

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: P332978-940

Luminaire Tested: **S124RDIP-S1020D1035U940-4F0-1E-UDD-F4**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332978-940
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: S124RDIP-S1020D1035U940-4F0-1E-UDD-F4
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 1035 LUMENS PER FOOT, BATWING OPTIC
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7018.1 lumens
Efficiency: N/A
Efficacy: 116.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.09 / 1.24
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')
CIE Type: General Diffuse

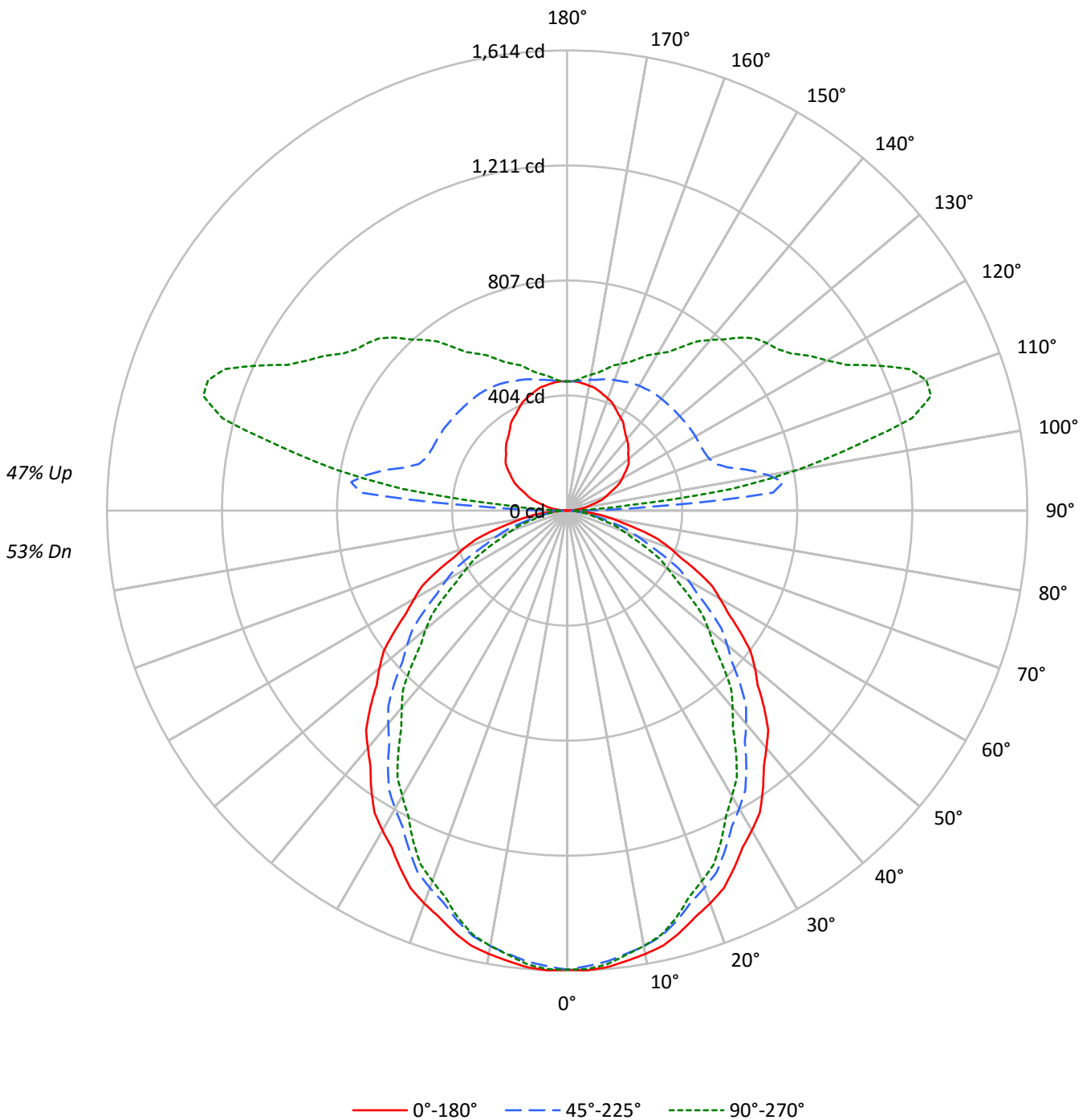
Input Watts (W): 60.5
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	108	108	108	108	100	100	100	100	85	85	85	71	71	71	59	59	59	53
1	99	95	91	87	91	88	84	82	75	73	70	63	62	60	53	51	50	45
2	90	83	77	72	83	77	72	67	66	62	59	56	53	51	47	45	43	38
3	82	73	66	60	76	68	62	57	58	54	50	50	46	43	41	39	37	33
4	76	65	57	51	70	60	54	48	52	47	43	44	40	37	37	34	32	28
5	69	58	50	44	64	54	47	42	47	41	37	40	36	32	34	30	28	25
6	64	52	44	38	59	49	41	36	42	37	32	36	32	28	31	27	25	22
7	59	47	39	34	55	44	37	32	38	33	29	33	29	25	28	25	22	19
8	55	43	35	30	51	40	33	28	35	29	25	30	26	23	26	22	20	18
9	51	39	32	27	48	37	30	25	32	27	23	28	24	20	24	20	18	16
10	48	36	29	24	45	34	27	23	30	24	21	26	22	19	22	19	16	14

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	12999	12999	12999
5°	13028	12869	12949
10°	12946	12714	12714
15°	12797	12447	12354
20°	12594	12095	11874
25°	12333	11685	11388
30°	12078	11251	10781
35°	11798	10801	10170
40°	11460	10290	9511
45°	11147	9782	8840
50°	10792	9198	8130
55°	10412	8590	7357
60°	9993	7923	6570
65°	9608	7089	5794
70°	9050	6170	4919
75°	8344	5115	3999
80°	7280	3896	3668
85°	6169	3548	3316



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	151.3	2.2
10°-20°	421.8	6.0
20°-30°	609.1	8.7
30°-40°	690.4	9.8
40°-50°	666.7	9.5
50°-60°	554.4	7.9
60°-70°	382.8	5.5
70°-80°	194.0	2.8
80°-90°	52.3	0.7
90°-100°	327.3	4.7
100°-110°	681.1	9.7
110°-120°	610.1	8.7
120°-130°	513.2	7.3
130°-140°	427.9	6.1
140°-150°	326.9	4.7
150°-160°	229.8	3.3
160°-170°	135.2	1.9
170°-180°	44.0	0.6
0°-30°	1182.1	16.8
0°-40°	1872.5	26.7
0°-60°	3093.5	44.1
0°-90°	3722.6	53.0
90°-120°	1618.5	23.1
90°-150°	2886.5	41.1
90°-180°	3295.0	47.0
0°-180°	7018.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1610	1610	1610	1610	1610	
5°	1608	1602	1588	1599	1598	152
15°	1531	1519	1489	1486	1478	431
25°	1385	1361	1312	1291	1278	638
35°	1197	1156	1096	1055	1032	748
45°	976	929	857	799	774	753
55°	740	689	610	548	523	661
65°	503	449	371	320	303	497
75°	268	221	164	137	128	282
85°	67	43	38	36	36	75
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°	1610.2	1610.2	1610.2	1610.2	1610.2	1610.2	1610.2	1610.2	1610.2	1610.2	1610.2
2.5°	1614.1	1613.2	1612.3	1611.5	1610.6	1608.9	1606.5	1604.1	1601.7	1599.3	1601.7
5°	1607.7	1606.6	1605.5	1604.4	1603.3	1601.1	1597.9	1594.6	1591.3	1588.0	1590.7
7.5°	1593.1	1592.0	1590.8	1589.7	1588.5	1585.8	1581.5	1577.3	1573.0	1568.7	1570.5
10°	1579.3	1578.0	1576.5	1575.2	1573.9	1570.7	1565.8	1560.9	1555.9	1551.0	1552.0
12.5°	1561.6	1560.0	1558.4	1556.8	1555.2	1551.5	1545.7	1539.9	1534.1	1528.3	1528.9
15°	1531.2	1528.7	1526.3	1523.8	1521.3	1516.7	1509.8	1503.0	1496.2	1489.3	1488.8
17.5°	1494.5	1490.9	1487.4	1483.8	1480.2	1474.4	1466.2	1457.9	1449.7	1441.5	1439.9
20°	1465.9	1462.3	1458.7	1455.2	1451.6	1445.2	1435.9	1426.6	1417.3	1407.9	1405.8
22.5°	1434.3	1430.3	1426.3	1422.4	1418.4	1411.3	1401.4	1391.4	1381.4	1371.5	1368.2
25°	1384.6	1379.6	1374.7	1369.8	1364.8	1356.7	1345.5	1334.3	1323.0	1311.8	1307.2
27.5°	1332.2	1326.1	1319.9	1313.7	1307.5	1298.4	1286.4	1274.4	1262.4	1250.4	1244.6
30°	1295.7	1288.9	1282.1	1275.2	1268.4	1258.5	1245.6	1232.7	1219.9	1207.0	1200.2
32.5°	1257.3	1249.6	1241.8	1234.1	1226.4	1215.8	1202.6	1189.3	1175.9	1162.6	1154.7
35°	1197.1	1188.4	1179.6	1170.8	1162.1	1150.8	1137.1	1123.5	1109.7	1096.0	1086.7
37.5°	1132.7	1123.7	1114.7	1105.6	1096.6	1084.5	1069.3	1054.2	1038.9	1023.8	1013.3
40°	1087.4	1078.3	1069.3	1060.2	1051.2	1038.9	1023.3	1007.6	992.0	976.4	964.9
42.5°	1044.0	1034.6	1025.0	1015.6	1006.1	993.2	977.0	960.6	944.4	928.1	916.4
45°	976.4	966.3	956.2	946.0	935.9	922.6	906.2	889.7	873.3	856.8	843.5
47.5°	906.7	896.2	885.7	875.3	864.8	851.0	833.9	816.8	799.7	782.7	768.7
50°	859.3	848.6	837.9	827.2	816.5	802.5	785.0	767.4	749.8	732.4	718.6
52.5°	811.0	800.5	790.1	779.6	769.1	754.9	736.9	719.0	701.0	683.1	669.1
55°	739.8	728.8	717.8	706.9	695.9	681.5	663.7	645.9	628.1	610.3	596.0
57.5°	669.2	657.8	646.4	635.0	623.7	609.1	591.7	574.1	556.5	539.0	524.6
60°	618.9	608.0	597.0	586.0	575.1	560.8	543.3	525.8	508.2	490.7	476.4
62.5°	573.5	562.1	550.7	539.3	528.0	513.3	495.3	477.3	459.3	441.4	428.2
65°	503.0	491.2	479.5	467.7	455.9	441.2	423.7	406.2	388.6	371.1	359.4
67.5°	429.8	418.5	407.2	395.9	384.6	370.9	354.5	338.3	322.0	305.8	295.6
70°	383.4	371.9	360.4	348.9	337.4	323.9	308.3	292.6	277.0	261.4	252.4
72.5°	334.1	323.7	313.3	302.9	292.5	279.9	265.2	250.4	235.7	221.0	213.2
75°	267.5	257.4	247.3	237.1	227.0	215.4	202.6	189.8	176.8	164.0	157.7
77.5°	200.0	191.4	182.8	174.2	165.6	156.0	145.6	135.3	124.8	114.4	110.8
80°	156.6	148.6	140.7	132.8	124.8	116.7	108.5	100.3	92.0	83.8	83.0
82.5°	119.1	111.8	104.5	97.2	90.0	83.9	79.3	74.5	69.8	65.1	64.5
85°	66.6	61.1	55.6	50.1	44.7	41.5	40.7	39.9	39.1	38.3	37.6
87.5°	22.8	21.5	20.2	18.6	17.1	16.1	16.9	16.8	16.9	17.0	16.6
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°	1610.2	1610.2	1610.2	1610.2	1610.2	1610.2	1610.2	1610.2
2.5°	1604.1	1606.5	1608.9	1610.1	1609.8	1609.6	1609.4	1609.2
5°	1593.4	1596.2	1598.9	1600.0	1599.5	1598.9	1598.4	1597.9
7.5°	1572.3	1574.0	1575.7	1576.2	1575.3	1574.4	1573.5	1572.6
10°	1553.2	1554.3	1555.3	1555.3	1554.3	1553.2	1552.0	1551.0
12.5°	1529.6	1530.3	1530.9	1530.4	1528.9	1527.4	1525.9	1524.4
15°	1488.3	1487.6	1487.1	1485.9	1484.0	1482.0	1480.2	1478.2
17.5°	1438.4	1436.9	1435.4	1433.2	1430.2	1427.4	1424.4	1421.5
20°	1403.6	1401.4	1399.2	1396.3	1392.8	1389.2	1385.6	1382.1
22.5°	1364.9	1361.6	1358.3	1355.2	1352.3	1349.4	1346.5	1343.6
25°	1302.4	1297.8	1293.2	1289.4	1286.7	1284.0	1281.2	1278.5
27.5°	1238.9	1233.1	1227.4	1222.5	1218.6	1214.6	1210.7	1206.8
30°	1193.3	1186.4	1179.6	1173.9	1169.6	1165.2	1160.8	1156.5
32.5°	1146.7	1138.8	1130.9	1124.8	1120.6	1116.4	1112.3	1108.1
35°	1077.4	1068.1	1058.7	1051.7	1046.7	1041.8	1036.9	1031.9
37.5°	1003.0	992.6	982.1	974.5	969.6	964.6	959.7	954.8
40°	953.4	941.9	930.4	922.2	917.3	912.3	907.4	902.5
42.5°	904.6	893.0	881.2	872.8	867.6	862.5	857.3	852.2
45°	830.0	816.5	803.2	794.0	789.1	784.1	779.2	774.3
47.5°	754.8	740.9	726.9	717.3	711.9	706.4	701.0	695.6
50°	704.9	691.3	677.5	668.1	662.9	657.6	652.5	647.3
52.5°	655.1	641.2	627.3	617.7	612.2	606.8	601.4	596.0
55°	581.8	567.6	553.3	543.6	538.3	533.2	528.0	522.7
57.5°	510.1	495.6	481.2	472.0	468.0	464.0	460.1	456.2
60°	462.2	447.9	433.7	424.4	420.0	415.6	411.3	406.9
62.5°	415.1	401.9	388.8	380.4	376.9	373.4	369.9	366.4
65°	347.5	335.7	324.0	316.5	313.2	309.9	306.6	303.3
67.5°	285.4	275.4	265.2	258.3	254.7	251.1	247.4	243.9
70°	243.3	234.3	225.2	219.3	216.6	213.8	211.1	208.4
72.5°	205.5	197.8	190.0	184.9	182.4	179.9	177.4	174.9
75°	151.4	145.1	138.8	134.8	133.1	131.5	129.8	128.2
77.5°	107.1	103.4	99.7	97.6	97.1	96.7	96.1	95.7
80°	82.2	81.4	80.5	80.0	79.7	79.5	79.2	78.9
82.5°	63.8	63.3	62.7	62.2	62.0	61.7	61.4	61.2
85°	37.1	36.6	36.0	35.8	35.8	35.8	35.8	35.8
87.5°	16.6	16.5	16.5	16.5	16.9	17.3	17.3	17.6
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: P332978-940

CATALOG NUMBER: S124RDIP-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)