

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: P332669-830

Luminaire Tested: **S124DIP-S1020D1205U830-4F0-1E-UDD-F4**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332669-830
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-S1020D1205U830-4F0-1E-UDD-F4
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 1205 LUMENS PER FOOT, BATWING OPTIC
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8231.0 lumens
Efficiency: N/A
Efficacy: 125.9 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

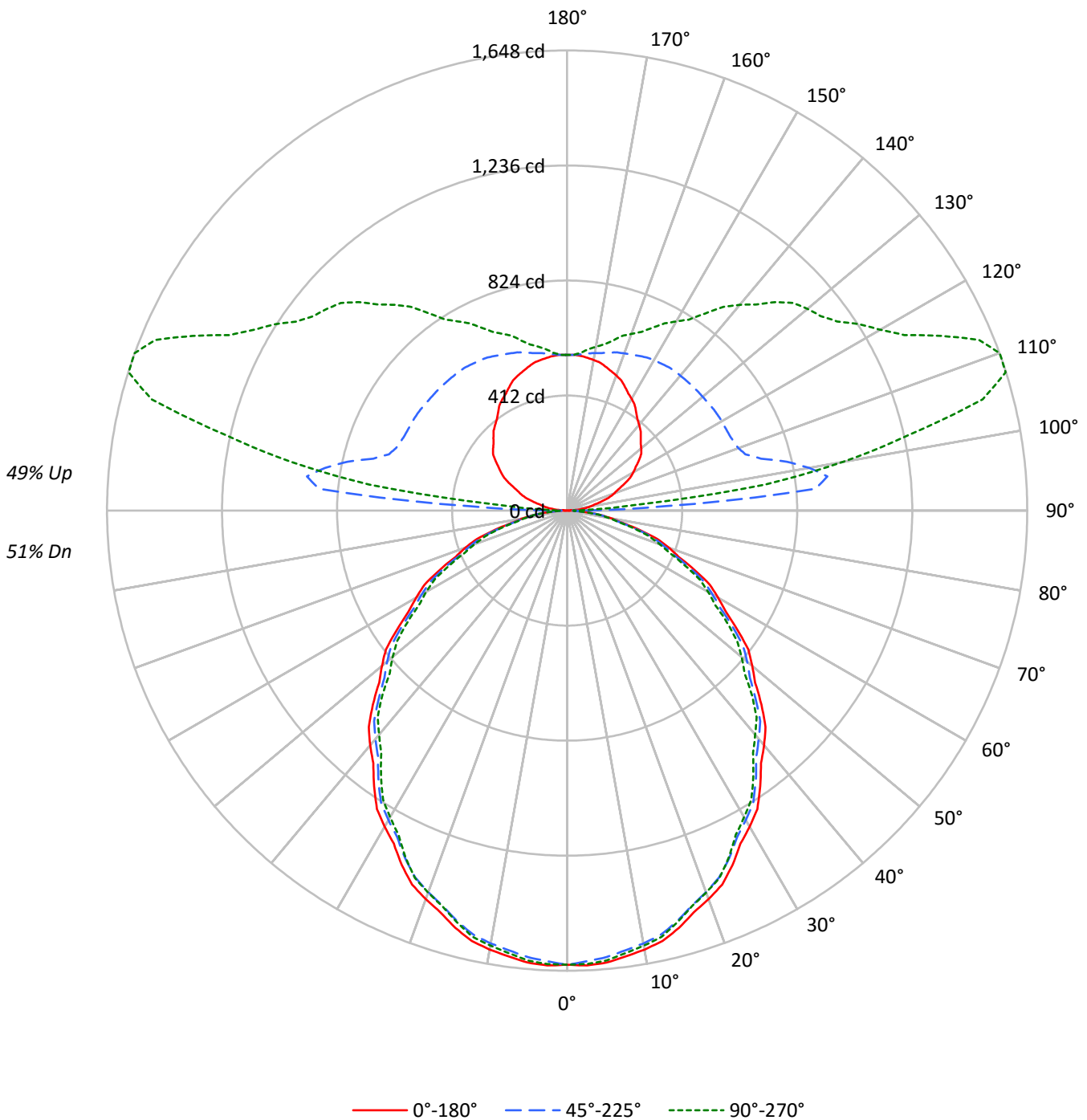
Input Watts (W): 65.4
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	107	107	107	107	99	99	99	99	84	84	84	70	70	70	57	57	57	51
1	98	94	90	86	90	87	83	80	73	71	69	61	60	58	50	49	48	43
2	89	82	76	70	82	76	70	66	64	60	57	54	51	48	44	42	40	36
3	81	72	64	59	75	67	60	55	57	52	48	48	44	41	39	37	34	30
4	74	64	56	50	68	59	52	47	50	45	41	42	38	35	35	32	30	26
5	68	57	48	42	63	53	45	40	45	39	35	38	34	30	31	28	26	23
6	63	51	43	37	58	47	40	35	41	35	31	34	30	27	29	25	23	20
7	58	46	38	32	54	43	36	31	37	31	27	31	27	24	26	23	20	18
8	54	42	34	29	50	39	32	27	34	28	24	29	24	21	24	21	18	16
9	50	38	31	25	46	36	29	24	31	25	21	26	22	19	22	19	16	14
10	47	35	28	23	43	33	26	22	28	23	19	24	20	17	21	17	15	13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	13130	13130	13130
5°	13169	13011	13105
10°	13086	12904	12969
15°	12929	12721	12754
20°	12718	12494	12506
25°	12479	12235	12200
30°	12185	11929	11820
35°	11880	11610	11456
40°	11564	11248	11041
45°	11233	10891	10683
50°	10868	10574	10246
55°	10473	10162	9831
60°	10078	9700	9405
65°	9635	9259	8886
70°	9135	8674	8337
75°	8372	7966	7764
80°	7452	7146	6969
85°	6521	6280	6150



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	153.2	1.9
10°-20°	431.5	5.2
20°-30°	635.2	7.7
30°-40°	738.4	9.0
40°-50°	738.4	9.0
50°-60°	645.9	7.8
60°-70°	479.7	5.8
70°-80°	272.5	3.3
80°-90°	81.7	1.0
90°-100°	402.7	4.9
100°-110°	838.0	10.2
110°-120°	750.6	9.1
120°-130°	631.4	7.7
130°-140°	526.5	6.4
140°-150°	402.2	4.9
150°-160°	282.7	3.4
160°-170°	166.3	2.0
170°-180°	54.1	0.7
0°-30°	1219.8	14.8
0°-40°	1958.2	23.8
0°-60°	3342.6	40.6
0°-90°	4176.5	50.7
90°-120°	1991.3	24.2
90°-150°	3551.4	43.1
90°-180°	4054.0	49.3
0°-180°	8231.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1626	1626	1626	1626	1626	
5°	1625	1619	1606	1619	1617	154
15°	1547	1541	1522	1529	1526	436
25°	1401	1391	1374	1374	1370	644
35°	1205	1196	1178	1169	1162	753
45°	984	974	954	940	936	758
55°	744	739	722	707	698	666
65°	504	497	485	472	465	499
75°	268	262	255	250	249	285
85°	70	70	68	68	66	77
90°	1	9	20	22	23	6
95°	36	114	893	442	267	40
105°	128	186	718	1547	1541	137
115°	226	283	641	1231	1480	224
125°	314	374	637	1048	1181	280
135°	373	445	632	930	1056	289
145°	430	493	629	784	862	270
155°	490	528	611	692	722	226
165°	533	550	586	620	630	151
175°	556	558	562	570	567	53
180°	558	558	558	558	558	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1626.4	1626.4	1626.4	1626.4	1626.4	1626.4	1626.4	1626.4	1626.4	1626.4	1626.4
2.5°	1630.5	1629.8	1629.1	1628.4	1627.8	1626.1	1623.5	1621.0	1618.4	1615.9	1618.3
5°	1625.0	1623.9	1622.8	1621.6	1620.4	1618.3	1615.0	1611.8	1608.7	1605.5	1608.7
7.5°	1610.0	1608.7	1607.6	1606.5	1605.3	1603.0	1599.4	1595.9	1592.3	1588.8	1591.4
10°	1596.4	1595.3	1594.0	1592.9	1591.8	1589.3	1585.5	1581.8	1578.0	1574.2	1576.5
12.5°	1578.7	1577.5	1576.3	1575.2	1574.0	1571.4	1567.4	1563.5	1559.4	1555.5	1558.0
15°	1546.9	1545.7	1544.5	1543.4	1542.2	1539.5	1535.1	1530.8	1526.4	1522.1	1523.8
17.5°	1508.5	1507.1	1505.6	1504.2	1502.8	1500.0	1495.8	1491.8	1487.6	1483.6	1484.6
20°	1480.4	1478.9	1477.5	1476.0	1474.6	1471.7	1467.4	1463.0	1458.7	1454.3	1455.2
22.5°	1450.2	1448.2	1446.3	1444.4	1442.6	1439.4	1435.0	1430.7	1426.3	1422.0	1423.6
25°	1400.9	1398.9	1396.8	1394.8	1392.8	1389.8	1385.7	1381.7	1377.6	1373.6	1373.9
27.5°	1344.6	1342.6	1340.4	1338.3	1336.2	1333.3	1329.6	1325.8	1322.0	1318.2	1317.6
30°	1307.1	1304.8	1302.4	1300.1	1297.8	1294.8	1291.0	1287.2	1283.5	1279.7	1278.6
32.5°	1267.4	1265.4	1263.3	1261.2	1259.1	1256.0	1252.1	1248.1	1244.1	1240.1	1238.7
35°	1205.4	1203.4	1201.4	1199.4	1197.3	1194.3	1190.2	1186.2	1182.1	1178.1	1176.0
37.5°	1140.0	1138.1	1136.3	1134.4	1132.6	1129.5	1125.1	1120.8	1116.4	1112.1	1109.9
40°	1097.3	1095.0	1092.6	1090.3	1088.0	1084.7	1080.3	1076.0	1071.7	1067.3	1064.4
42.5°	1051.4	1050.0	1048.6	1047.3	1045.8	1042.7	1037.9	1033.1	1028.3	1023.5	1020.1
45°	983.9	981.8	979.9	977.8	975.8	972.4	967.8	963.2	958.6	953.9	950.7
47.5°	913.2	911.9	910.5	909.1	907.7	904.8	900.6	896.3	892.0	887.7	884.1
50°	865.3	864.1	863.0	861.9	860.6	858.1	854.0	850.0	845.9	841.9	837.8
52.5°	818.4	817.0	815.6	814.3	812.8	810.0	805.7	801.4	797.1	792.9	789.3
55°	744.1	743.2	742.3	741.5	740.6	738.2	734.1	730.1	726.0	722.0	718.5
57.5°	673.3	672.2	671.3	670.2	669.3	666.8	662.8	658.8	654.8	650.8	647.5
60°	624.2	622.7	621.3	619.9	618.4	615.9	612.1	608.3	604.5	600.8	598.1
62.5°	576.3	575.0	573.8	572.6	571.4	568.8	564.8	560.8	556.8	552.8	550.4
65°	504.4	502.8	501.4	500.0	498.5	496.3	493.4	490.6	487.7	484.7	481.9
67.5°	431.9	430.6	429.2	427.9	426.5	424.5	421.7	419.0	416.1	413.4	410.6
70°	387.0	385.0	383.0	381.0	378.9	376.7	374.5	372.1	369.9	367.5	365.1
72.5°	339.1	337.1	335.1	333.0	331.0	329.0	327.2	325.4	323.5	321.6	319.8
75°	268.4	267.0	265.5	264.1	262.7	261.2	259.8	258.4	256.8	255.4	254.3
77.5°	201.0	200.3	199.6	199.1	198.4	197.5	196.1	194.9	193.6	192.4	192.0
80°	160.3	159.4	158.5	157.7	156.8	156.1	155.5	155.0	154.4	153.7	153.2
82.5°	120.6	120.3	119.9	119.4	119.0	118.8	118.7	118.6	118.5	118.3	118.0
85°	70.4	70.4	70.4	70.4	70.4	70.1	69.5	68.9	68.3	67.8	67.8
87.5°	27.3	27.5	28.0	27.9	27.9	27.7	28.7	28.6	28.7	28.9	28.7
90°	1.1	3.3	6.6	7.6	8.8	8.8	15.4	15.4	17.5	19.7	18.7
92.5°	12.4	18.2	28.5	41.8	57.9	80.6	136.3	221.2	304.1	347.4	289.4
95°	36.1	39.4	50.4	64.7	90.9	137.0	232.1	411.8	673.5	892.6	917.8
97.5°	64.8	64.8	74.3	87.4	110.0	148.5	221.9	370.2	630.4	940.2	1153.1
100°	83.2	83.2	90.9	104.1	124.9	159.9	224.5	348.3	571.7	880.5	1160.9
102.5°	100.8	102.5	109.3	121.6	141.5	174.8	233.3	342.1	532.3	806.1	1095.2
105°	128.2	131.4	137.0	150.1	169.8	201.5	254.1	345.0	498.3	718.5	975.8
107.5°	158.3	160.5	166.1	180.0	198.9	230.3	278.4	361.2	492.2	669.4	879.5
110°	178.5	180.7	186.2	199.3	219.0	248.6	296.8	373.4	494.0	652.8	831.3



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	197.8	200.0	206.3	218.6	238.4	267.9	314.3	386.6	499.2	644.9	804.1
115°	225.6	228.9	236.6	247.5	268.3	297.9	341.7	407.5	509.3	640.7	778.7
117.5°	254.5	257.6	264.4	276.4	296.0	326.6	368.3	428.7	520.0	639.6	767.3
120°	273.8	276.0	283.7	295.7	314.3	345.0	386.6	443.6	527.9	639.6	761.2
122.5°	291.3	293.5	301.2	312.4	332.7	362.5	404.2	457.6	535.8	638.8	754.2
125°	314.3	318.7	325.3	337.3	358.2	388.8	428.2	478.6	547.6	637.4	742.5
127.5°	334.7	338.2	346.1	359.9	381.5	412.5	450.5	496.8	557.0	635.0	727.0
130°	346.1	350.4	359.2	375.7	396.4	428.2	465.5	508.2	564.0	634.1	717.4
132.5°	357.5	361.0	372.4	388.0	410.5	440.5	477.8	519.6	570.1	633.3	708.6
135°	373.4	377.9	388.8	407.5	430.5	458.9	495.0	534.5	579.4	632.0	695.5
137.5°	389.5	393.6	405.7	423.4	447.3	474.5	508.2	545.0	584.8	631.7	684.1
140°	400.9	404.2	416.2	434.8	457.8	484.1	517.0	552.0	589.3	630.8	678.0
142.5°	413.1	416.4	427.5	445.4	467.4	492.9	524.8	557.2	592.8	630.8	672.7
145°	430.5	433.8	444.7	460.0	480.8	504.9	533.4	563.0	594.7	628.7	663.7
147.5°	449.9	451.0	460.6	476.5	493.7	515.4	542.2	568.0	595.8	624.7	655.6
150°	462.2	463.3	472.0	485.2	501.6	522.5	546.5	570.6	595.8	622.1	649.5
152.5°	473.5	473.8	482.6	494.8	509.5	528.6	550.1	572.4	594.1	617.7	642.4
155°	489.6	490.7	497.2	508.2	520.3	536.7	555.3	573.9	591.4	611.1	632.0
157.5°	505.1	505.1	511.2	519.8	530.3	543.3	559.0	573.9	588.6	604.4	621.2
160°	514.7	514.7	519.2	526.8	535.6	547.6	560.7	573.9	586.0	599.1	613.3
162.5°	523.5	522.6	526.1	532.9	540.8	550.3	562.5	573.9	583.3	593.8	606.3
165°	533.4	533.4	535.6	541.0	546.5	553.1	563.0	571.7	578.2	586.0	594.7
167.5°	543.3	542.2	543.3	547.4	550.4	555.5	562.7	569.1	573.1	578.1	584.2
170°	547.6	546.5	547.6	550.9	553.1	556.4	561.8	567.3	569.5	572.8	577.2
172.5°	552.0	550.9	551.1	553.6	554.9	557.2	561.0	565.6	566.0	567.5	571.1
175°	556.4	555.3	555.3	556.4	557.5	557.5	559.7	563.0	561.8	561.8	564.0
177.5°	558.4	557.5	556.6	557.5	557.5	557.5	558.4	560.1	558.4	558.4	559.2
180°	557.5	557.5	557.5	557.5	557.5	557.5	557.5	557.5	557.5	557.5	557.5



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1626.4	1626.4	1626.4	1626.4	1626.4	1626.4	1626.4	1626.4
2.5°	1620.5	1622.9	1625.2	1626.3	1626.0	1625.8	1625.5	1625.3
5°	1611.8	1615.0	1618.3	1619.6	1619.0	1618.3	1617.8	1617.2
7.5°	1593.9	1596.5	1599.0	1600.2	1599.8	1599.4	1599.0	1598.7
10°	1578.9	1581.2	1583.5	1584.3	1583.8	1583.2	1582.6	1582.1
12.5°	1560.6	1563.1	1565.7	1566.5	1565.8	1564.9	1564.1	1563.3
15°	1525.6	1527.3	1529.1	1529.5	1528.6	1527.8	1526.9	1526.0
17.5°	1485.7	1486.9	1487.9	1488.2	1487.6	1487.0	1486.5	1485.8
20°	1456.0	1457.0	1457.8	1457.9	1457.4	1456.8	1456.2	1455.7
22.5°	1425.1	1426.7	1428.2	1428.5	1427.5	1426.4	1425.4	1424.4
25°	1374.1	1374.4	1374.7	1374.2	1373.1	1372.0	1370.7	1369.6
27.5°	1316.9	1316.2	1315.5	1314.5	1313.0	1311.5	1310.0	1308.6
30°	1277.4	1276.2	1275.1	1273.8	1272.3	1270.8	1269.4	1268.0
32.5°	1237.3	1236.0	1234.5	1233.1	1231.6	1230.2	1228.8	1227.3
35°	1174.0	1172.0	1170.0	1168.2	1166.8	1165.4	1163.9	1162.4
37.5°	1107.7	1105.5	1103.3	1101.3	1099.4	1097.4	1095.5	1093.6
40°	1061.5	1058.6	1055.7	1053.6	1052.1	1050.7	1049.2	1047.7
42.5°	1016.8	1013.4	1010.0	1007.9	1006.9	1005.9	1004.9	1004.0
45°	947.5	944.3	941.1	939.1	938.3	937.5	936.5	935.7
47.5°	880.5	876.9	873.4	870.4	868.3	866.0	863.8	861.7
50°	833.8	829.7	825.7	822.7	821.0	819.3	817.6	815.8
52.5°	785.7	782.0	778.4	775.6	773.4	771.2	769.0	766.8
55°	715.0	711.5	708.0	705.5	703.7	702.0	700.2	698.5
57.5°	644.2	640.9	637.6	635.1	633.4	631.8	630.1	628.4
60°	595.6	593.0	590.3	588.3	586.8	585.4	584.0	582.5
62.5°	548.1	545.6	543.3	541.4	540.0	538.5	537.1	535.6
65°	479.0	476.1	473.2	471.0	469.6	468.2	466.7	465.2
67.5°	407.8	405.0	402.3	400.7	400.2	399.8	399.4	399.1
70°	362.9	360.5	358.3	356.7	355.8	354.9	354.0	353.2
72.5°	317.9	316.0	314.2	312.8	312.0	311.1	310.3	309.3
75°	253.1	251.9	250.8	250.1	249.8	249.5	249.2	248.9
77.5°	191.6	191.3	191.0	190.4	189.6	188.9	188.1	187.4
80°	152.6	152.0	151.5	151.0	150.7	150.4	150.1	149.9
82.5°	117.6	117.3	117.0	116.6	116.3	116.0	115.7	115.5
85°	67.8	67.8	67.8	67.6	67.3	67.0	66.7	66.4
87.5°	28.9	29.2	29.4	29.4	29.6	29.9	29.6	29.6
90°	19.7	20.8	21.9	21.9	23.0	24.1	23.0	23.0
92.5°	215.1	161.8	128.8	106.9	94.0	88.0	84.4	84.4
95°	811.5	641.8	495.0	388.8	335.2	301.2	281.4	267.2
97.5°	1199.1	1136.0	1028.9	914.5	835.8	770.0	737.1	714.4
100°	1320.9	1342.7	1289.1	1208.1	1112.8	1045.9	1013.1	1004.4
102.5°	1314.8	1423.3	1438.9	1405.1	1346.7	1298.3	1263.7	1256.7
105°	1226.6	1416.2	1524.6	1569.4	1571.7	1562.9	1547.6	1541.0
107.5°	1101.5	1303.3	1456.0	1553.7	1607.8	1632.8	1643.7	1646.6
110°	1026.2	1215.7	1374.5	1495.0	1572.7	1618.7	1638.5	1648.3



TEST NUMBER: P332669-830

CATALOG NUMBER: S124DIP-S1020D1205U830-4F0-1E-UDD-F4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	971.0	1138.6	1288.6	1409.1	1497.4	1553.0	1580.6	1596.7
115°	915.6	1050.4	1178.5	1283.6	1370.2	1435.9	1470.9	1479.7
117.5°	888.4	999.9	1100.7	1189.9	1263.7	1318.9	1354.3	1361.1
120°	876.2	978.1	1065.6	1143.4	1205.9	1254.1	1282.5	1294.6
122.5°	865.6	964.0	1043.8	1111.9	1164.7	1205.9	1229.9	1242.0
125°	847.7	941.9	1017.5	1077.7	1121.5	1153.3	1174.1	1180.6
127.5°	825.8	915.9	991.2	1048.4	1092.4	1120.7	1138.2	1144.7
130°	808.3	894.8	969.3	1027.4	1072.2	1099.6	1117.1	1123.7
132.5°	789.9	871.2	943.9	1001.9	1045.9	1076.9	1093.4	1100.0
135°	764.5	835.7	902.5	957.2	1001.1	1031.7	1049.2	1055.8
137.5°	741.5	801.7	858.0	907.5	948.5	978.7	993.2	1001.1
140°	728.3	779.8	829.1	875.1	913.4	937.5	952.8	961.6
142.5°	716.0	761.4	803.7	843.6	877.5	899.8	913.4	919.5
145°	698.8	736.0	768.8	799.6	826.9	845.6	856.5	862.0
147.5°	684.6	714.1	740.4	764.5	784.7	800.6	809.0	810.9
150°	675.8	701.0	722.8	742.5	760.1	774.3	780.9	782.0
152.5°	666.1	687.8	707.9	724.2	739.0	750.6	754.6	755.7
155°	651.7	669.2	685.6	698.8	709.7	718.5	721.8	721.8
157.5°	636.1	650.8	664.6	675.1	683.4	690.0	692.0	692.0
160°	626.5	638.5	650.5	659.3	665.9	672.5	673.5	673.5
162.5°	616.8	627.2	636.6	644.4	649.2	655.8	657.0	656.0
165°	603.5	610.0	617.7	623.2	627.5	632.0	630.8	629.8
167.5°	590.6	595.6	601.7	605.0	607.2	610.0	609.8	609.0
170°	582.7	586.0	590.3	593.6	595.8	596.9	595.8	595.8
172.5°	575.6	578.1	580.7	583.1	584.4	585.5	584.4	582.7
175°	566.3	567.3	569.5	569.5	569.5	571.7	569.5	567.3
177.5°	560.1	561.0	561.0	561.8	561.0	561.8	560.1	558.4
180°	557.5	557.5	557.5	557.5	557.5	557.5	557.5	557.5

(END OF REPORT)