

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: P332660-940

Luminaire Tested: **S124DIP-S1020D1035U940-4F0-1E-UDD-F4**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332660-940
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-18,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124DIP-S1020D1035U940-4F0-1E-UDD-F4
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 1035 LUMENS PER FOOT, BATWING OPTIC
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7246.3 lumens
Efficiency: N/A
Efficacy: 119.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.17 / 1.3
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')
CIE Type: General Diffuse

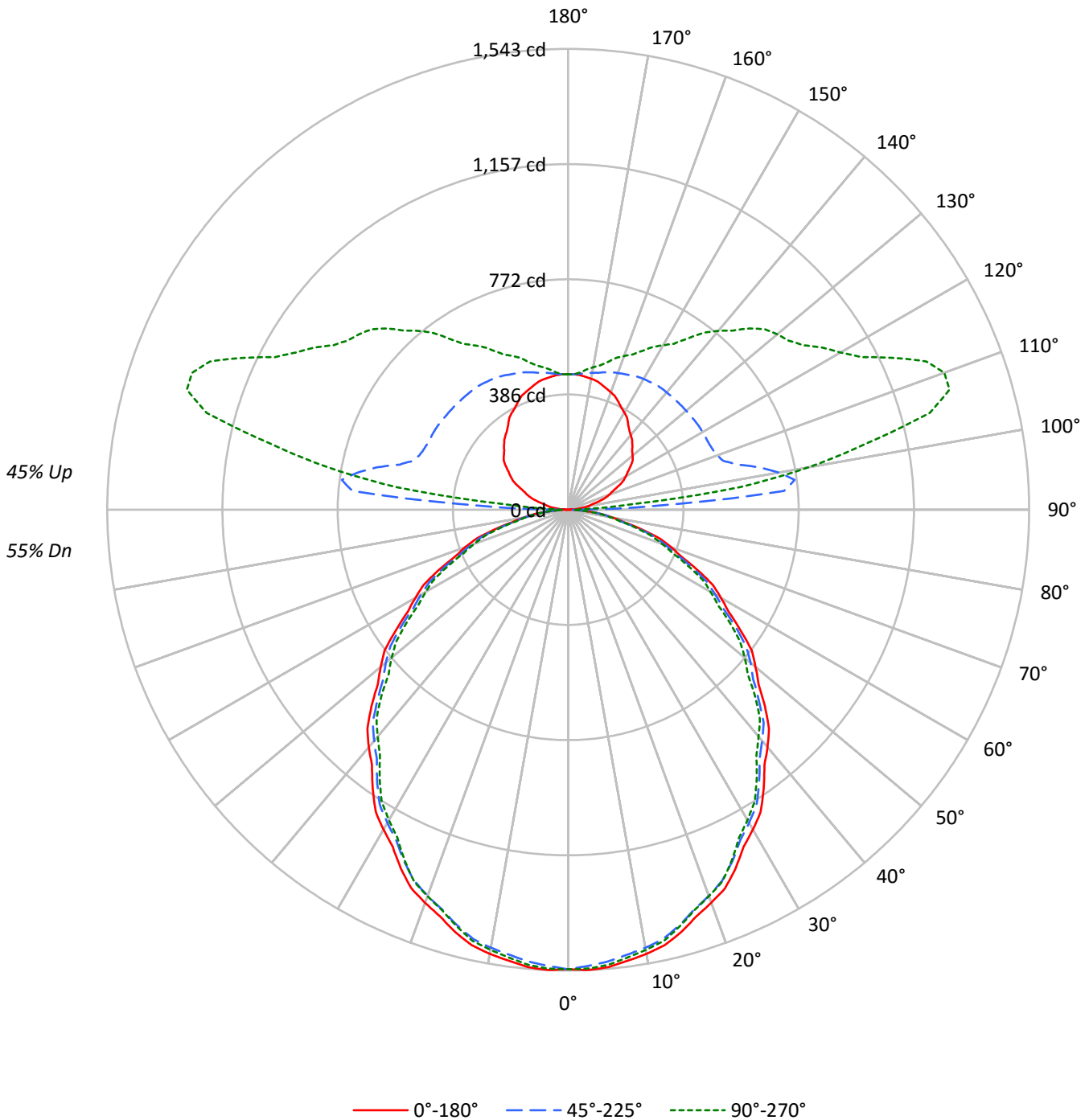
Input Watts (W): 60.5
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RCR																	
0	108	108	108	108	100	100	100	100	86	86	86	73	73	73	60	60	60
1	99	94	90	87	91	88	84	81	75	73	70	64	62	60	53	52	51
2	90	82	76	71	83	77	71	67	66	62	58	56	53	50	47	45	43
3	82	72	65	59	76	67	61	56	58	53	49	50	46	43	41	39	36
4	75	64	56	50	69	60	53	47	52	46	42	44	40	37	37	34	31
5	69	57	49	43	64	53	46	41	46	40	36	40	35	32	33	30	27
6	64	51	43	37	59	48	41	35	42	36	31	36	31	28	30	27	24
7	59	46	38	33	54	43	36	31	38	32	28	33	28	25	28	24	21
8	55	42	34	29	51	39	32	28	35	29	25	30	25	22	25	22	19
9	51	38	31	26	47	36	29	25	32	26	22	27	23	20	24	20	17
10	47	35	28	23	44	33	27	22	29	24	20	25	21	18	22	18	16

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	12421	12421	12421
5°	12459	12309	12399
10°	12381	12209	12269
15°	12232	12035	12066
20°	12032	11820	11832
25°	11805	11575	11541
30°	11527	11286	11182
35°	11239	10984	10838
40°	10940	10642	10446
45°	10628	10304	10106
50°	10282	10003	9693
55°	9909	9614	9301
60°	9536	9177	8898
65°	9116	8760	8407
70°	8641	8207	7886
75°	7923	7539	7346
80°	7053	6760	6592
85°	6169	5937	5826



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	144.9	2.0
10°-20°	408.3	5.6
20°-30°	600.9	8.3
30°-40°	698.6	9.6
40°-50°	698.6	9.6
50°-60°	611.1	8.4
60°-70°	453.8	6.3
70°-80°	257.8	3.6
80°-90°	76.9	1.1
90°-100°	327.3	4.5
100°-110°	681.1	9.4
110°-120°	610.1	8.4
120°-130°	513.2	7.1
130°-140°	427.9	5.9
140°-150°	326.9	4.5
150°-160°	229.8	3.2
160°-170°	135.2	1.9
170°-180°	44.0	0.6
0°-30°	1154.1	15.9
0°-40°	1852.6	25.6
0°-60°	3162.3	43.6
0°-90°	3950.9	54.5
90°-120°	1618.5	22.3
90°-150°	2886.5	39.8
90°-180°	3295.0	45.5
0°-180°	7246.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1539	1539	1539	1539	1539	
5°	1537	1532	1519	1532	1530	146
15°	1464	1458	1440	1447	1444	412
25°	1325	1316	1300	1300	1296	609
35°	1140	1131	1114	1106	1100	713
45°	931	922	902	889	885	717
55°	704	700	683	669	661	630
65°	477	471	459	447	440	472
75°	254	248	242	237	236	270
85°	67	66	64	64	63	73
90°	1	7	16	18	19	5
95°	29	93	726	359	217	33
105°	104	151	584	1257	1252	111
115°	183	230	521	1001	1203	182
125°	256	304	518	851	960	227
135°	304	361	514	756	858	235
145°	350	401	511	637	701	220
155°	398	430	497	563	587	183
165°	434	447	476	504	512	122
175°	452	453	457	463	461	43
180°	453	453	453	453	453	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1538.6	1538.6	1538.6	1538.6	1538.6	1538.6	1538.6	1538.6	1538.6	1538.6	1538.6
2.5°	1542.6	1541.9	1541.2	1540.6	1540.0	1538.4	1536.0	1533.6	1531.2	1528.7	1531.0
5°	1537.4	1536.3	1535.3	1534.1	1533.0	1531.0	1527.9	1524.9	1522.0	1518.9	1522.0
7.5°	1523.1	1522.0	1520.9	1519.8	1518.8	1516.5	1513.1	1509.8	1506.5	1503.2	1505.6
10°	1510.3	1509.2	1508.1	1507.0	1505.9	1503.6	1500.0	1496.5	1492.9	1489.3	1491.5
12.5°	1493.5	1492.5	1491.3	1490.2	1489.2	1486.7	1482.9	1479.2	1475.3	1471.6	1474.0
15°	1463.5	1462.3	1461.2	1460.2	1459.0	1456.4	1452.3	1448.2	1444.1	1440.0	1441.6
17.5°	1427.2	1425.8	1424.4	1423.1	1421.7	1419.1	1415.1	1411.3	1407.4	1403.6	1404.5
20°	1400.5	1399.2	1397.8	1396.4	1395.1	1392.3	1388.2	1384.1	1380.0	1375.9	1376.7
22.5°	1372.0	1370.1	1368.3	1366.5	1364.8	1361.7	1357.6	1353.5	1349.4	1345.3	1346.8
25°	1325.3	1323.5	1321.5	1319.6	1317.7	1314.8	1311.0	1307.2	1303.3	1299.5	1299.8
27.5°	1272.1	1270.2	1268.1	1266.1	1264.2	1261.4	1257.8	1254.3	1250.7	1247.1	1246.5
30°	1236.6	1234.4	1232.2	1230.0	1227.8	1224.9	1221.4	1217.8	1214.2	1210.7	1209.6
32.5°	1199.1	1197.1	1195.2	1193.2	1191.2	1188.3	1184.5	1180.8	1177.0	1173.2	1171.9
35°	1140.4	1138.5	1136.6	1134.7	1132.7	1129.9	1126.1	1122.2	1118.4	1114.5	1112.6
37.5°	1078.5	1076.7	1075.0	1073.3	1071.5	1068.6	1064.4	1060.3	1056.2	1052.1	1050.1
40°	1038.1	1035.9	1033.7	1031.5	1029.3	1026.2	1022.1	1018.0	1013.9	1009.8	1007.0
42.5°	994.7	993.4	992.0	990.8	989.4	986.5	982.0	977.4	972.9	968.3	965.1
45°	930.9	928.9	927.0	925.1	923.2	920.0	915.6	911.2	906.9	902.5	899.5
47.5°	864.0	862.7	861.4	860.1	858.7	856.0	852.0	847.9	843.9	839.8	836.4
50°	818.7	817.5	816.5	815.4	814.2	811.8	808.0	804.1	800.3	796.5	792.6
52.5°	774.3	772.9	771.6	770.3	769.0	766.3	762.2	758.2	754.1	750.1	746.7
55°	704.0	703.1	702.3	701.5	700.7	698.4	694.6	690.7	686.9	683.1	679.8
57.5°	636.9	636.0	635.1	634.1	633.2	630.8	627.1	623.3	619.5	615.7	612.6
60°	590.6	589.2	587.8	586.5	585.1	582.6	579.1	575.5	571.9	568.4	565.9
62.5°	545.2	544.0	542.9	541.7	540.6	538.1	534.3	530.6	526.7	523.0	520.8
65°	477.2	475.7	474.4	473.1	471.6	469.6	466.8	464.1	461.4	458.6	455.9
67.5°	408.6	407.3	406.1	404.8	403.5	401.6	399.0	396.4	393.7	391.1	388.4
70°	366.1	364.3	362.3	360.4	358.5	356.4	354.3	352.0	349.9	347.7	345.4
72.5°	320.8	318.9	317.0	315.0	313.2	311.3	309.5	307.8	306.0	304.3	302.6
75°	254.0	252.6	251.2	249.9	248.5	247.1	245.8	244.4	243.0	241.7	240.6
77.5°	190.1	189.5	188.9	188.3	187.7	186.8	185.6	184.4	183.2	182.0	181.6
80°	151.7	150.8	150.0	149.2	148.4	147.7	147.1	146.6	146.1	145.4	144.9
82.5°	114.1	113.8	113.4	113.0	112.6	112.4	112.3	112.2	112.1	111.9	111.6
85°	66.6	66.6	66.6	66.6	66.6	66.3	65.7	65.2	64.6	64.1	64.1
87.5°	25.9	25.9	26.3	26.2	26.2	25.9	26.8	26.6	26.8	26.8	26.7
90°	0.9	2.7	5.4	6.2	7.1	7.1	12.5	12.5	14.3	16.1	15.2
92.5°	10.2	14.8	23.2	34.0	47.0	65.5	110.8	179.9	247.1	282.4	235.2
95°	29.3	32.0	40.9	52.5	73.9	111.3	188.7	334.7	547.5	725.5	746.0
97.5°	52.7	52.7	60.4	71.1	89.3	120.7	180.4	300.9	512.4	764.1	937.2
100°	67.7	67.7	73.9	84.5	101.5	130.0	182.5	283.1	464.7	715.7	943.6
102.5°	81.9	83.3	88.8	98.8	115.0	142.0	189.6	278.1	432.7	655.2	890.2
105°	104.2	106.8	111.3	122.0	137.9	163.8	206.5	280.4	405.0	584.0	793.2
107.5°	128.8	130.5	134.9	146.3	161.7	187.1	226.3	293.6	400.0	544.1	714.8
110°	145.1	146.9	151.3	162.0	178.1	202.1	241.2	303.5	401.4	530.6	675.6



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	160.8	162.6	167.7	177.7	193.7	217.8	255.5	314.2	405.7	524.1	653.6
115°	183.4	186.0	192.3	201.2	218.1	242.1	277.8	331.2	413.9	520.8	632.9
117.5°	206.9	209.4	214.9	224.7	240.5	265.5	299.3	348.4	422.7	519.9	623.7
120°	222.6	224.4	230.6	240.3	255.5	280.4	314.2	360.5	429.1	519.9	618.7
122.5°	236.8	238.5	244.8	253.9	270.5	294.6	328.5	371.9	435.5	519.2	613.0
125°	255.5	259.0	264.4	274.2	291.1	316.0	348.0	389.1	445.1	518.1	603.6
127.5°	272.1	274.9	281.3	292.5	310.1	335.3	366.2	403.8	452.7	516.1	590.9
130°	281.3	284.9	291.9	305.3	322.3	348.0	378.4	413.0	458.4	515.4	583.1
132.5°	290.5	293.4	302.6	315.3	333.7	358.0	388.3	422.3	463.4	514.7	576.0
135°	303.5	307.1	316.0	331.2	349.8	373.0	402.3	434.4	470.9	513.6	565.3
137.5°	316.6	319.9	329.8	344.1	363.6	385.7	413.0	443.0	475.4	513.4	556.0
140°	325.8	328.5	338.3	353.4	372.1	393.5	420.2	448.6	478.9	512.7	551.1
142.5°	335.8	338.5	347.5	361.9	380.0	400.6	426.6	452.9	481.8	512.7	546.8
145°	349.8	352.5	361.4	373.9	390.8	410.4	433.5	457.5	483.4	511.0	539.5
147.5°	365.7	366.6	374.4	387.3	401.3	418.9	440.7	461.6	484.3	507.7	532.9
150°	375.7	376.6	383.7	394.4	407.7	424.6	444.3	463.8	484.3	505.6	527.9
152.5°	385.0	385.1	392.3	402.2	414.1	429.6	447.1	465.2	482.9	502.0	522.2
155°	397.9	398.8	404.1	413.0	422.8	436.2	451.3	466.5	480.7	496.8	513.6
157.5°	410.5	410.5	415.5	422.5	431.1	441.6	454.3	466.5	478.4	491.2	504.9
160°	418.4	418.4	422.0	428.2	435.3	445.1	455.8	466.5	476.3	487.0	498.6
162.5°	425.5	424.8	427.7	433.2	439.6	447.3	457.2	466.5	474.1	482.7	492.8
165°	433.5	433.5	435.3	439.8	444.3	449.5	457.5	464.7	470.0	476.3	483.4
167.5°	441.6	440.7	441.6	445.0	447.5	451.5	457.4	462.5	465.7	469.8	474.8
170°	445.1	444.3	445.1	447.8	449.5	452.2	456.6	461.1	462.9	465.6	469.1
172.5°	448.6	447.8	447.9	449.9	450.9	452.9	455.9	459.7	460.0	461.3	464.1
175°	452.2	451.3	451.3	452.2	453.1	453.1	454.9	457.5	456.6	456.6	458.4
177.5°	453.8	453.1	452.4	453.1	453.1	453.1	453.8	455.2	453.8	453.8	454.5
180°	453.1	453.1	453.1	453.1	453.1	453.1	453.1	453.1	453.1	453.1	453.1



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1538.6	1538.6	1538.6	1538.6	1538.6	1538.6	1538.6	1538.6
2.5°	1533.1	1535.3	1537.6	1538.6	1538.3	1538.1	1537.8	1537.7
5°	1524.9	1527.9	1531.0	1532.2	1531.7	1531.1	1530.5	1530.0
7.5°	1508.0	1510.4	1512.8	1513.9	1513.5	1513.1	1512.8	1512.5
10°	1493.7	1495.9	1498.1	1498.9	1498.3	1497.8	1497.3	1496.7
12.5°	1476.4	1478.8	1481.2	1482.0	1481.3	1480.5	1479.7	1479.0
15°	1443.3	1444.9	1446.6	1447.0	1446.2	1445.4	1444.6	1443.7
17.5°	1405.6	1406.7	1407.7	1407.9	1407.4	1406.9	1406.3	1405.7
20°	1377.5	1378.4	1379.2	1379.3	1378.8	1378.2	1377.7	1377.2
22.5°	1348.3	1349.8	1351.2	1351.5	1350.5	1349.5	1348.5	1347.6
25°	1300.0	1300.3	1300.6	1300.1	1299.0	1298.0	1296.8	1295.7
27.5°	1245.9	1245.2	1244.6	1243.6	1242.2	1240.8	1239.4	1238.1
30°	1208.5	1207.4	1206.3	1205.1	1203.7	1202.3	1201.0	1199.6
32.5°	1170.5	1169.3	1168.0	1166.6	1165.2	1163.9	1162.5	1161.1
35°	1110.7	1108.8	1106.9	1105.2	1103.8	1102.5	1101.1	1099.7
37.5°	1047.9	1045.9	1043.8	1041.9	1040.1	1038.2	1036.4	1034.7
40°	1004.2	1001.5	998.8	996.8	995.3	994.0	992.7	991.2
42.5°	962.0	958.8	955.6	953.5	952.6	951.6	950.7	949.9
45°	896.4	893.4	890.4	888.5	887.7	886.9	886.0	885.2
47.5°	833.0	829.6	826.3	823.5	821.4	819.3	817.3	815.2
50°	788.8	785.0	781.1	778.4	776.7	775.1	773.5	771.8
52.5°	743.3	739.9	736.5	733.8	731.6	729.6	727.5	725.4
55°	676.5	673.2	669.9	667.4	665.8	664.1	662.5	660.8
57.5°	609.5	606.4	603.2	600.8	599.2	597.7	596.1	594.5
60°	563.5	561.0	558.5	556.6	555.2	553.8	552.5	551.1
62.5°	518.5	516.2	514.0	512.2	510.9	509.4	508.1	506.8
65°	453.2	450.4	447.6	445.6	444.3	442.9	441.5	440.1
67.5°	385.8	383.2	380.6	379.1	378.6	378.3	377.9	377.6
70°	343.3	341.1	338.9	337.4	336.6	335.7	334.9	334.1
72.5°	300.8	299.0	297.3	296.0	295.2	294.4	293.6	292.7
75°	239.4	238.4	237.3	236.6	236.3	236.0	235.8	235.5
77.5°	181.3	181.0	180.7	180.1	179.4	178.7	178.0	177.3
80°	144.4	143.8	143.3	142.9	142.6	142.3	142.0	141.8
82.5°	111.3	110.9	110.7	110.3	110.0	109.8	109.5	109.2
85°	64.1	64.1	64.1	63.9	63.7	63.4	63.1	62.9
87.5°	26.8	27.0	27.2	27.2	27.4	27.6	27.4	27.4
90°	16.1	16.9	17.8	17.8	18.7	19.6	18.7	18.7
92.5°	174.9	131.6	104.7	86.9	76.4	71.6	68.6	68.6
95°	659.6	521.7	402.3	316.0	272.4	244.8	228.8	217.2
97.5°	974.6	923.3	836.2	743.3	679.4	625.8	599.1	580.6
100°	1073.6	1091.4	1047.8	981.9	904.5	850.2	823.4	816.4
102.5°	1068.6	1156.9	1169.6	1142.1	1094.6	1055.3	1027.2	1021.5
105°	997.0	1151.0	1239.1	1275.7	1277.5	1270.3	1257.8	1252.5
107.5°	895.4	1059.4	1183.5	1262.8	1306.8	1327.1	1336.1	1338.4
110°	834.1	988.1	1117.2	1215.1	1278.4	1315.7	1331.8	1339.8



TEST NUMBER: P332660-940

CATALOG NUMBER: S124DIP-S1020D1035U940-4F0-1E-UDD-F4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	789.3	925.4	1047.4	1145.3	1217.1	1262.3	1284.8	1297.7
115°	744.2	853.7	957.9	1043.3	1113.7	1167.1	1195.5	1202.7
117.5°	722.1	812.8	894.7	967.1	1027.2	1072.0	1100.8	1106.3
120°	712.1	795.0	866.2	929.3	980.1	1019.3	1042.4	1052.2
122.5°	703.6	783.5	848.4	903.7	946.6	980.1	999.7	1009.5
125°	689.0	765.5	827.0	875.9	911.6	937.4	954.3	959.7
127.5°	671.2	744.4	805.7	852.1	887.9	910.9	925.1	930.4
130°	657.0	727.3	787.8	835.0	871.5	893.8	908.0	913.4
132.5°	642.0	708.1	767.1	814.4	850.2	875.2	888.8	894.1
135°	621.3	679.2	733.5	778.0	813.7	838.6	852.8	858.2
137.5°	602.7	651.7	697.4	737.6	770.9	795.5	807.3	813.7
140°	592.0	633.8	673.9	711.2	742.4	762.1	774.5	781.6
142.5°	582.0	618.8	653.3	685.6	713.2	731.4	742.4	747.4
145°	567.9	598.2	624.9	649.9	672.1	687.2	696.2	700.6
147.5°	556.3	580.4	601.8	621.3	637.8	650.8	657.5	659.1
150°	549.3	569.7	587.5	603.6	617.8	629.4	634.7	635.6
152.5°	541.4	559.0	575.4	588.6	600.7	610.1	613.3	614.2
155°	529.7	543.9	557.2	567.9	576.8	584.0	586.7	586.7
157.5°	517.0	529.0	540.2	548.8	555.4	560.8	562.4	562.4
160°	509.2	519.0	528.8	535.9	541.3	546.6	547.5	547.5
162.5°	501.3	509.7	517.4	523.8	527.7	533.1	534.0	533.2
165°	490.5	495.9	502.0	506.5	510.1	513.6	512.7	511.8
167.5°	480.0	484.1	489.1	491.8	493.6	495.9	495.7	495.0
170°	473.6	476.3	479.8	482.5	484.3	485.2	484.3	484.3
172.5°	467.9	469.8	472.0	473.9	475.0	475.9	475.0	473.6
175°	460.2	461.1	462.9	462.9	462.9	464.7	462.9	461.1
177.5°	455.2	455.9	455.9	456.6	455.9	456.6	455.2	453.8
180°	453.1	453.1	453.1	453.1	453.1	453.1	453.1	453.1

(END OF REPORT)