	1440.1	1440.1	1440.1	1440.1	1440.1
2.5°	1445.2	1444.3	1443.5	1442.6	1441.8	1440.2	1437.8	1435.6	1433.3	1431.0	1433.0
5°	1441.6	1440.6	1439.5	1438.5	1437.3	1435.5	1433.0	1430.5	1428.1	1425.5	1428.4
7.5°	1429.4	1428.8	1428.1	1427.4	1426.8	1425.4	1423.4	1421.3	1419.2	1417.1	1420.4
10°	1419.1	1418.7	1418.4	1418.0	1417.6	1416.5	1414.7	1413.0	1411.2	1409.4	1412.6
12.5°	1404.8	1404.8	1404.7	1404.6	1404.6	1403.9	1402.7	1401.5	1400.3	1399.1	1402.0
15°	1382.0	1382.3	1382.7	1383.0	1383.4	1383.0	1382.0	1380.9	1379.8	1378.8	1382.0
17.5°	1350.7	1351.8	1352.8	1353.9	1354.9	1355.4	1355.2	1354.9	1354.7	1354.5	1357.9
20°	1328.8	1329.8	1330.9	1332.0	1333.0	1333.7	1334.1	1334.5	1334.8	1335.2	1338.8
22.5°	1304.2	1305.6	1307.0	1308.3	1309.7	1310.7	1311.3	1312.0	1312.6	1313.2	1316.9
25°	1264.3	1266.4	1268.6	1270.7	1272.8	1274.4	1275.6	1276.6	1277.7	1278.8	1282.7
27.5°	1219.7	1222.9	1226.1	1229.2	1232.3	1234.8	1236.4	1238.1	1239.7	1241.3	1245.0
30°	1190.0	1193.0	1195.8	1198.7	1201.5	1204.3	1206.7	1209.2	1211.7	1214.3	1218.2
32.5°	1157.8	1161.2	1164.7	1168.1	1171.5	1174.7	1177.5	1180.3	1183.1	1185.9	1190.4
35°	1106.2	1110.5	1114.8	1119.1	1123.4	1127.3	1130.9	1134.5	1138.1	1141.7	1146.7
37.5°	1054.3	1059.2	1064.2	1069.1	1074.1	1078.7	1083.2	1087.6	1092.1	1096.5	1101.7
40°	1020.8	1025.4	1030.1	1034.7	1039.4	1044.2	1049.2	1054.3	1059.2	1064.3	1069.6
42.5°	982.1	987.2	992.5	997.7	1003.0	1008.6	1014.4	1020.3	1026.1	1032.1	1038.0
45°	922.4	929.2	936.0	942.8	949.6	956.4	963.2	970.1	976.8	983.7	989.8
47.5°	865.3	872.3	879.4	886.4	893.4	900.9	908.8	916.7	924.5	932.4	938.7
50°	824.0	831.9	839.8	847.7	855.6	863.4	871.3	879.2	887.1	894.9	902.1
52.5°	782.7	790.6	798.5	806.4	814.3	822.7	831.7	840.8	849.8	858.9	866.1
55°	722.5	729.9	737.5	745.0	752.6	761.6	772.4	783.2	794.0	804.7	811.8
57.5°	655.0	664.4	673.7	683.0	692.3	702.3	713.0	723.7	734.4	745.0	753.6
60°	611.2	620.5	629.8	639.1	648.4	659.0	670.9	682.7	694.5	706.3	714.6
62.5°	568.6	578.8	589.0	599.2	609.3	620.3	632.2	644.0	655.8	667.6	675.8
65°	499.9	511.4	522.8	534.3	545.7	557.5	569.8	582.0	594.1	606.3	615.3
67.5°	433.7	446.0	458.2	470.3	482.5	495.1	508.2	521.2	534.2	547.3	556.4
70°	388.6	400.8	413.0	425.2	437.4	450.3	463.8	477.5	491.1	504.7	514.4
72.5°	344.8	357.2	369.7	382.1	394.7	408.1	422.6	437.1	451.5	466.1	475.4
75°	277.4	290.6	303.9	317.1	330.4	344.6	359.6	374.7	389.7	404.8	414.8
77.5°	214.5	228.5	242.6	256.6	270.6	285.6	301.3	317.1	332.9	348.6	358.8
80°	175.8	190.1	204.4	218.7	233.1	248.1	263.9	279.7	295.5	311.2	321.9
82.5°	137.0	152.0	166.9	181.8	196.7	212.1	227.8	243.6	259.3	275.1	286.1
85°	85.4	100.5	115.5	130.6	145.6	161.3	177.3	193.5	209.6	225.8	236.5
87.5°	48.0	62.8	77.7	92.5	107.3	122.7	138.6	154.4	170.3	186.1	196.7
90°	27.2	42.6	58.1	73.5	89.0	104.8	121.1	137.2	153.5	169.8	180.7
92.5°	34.3	48.5	62.7	76.9	91.0	106.1	122.1	138.0	154.0	170.1	180.5
95°	48.4	61.2	73.9	86.6	99.4	113.4	128.9	144.3	159.7	175.1	185.0
97.5°	67.0	77.9	88.8	99.7	110.6	123.8	139.2	154.5	170.0	185.3	195.0
100°	81.8	91.5	101.3	111.0	120.7	133.0	147.9	162.8	177.6	192.6	202.5
102.5°	98.7	106.9	115.3	123.6	132.0	143.4	157.9	172.5	186.9	201.5	211.2
105°	121.2	128.5	135.6	142.9	150.2	160.7	174.3	188.0	201.7	215.3	224.6
107.5°	147.8	153.8	159.8	165.8	171.8	181.1	193.7	206.3	218.9	231.6	240.7
110°	164.8	170.1	175.3	180.5	185.7	194.5	207.0	219.4	231.9	244.3	252.4



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	182.6	187.0	191.6	196.0	200.6	208.6	220.5	232.2	244.0	255.8	263.7
115°	209.2	212.4	215.6	218.8	222.1	229.3	240.7	251.9	263.2	274.4	282.2
117.5°	235.8	237.8	239.8	241.9	243.9	250.1	260.6	271.1	281.8	292.3	299.3
120°	252.5	253.9	255.4	256.9	258.3	264.2	274.2	284.3	294.4	304.5	311.1
122.5°	271.0	271.5	271.9	272.3	272.6	277.6	287.3	297.0	306.7	316.4	323.2
125°	297.0	296.7	296.3	296.0	295.6	299.8	308.7	317.6	326.4	335.3	341.8
127.5°	321.7	321.6	321.5	321.5	321.4	324.8	331.5	338.2	345.0	351.7	357.9
130°	338.0	337.9	337.9	337.8	337.8	340.6	346.4	352.0	357.8	363.6	369.8
132.5°	355.9	355.8	355.7	355.5	355.4	357.6	362.0	366.6	371.1	375.6	381.5
135°	378.0	378.6	379.2	379.8	380.4	382.0	384.6	387.0	389.5	392.0	397.6
137.5°	403.8	403.7	403.6	403.6	403.5	404.1	405.6	407.0	408.3	409.7	414.7
140°	421.0	420.9	420.7	420.6	420.4	420.5	420.9	421.2	421.6	421.9	426.5
142.5°	435.5	435.7	435.8	435.9	436.0	436.0	435.7	435.4	435.0	434.7	438.8
145°	457.0	457.0	457.1	457.1	457.2	457.2	457.3	457.4	457.5	457.6	459.7
147.5°	478.6	478.7	478.8	478.9	479.1	479.1	479.0	478.9	478.9	478.8	479.0
150°	491.7	491.8	491.8	491.9	491.9	491.9	491.9	491.9	491.9	491.9	491.9
152.5°	502.9	503.0	503.2	503.4	503.5	503.7	503.7	503.8	503.9	504.0	504.2
155°	521.7	521.7	521.7	521.7	521.7	521.6	521.5	521.4	521.3	521.2	521.6
157.5°	537.8	537.6	537.5	537.2	537.0	536.9	536.9	536.9	536.8	536.8	537.1
160°	547.3	547.2	547.1	547.0	546.9	546.8	546.7	546.6	546.5	546.4	546.7
162.5°	556.1	555.8	555.5	555.3	555.0	554.8	554.7	554.6	554.5	554.4	555.0
165°	567.8	567.5	567.2	566.9	566.6	566.4	566.2	566.0	565.8	565.6	566.2
167.5°	576.9	576.5	576.1	575.7	575.2	575.0	575.0	575.1	575.1	575.1	575.7
170°	582.1	581.6	581.1	580.6	580.1	579.9	580.0	580.1	580.2	580.3	580.9
172.5°	585.7	585.3	584.9	584.5	584.0	583.8	583.8	583.9	583.9	583.9	584.6
175°	590.8	590.3	589.8	589.3	588.8	588.4	588.3	588.2	588.1	588.0	588.8
177.5°	592.4	592.0	591.6	591.2	590.8	590.6	590.6	590.6	590.6	590.6	591.2
180°	591.7	591.7	591.7	591.7	591.7	591.7	591.7	591.7	591.7	591.7	591.7



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1440.1	1440.1	1440.1	1440.1	1440.1	1440.1	1440.1	1440.1
2.5°	1435.0	1437.0	1439.1	1439.9	1439.6	1439.3	1439.1	1438.8
5°	1431.3	1434.1	1436.9	1438.2	1437.8	1437.5	1437.1	1436.8
7.5°	1423.6	1426.8	1430.1	1431.5	1431.1	1430.8	1430.4	1430.1
10°	1415.8	1419.1	1422.3	1423.7	1423.4	1423.0	1422.6	1422.3
12.5°	1404.9	1407.9	1410.8	1412.3	1412.2	1412.1	1412.0	1412.0
15°	1385.2	1388.5	1391.6	1393.1	1392.7	1392.4	1392.0	1391.6
17.5°	1361.2	1364.4	1367.8	1369.3	1369.0	1368.7	1368.4	1368.1
20°	1342.4	1345.9	1349.6	1351.3	1351.3	1351.3	1351.3	1351.3
22.5°	1320.4	1324.0	1327.6	1329.7	1330.3	1330.8	1331.4	1332.0
25°	1286.7	1290.6	1294.5	1296.7	1297.1	1297.4	1297.8	1298.1
27.5°	1248.7	1252.3	1256.0	1258.0	1258.5	1258.9	1259.3	1259.7
30°	1222.1	1226.1	1230.0	1232.3	1233.0	1233.8	1234.5	1235.3
32.5°	1194.9	1199.4	1204.0	1206.6	1207.3	1208.0	1208.7	1209.4
35°	1151.8	1156.7	1161.7	1164.8	1165.9	1167.0	1168.0	1169.1
37.5°	1106.7	1111.8	1116.9	1120.0	1121.2	1122.3	1123.5	1124.6
40°	1075.0	1080.5	1085.8	1089.2	1090.7	1092.1	1093.5	1094.9
42.5°	1043.9	1049.9	1055.8	1059.3	1060.6	1061.7	1062.8	1064.0
45°	995.8	1002.0	1008.0	1012.0	1013.8	1015.5	1017.3	1019.2
47.5°	945.0	951.3	957.7	961.8	964.0	966.1	968.3	970.5
50°	909.3	916.5	923.6	928.3	930.5	932.6	934.7	936.9
52.5°	873.2	880.4	887.5	892.2	894.3	896.5	898.6	900.8
55°	819.0	826.2	833.3	838.0	840.1	842.3	844.4	846.6
57.5°	762.0	770.6	779.1	784.4	786.4	788.4	790.4	792.4
60°	722.8	731.0	739.2	744.8	747.7	750.5	753.5	756.3
62.5°	684.1	692.4	700.5	706.1	709.0	711.9	714.7	717.6
65°	624.2	633.2	642.2	648.0	651.0	653.8	656.7	659.5
67.5°	565.5	574.6	583.7	589.7	592.5	595.2	598.0	600.9
70°	524.1	533.7	543.4	549.6	552.0	554.5	557.0	559.6
72.5°	484.8	494.2	503.6	509.7	512.5	515.2	518.1	520.9
75°	424.9	434.8	444.8	451.5	454.7	458.0	461.2	464.4
77.5°	369.0	379.2	389.3	396.2	399.6	403.0	406.5	409.9
80°	332.8	343.5	354.3	361.0	363.9	366.8	369.6	372.5
82.5°	297.2	308.2	319.2	326.4	329.5	332.6	335.8	338.9
85°	247.2	258.0	268.7	275.9	279.5	283.1	286.7	290.2
87.5°	207.2	217.7	228.2	235.1	238.2	241.5	244.7	247.8
90°	191.7	202.7	213.7	220.8	223.8	226.9	229.9	233.1
92.5°	191.0	201.5	211.9	218.6	221.7	224.6	227.6	230.6
95°	195.0	205.0	215.0	221.6	224.8	228.0	231.3	234.5
97.5°	204.8	214.6	224.3	230.8	233.8	236.9	239.9	243.1
100°	212.4	222.2	232.1	238.3	240.8	243.3	245.8	248.3
102.5°	220.9	230.6	240.1	246.5	249.3	252.3	255.1	257.9
105°	233.9	243.2	252.4	258.6	261.8	265.0	268.1	271.4
107.5°	249.7	258.8	267.9	273.8	276.3	278.8	281.4	284.0
110°	260.3	268.4	276.5	282.1	285.2	288.4	291.5	294.8



TEST NUMBER: P332838-840

CATALOG NUMBER: S124DIW-S1195D470U840-4F0-1E-UDD-D1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	271.7	279.5	287.4	292.9	295.8	298.7	301.6	304.6
115°	289.9	297.7	305.5	310.6	313.1	315.4	317.8	320.2
117.5°	306.5	313.6	320.7	325.6	328.2	330.9	333.6	336.3
120°	317.8	324.5	331.1	336.0	339.0	342.1	345.2	348.3
122.5°	330.0	336.8	343.7	348.1	350.3	352.5	354.8	357.0
125°	348.5	355.1	361.7	366.0	367.9	369.9	371.8	373.8
127.5°	364.2	370.4	376.7	380.9	383.2	385.5	387.8	390.0
130°	376.1	382.2	388.5	392.5	394.3	396.0	397.8	399.5
132.5°	387.5	393.4	399.4	403.4	405.4	407.4	409.4	411.3
135°	403.1	408.6	414.1	417.9	419.7	421.5	423.3	425.3
137.5°	419.6	424.6	429.6	433.0	434.8	436.7	438.6	440.4
140°	431.0	435.7	440.2	443.3	444.9	446.7	448.4	450.1
142.5°	442.8	447.0	451.0	453.7	455.2	456.8	458.2	459.7
145°	461.7	463.7	465.9	467.4	468.5	469.7	470.8	471.9
147.5°	479.2	479.4	479.6	480.2	481.2	482.3	483.3	484.3
150°	491.9	491.9	491.9	491.9	491.8	491.7	491.6	491.5
152.5°	504.5	504.7	505.0	504.9	504.7	504.4	504.2	503.9
155°	522.0	522.4	522.8	522.8	522.4	522.0	521.6	521.2
157.5°	537.5	537.8	538.1	538.1	537.8	537.3	537.0	536.6
160°	547.0	547.3	547.6	547.5	547.0	546.5	545.9	545.4
162.5°	555.5	556.1	556.6	556.6	556.1	555.6	555.1	554.6
165°	566.8	567.4	568.0	568.2	567.7	567.3	566.9	566.5
167.5°	576.3	576.9	577.5	577.5	576.9	576.3	575.6	575.0
170°	581.5	582.1	582.7	582.6	581.9	581.2	580.5	579.8
172.5°	585.3	586.0	586.6	586.6	585.9	585.2	584.5	583.8
175°	589.5	590.2	590.9	590.9	590.2	589.5	588.8	588.0
177.5°	591.8	592.3	592.9	592.8	592.2	591.6	590.9	590.3
180°	591.7	591.7	591.7	591.7	591.7	591.7	591.7	591.7

(END OF REPORT)