

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: P332984-930

Luminaire Tested: **S124RDIP-S1020D1205U930-4F0-1E-UDD-F4**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332984-930
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-S1020D1205U930-4F0-1E-UDD-F4
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 1205 LUMENS PER FOOT, BATWING OPTIC
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6911.1 lumens
Efficiency: N/A
Efficacy: 105.7 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

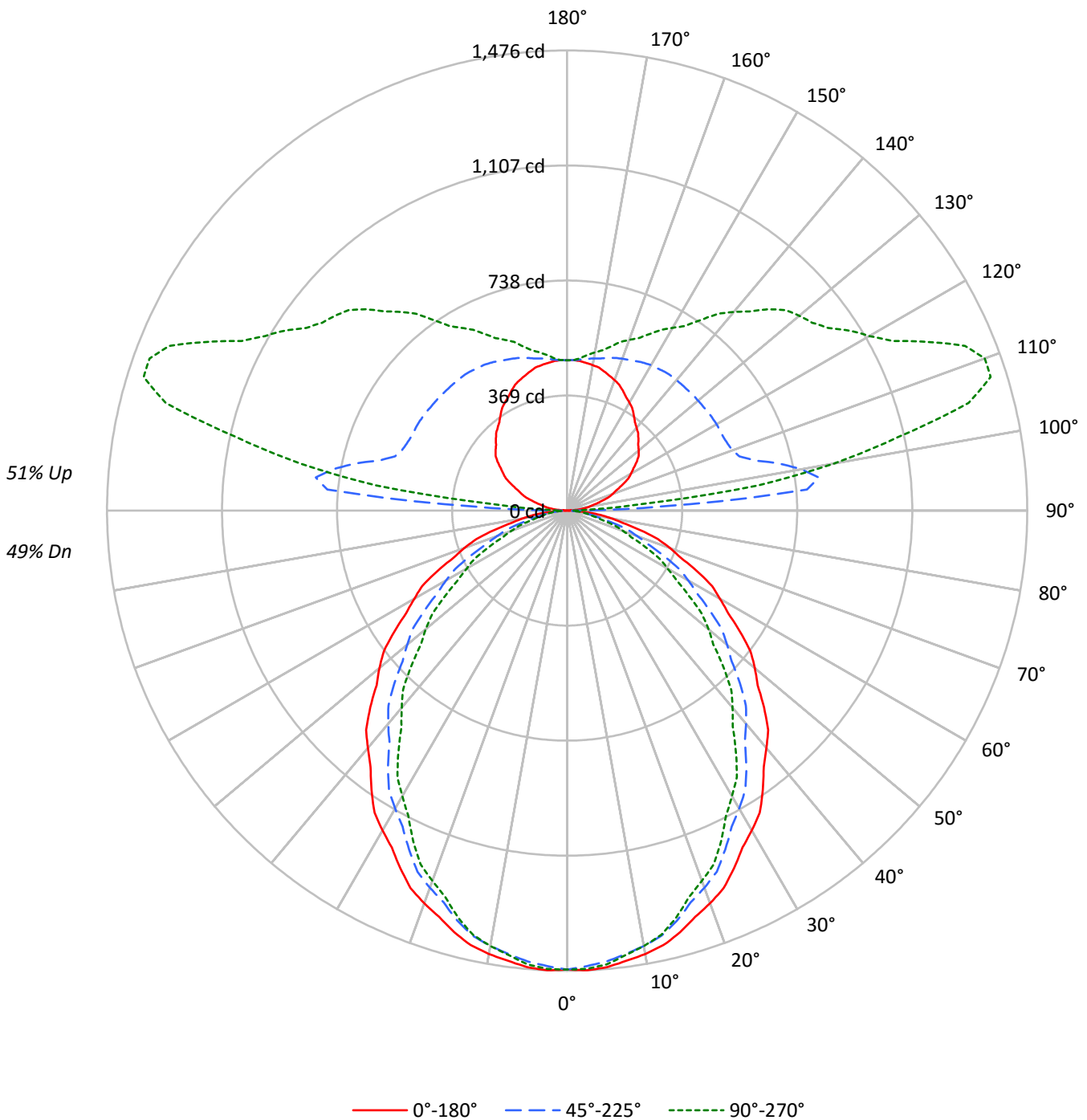
Input Watts (W): 65.4
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	50	30	10	0	
RCR																						
0	107	107	107	107	99	99	99	99	83	83	83	69	69	69	55	55	55	49				49
1	98	94	90	86	90	87	83	80	73	71	69	61	59	58	49	48	47				42	
2	89	82	76	71	82	76	71	66	64	61	57	54	51	49	44	42	40				36	
3	82	72	65	59	75	67	61	56	57	52	48	48	44	41	39	37	35				30	
4	75	64	56	50	69	60	53	47	51	46	41	43	39	36	35	32	30				26	
5	69	57	49	43	63	53	46	41	46	40	36	38	34	31	32	29	26				23	
6	63	51	43	38	58	48	41	36	41	36	31	35	30	27	29	26	23				20	
7	59	47	39	33	54	43	36	31	37	32	28	32	27	24	26	23	21				18	
8	54	42	35	29	50	39	33	28	34	29	25	29	25	22	24	21	19				16	
9	51	39	31	26	47	36	29	25	31	26	22	27	23	19	22	19	17				15	
10	47	35	28	24	44	33	27	22	29	24	20	25	21	18	21	18	15				13	

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	11885	11885	11885
5°	11912	11766	11839
10°	11837	11625	11625
15°	11701	11381	11295
20°	11515	11059	10856
25°	11276	10684	10413
30°	11044	10288	9857
35°	10787	9876	9298
40°	10478	9409	8696
45°	10193	8944	8082
50°	9868	8410	7433
55°	9520	7854	6726
60°	9137	7245	6006
65°	8785	6481	5297
70°	8275	5641	4497
75°	7629	4676	3656
80°	6657	3561	3357
85°	5641	3242	3029



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	138.3	2.0
10°-20°	385.6	5.6
20°-30°	556.9	8.1
30°-40°	631.2	9.1
40°-50°	609.5	8.8
50°-60°	506.9	7.3
60°-70°	350.0	5.1
70°-80°	177.4	2.6
80°-90°	48.2	0.7
90°-100°	348.3	5.0
100°-110°	724.9	10.5
110°-120°	649.3	9.4
120°-130°	546.2	7.9
130°-140°	455.4	6.6
140°-150°	347.9	5.0
150°-160°	244.5	3.5
160°-170°	143.8	2.1
170°-180°	46.8	0.7
0°-30°	1080.8	15.6
0°-40°	1712.0	24.8
0°-60°	2828.4	40.9
0°-90°	3404.0	49.3
90°-120°	1722.5	24.9
90°-150°	3071.9	44.4
90°-180°	3507.0	50.7
0°-180°	6911.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1472	1472	1472	1472	1472	
5°	1470	1465	1452	1462	1461	139
15°	1400	1389	1362	1359	1352	394
25°	1266	1244	1199	1181	1169	583
35°	1094	1057	1002	965	944	684
45°	893	850	783	730	708	688
55°	676	630	558	501	478	605
65°	460	410	339	293	277	454
75°	245	202	150	125	117	258
85°	61	39	35	33	33	68
90°	1	8	17	19	20	5
95°	31	99	772	382	231	35
105°	111	161	622	1338	1333	118
115°	195	245	554	1065	1280	193
125°	272	323	551	906	1021	242
135°	323	385	547	804	913	250
145°	372	426	544	678	746	234
155°	424	457	529	599	624	195
165°	461	476	507	537	545	130
175°	481	482	486	493	491	46
180°	482	482	482	482	482	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1472.2	1472.2	1472.2	1472.2	1472.2	1472.2	1472.2	1472.2	1472.2	1472.2	1472.2
2.5°	1475.8	1475.0	1474.1	1473.4	1472.6	1471.0	1468.8	1466.6	1464.4	1462.2	1464.4
5°	1469.9	1468.9	1467.9	1466.9	1465.9	1463.9	1460.9	1457.9	1454.9	1451.9	1454.4
7.5°	1456.6	1455.6	1454.5	1453.4	1452.4	1449.9	1446.0	1442.1	1438.2	1434.3	1435.9
10°	1444.0	1442.8	1441.4	1440.2	1439.0	1436.1	1431.6	1427.1	1422.5	1418.1	1419.0
12.5°	1427.8	1426.3	1424.8	1423.4	1422.0	1418.5	1413.2	1407.9	1402.6	1397.3	1397.9
15°	1400.0	1397.7	1395.5	1393.3	1391.0	1386.7	1380.5	1374.2	1368.0	1361.7	1361.2
17.5°	1366.4	1363.2	1359.9	1356.7	1353.4	1348.0	1340.5	1333.0	1325.5	1317.9	1316.5
20°	1340.3	1337.0	1333.7	1330.5	1327.2	1321.4	1312.9	1304.3	1295.8	1287.3	1285.3
22.5°	1311.4	1307.7	1304.1	1300.5	1296.8	1290.4	1281.3	1272.2	1263.1	1253.9	1250.9
25°	1265.9	1261.3	1256.9	1252.4	1247.8	1240.5	1230.2	1219.9	1209.7	1199.4	1195.1
27.5°	1218.1	1212.4	1206.8	1201.1	1195.5	1187.2	1176.2	1165.2	1154.2	1143.2	1138.0
30°	1184.7	1178.4	1172.2	1166.0	1159.7	1150.6	1138.9	1127.1	1115.3	1103.6	1097.3
32.5°	1149.6	1142.5	1135.4	1128.4	1121.3	1111.7	1099.5	1087.4	1075.1	1063.0	1055.7
35°	1094.5	1086.5	1078.5	1070.5	1062.5	1052.2	1039.7	1027.2	1014.6	1002.1	993.6
37.5°	1035.7	1027.4	1019.2	1010.9	1002.7	991.6	977.7	963.8	949.9	936.0	926.5
40°	994.3	985.9	977.7	969.4	961.2	949.9	935.6	921.3	907.0	892.8	882.2
42.5°	954.6	945.9	937.2	928.5	919.9	908.1	893.2	878.3	863.5	848.6	837.9
45°	892.8	883.5	874.2	865.0	855.7	843.5	828.5	813.5	798.4	783.4	771.2
47.5°	829.0	819.4	809.8	800.3	790.7	778.1	762.5	746.8	731.2	715.6	702.9
50°	785.7	775.9	766.1	756.4	746.6	733.7	717.7	701.6	685.6	669.6	657.0
52.5°	741.5	731.9	722.4	712.8	703.2	690.2	673.8	657.4	640.9	624.5	611.8
55°	676.4	666.3	656.3	646.3	636.3	623.1	606.8	590.5	574.3	558.0	544.9
57.5°	611.9	601.4	591.0	580.6	570.2	556.9	541.0	524.9	508.8	492.8	479.6
60°	565.9	555.9	545.8	535.8	525.8	512.7	496.8	480.7	464.6	448.7	435.6
62.5°	524.4	514.0	503.5	493.1	482.7	469.3	452.8	436.4	420.0	403.6	391.5
65°	459.9	449.1	438.4	427.6	416.9	403.4	387.4	371.4	355.3	339.3	328.6
67.5°	393.0	382.6	372.3	362.0	351.6	339.1	324.2	309.3	294.4	279.6	270.3
70°	350.6	340.1	329.5	319.0	308.5	296.1	281.8	267.5	253.2	239.0	230.7
72.5°	305.5	296.0	286.4	277.0	267.4	255.9	242.5	228.9	215.5	202.0	194.9
75°	244.6	235.4	226.1	216.8	207.6	197.0	185.2	173.5	161.7	149.9	144.1
77.5°	182.9	175.0	167.1	159.2	151.4	142.7	133.1	123.7	114.1	104.6	101.3
80°	143.2	135.9	128.7	121.4	114.1	106.7	99.2	91.7	84.1	76.6	75.9
82.5°	108.9	102.2	95.6	88.9	82.3	76.7	72.5	68.2	63.8	59.5	58.9
85°	60.9	55.8	50.9	45.8	40.8	37.9	37.2	36.4	35.7	35.0	34.4
87.5°	21.0	19.7	18.7	17.3	15.8	14.9	15.9	15.7	15.8	16.1	15.7
90°	1.0	2.9	5.7	6.6	7.6	7.6	13.3	13.3	15.2	17.0	16.1
92.5°	10.8	15.7	24.6	36.2	50.1	69.7	117.9	191.4	263.0	300.5	250.3
95°	31.2	34.1	43.6	55.9	78.6	118.5	200.8	356.2	582.6	772.1	793.9
97.5°	56.1	56.1	64.2	75.6	95.1	128.5	191.9	320.2	545.3	813.3	997.4
100°	72.0	72.0	78.6	90.0	108.0	138.4	194.2	301.3	494.6	761.7	1004.2
102.5°	87.2	88.7	94.6	105.2	122.4	151.2	201.8	296.0	460.4	697.2	947.4
105°	110.9	113.7	118.5	129.8	146.8	174.3	219.8	298.4	431.0	621.5	844.1
107.5°	137.0	138.8	143.7	155.7	172.0	199.2	240.8	312.4	425.7	579.0	760.8
110°	154.4	156.3	161.0	172.4	189.5	215.1	256.7	323.0	427.3	564.7	719.1



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	171.1	173.0	178.5	189.1	206.2	231.7	271.9	334.4	431.8	557.8	695.5
115°	195.2	198.0	204.6	214.1	232.1	257.7	295.5	352.5	440.5	554.2	673.6
117.5°	220.1	222.8	228.7	239.1	256.0	282.5	318.5	370.8	449.8	553.3	663.7
120°	236.8	238.7	245.4	255.8	271.9	298.4	334.4	383.7	456.6	553.3	658.4
122.5°	252.0	253.9	260.6	270.2	287.8	313.6	349.6	395.8	463.5	552.5	652.4
125°	271.9	275.7	281.4	291.8	309.8	336.3	370.4	414.0	473.7	551.4	642.3
127.5°	289.5	292.5	299.4	311.3	330.0	356.8	389.7	429.7	481.8	549.3	628.8
130°	299.4	303.1	310.7	325.0	342.9	370.4	402.7	439.6	487.9	548.5	620.5
132.5°	309.2	312.3	322.1	335.6	355.1	381.1	413.3	449.5	493.2	547.8	612.9
135°	323.0	326.9	336.3	352.5	372.3	397.0	428.2	462.4	501.2	546.7	601.6
137.5°	336.9	340.5	350.9	366.2	386.9	410.4	439.6	471.4	505.9	546.4	591.7
140°	346.7	349.6	360.0	376.1	396.0	418.7	447.2	477.4	509.7	545.7	586.4
142.5°	357.3	360.2	369.8	385.2	404.3	426.3	454.0	482.0	512.7	545.7	581.9
145°	372.3	375.2	384.7	397.9	415.9	436.8	461.4	487.0	514.5	543.8	574.1
147.5°	389.1	390.1	398.4	412.1	427.1	445.8	469.0	491.3	515.4	540.4	567.1
150°	399.8	400.7	408.3	419.7	433.9	451.9	472.7	493.6	515.4	538.1	561.8
152.5°	409.6	409.9	417.4	428.0	440.8	457.2	475.8	495.1	513.9	534.3	555.7
155°	423.5	424.4	430.1	439.6	450.0	464.2	480.3	496.4	511.6	528.6	546.7
157.5°	436.9	436.9	442.2	449.6	458.7	469.9	483.6	496.4	509.2	522.8	537.4
160°	445.2	445.2	449.1	455.7	463.3	473.7	485.0	496.4	506.9	518.2	530.5
162.5°	452.8	452.1	455.1	461.0	467.8	476.0	486.6	496.4	504.6	513.6	524.5
165°	461.4	461.4	463.3	468.0	472.7	478.4	487.0	494.6	500.2	506.9	514.5
167.5°	469.9	469.0	469.9	473.5	476.1	480.5	486.7	492.3	495.7	500.0	505.3
170°	473.7	472.7	473.7	476.5	478.4	481.3	486.0	490.7	492.6	495.5	499.3
172.5°	477.4	476.5	476.7	478.8	480.0	482.0	485.3	489.3	489.6	490.9	494.0
175°	481.3	480.3	480.3	481.3	482.2	482.2	484.1	487.0	486.0	486.0	487.9
177.5°	483.0	482.2	481.4	482.2	482.2	482.2	483.0	484.5	483.0	483.0	483.7
180°	482.2	482.2	482.2	482.2	482.2	482.2	482.2	482.2	482.2	482.2	482.2



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1472.2	1472.2	1472.2	1472.2	1472.2	1472.2	1472.2	1472.2
2.5°	1466.6	1468.8	1471.0	1472.1	1471.9	1471.7	1471.5	1471.3
5°	1456.9	1459.4	1461.9	1462.9	1462.4	1461.9	1461.4	1460.9
7.5°	1437.5	1439.1	1440.7	1441.1	1440.3	1439.5	1438.7	1437.9
10°	1420.1	1421.1	1422.0	1422.0	1421.1	1420.1	1419.0	1418.1
12.5°	1398.5	1399.1	1399.7	1399.3	1397.9	1396.5	1395.1	1393.8
15°	1360.7	1360.2	1359.7	1358.5	1356.8	1355.0	1353.3	1351.5
17.5°	1315.2	1313.8	1312.4	1310.3	1307.7	1305.0	1302.4	1299.7
20°	1283.3	1281.3	1279.3	1276.7	1273.4	1270.2	1266.9	1263.6
22.5°	1247.9	1244.9	1241.9	1239.1	1236.4	1233.8	1231.1	1228.5
25°	1190.8	1186.6	1182.3	1178.9	1176.5	1173.9	1171.4	1169.0
27.5°	1132.7	1127.5	1122.2	1117.8	1114.2	1110.5	1106.9	1103.3
30°	1091.0	1084.8	1078.5	1073.3	1069.3	1065.4	1061.4	1057.4
32.5°	1048.5	1041.2	1034.0	1028.4	1024.6	1020.8	1017.0	1013.2
35°	985.0	976.6	968.0	961.6	957.0	952.5	948.0	943.5
37.5°	917.0	907.5	898.0	891.0	886.5	881.9	877.4	872.9
40°	871.7	861.2	850.7	843.2	838.7	834.1	829.6	825.2
42.5°	827.1	816.4	805.7	798.0	793.3	788.6	783.8	779.2
45°	758.9	746.6	734.3	725.9	721.5	716.9	712.4	707.9
47.5°	690.2	677.4	664.6	655.8	650.9	645.9	640.9	636.0
50°	644.5	632.0	619.5	610.8	606.1	601.3	596.6	591.8
52.5°	599.0	586.3	573.6	564.8	559.8	554.8	549.8	544.9
55°	531.9	518.9	505.9	497.0	492.2	487.5	482.7	477.9
57.5°	466.4	453.1	439.9	431.5	427.9	424.3	420.7	417.1
60°	422.6	409.5	396.6	388.0	384.0	380.0	376.0	372.0
62.5°	379.5	367.5	355.5	347.8	344.6	341.4	338.2	335.0
65°	317.7	307.0	296.2	289.3	286.3	283.3	280.3	277.3
67.5°	261.0	251.8	242.5	236.2	232.8	229.6	226.2	223.0
70°	222.4	214.2	205.9	200.5	198.0	195.5	193.0	190.5
72.5°	187.8	180.8	173.7	169.1	166.7	164.4	162.2	159.9
75°	138.4	132.6	126.9	123.3	121.7	120.3	118.7	117.2
77.5°	97.9	94.6	91.2	89.3	88.8	88.4	87.9	87.5
80°	75.2	74.4	73.6	73.1	72.9	72.6	72.4	72.2
82.5°	58.4	57.9	57.3	56.9	56.7	56.4	56.2	55.9
85°	33.9	33.4	32.9	32.7	32.7	32.7	32.7	32.7
87.5°	15.7	15.7	15.6	15.6	16.0	16.4	16.4	16.6
90°	17.0	18.0	18.9	18.9	19.9	20.9	19.9	19.9
92.5°	186.1	140.0	111.5	92.5	81.3	76.1	73.0	73.0
95°	702.0	555.1	428.2	336.3	289.9	260.6	243.4	231.1
97.5°	1037.2	982.6	890.0	791.1	723.0	666.0	637.6	617.9
100°	1142.6	1161.5	1115.1	1045.0	962.5	904.7	876.4	868.8
102.5°	1137.3	1231.2	1244.6	1215.4	1164.9	1123.0	1093.1	1087.0
105°	1061.0	1225.0	1318.7	1357.6	1359.5	1351.9	1338.6	1332.9
107.5°	952.8	1127.4	1259.5	1343.9	1390.7	1412.3	1421.8	1424.3
110°	887.7	1051.6	1189.0	1293.1	1360.4	1400.2	1417.3	1425.8



TEST NUMBER: P332984-930

CATALOG NUMBER: S124RDIP-S1020D1205U930-4F0-1E-UDD-F4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	839.9	984.9	1114.7	1218.9	1295.3	1343.4	1367.3	1381.1
115°	792.0	908.6	1019.4	1110.4	1185.2	1242.0	1272.4	1279.9
117.5°	768.5	865.0	952.1	1029.2	1093.1	1140.8	1171.5	1177.4
120°	757.9	846.0	921.8	989.0	1043.1	1084.8	1109.4	1119.8
122.5°	748.8	833.9	902.9	961.8	1007.5	1043.1	1063.9	1074.3
125°	733.3	814.7	880.1	932.2	970.1	997.6	1015.6	1021.2
127.5°	714.3	792.2	857.4	906.9	944.9	969.4	984.6	990.2
130°	699.2	774.0	838.5	888.7	927.5	951.1	966.3	972.0
132.5°	683.2	753.6	816.4	866.7	904.7	931.5	945.8	951.5
135°	661.3	722.8	780.6	828.0	865.9	892.4	907.6	913.3
137.5°	641.4	693.5	742.2	785.0	820.4	846.6	859.1	865.9
140°	630.0	674.5	717.1	756.9	790.1	811.0	824.2	831.8
142.5°	619.4	658.6	695.2	729.7	759.0	778.4	790.1	795.4
145°	604.5	636.7	665.0	691.6	715.3	731.4	740.9	745.6
147.5°	592.2	617.7	640.4	661.3	678.7	692.5	699.8	701.4
150°	584.6	606.3	625.3	642.3	657.5	669.8	675.5	676.5
152.5°	576.2	594.9	612.4	626.4	639.3	649.3	652.7	653.7
155°	563.7	578.9	593.0	604.5	613.9	621.5	624.4	624.4
157.5°	550.2	563.0	574.9	584.0	591.2	596.9	598.6	598.6
160°	541.9	552.3	562.7	570.3	576.0	581.7	582.6	582.6
162.5°	533.5	542.5	550.7	557.4	561.6	567.3	568.3	567.4
165°	522.0	527.7	534.3	539.1	542.8	546.7	545.7	544.8
167.5°	510.9	515.2	520.5	523.3	525.2	527.7	527.5	526.8
170°	504.0	506.9	510.6	513.5	515.4	516.3	515.4	515.4
172.5°	497.9	500.0	502.3	504.3	505.5	506.5	505.5	504.0
175°	489.8	490.7	492.6	492.6	492.6	494.6	492.6	490.7
177.5°	484.5	485.3	485.3	486.0	485.3	486.0	484.5	483.0
180°	482.2	482.2	482.2	482.2	482.2	482.2	482.2	482.2

(END OF REPORT)