

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: P332825-830

Luminaire Tested: **S124DIW-S1020D1340U830-4F0-1E-UDD-D**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332825-830
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-6,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124DIW-S1020D1340U830-4F0-1E-UDD-D
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 1340 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 9027.8 lumens
Efficiency: N/A
Efficacy: 129.3 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: General Diffuse

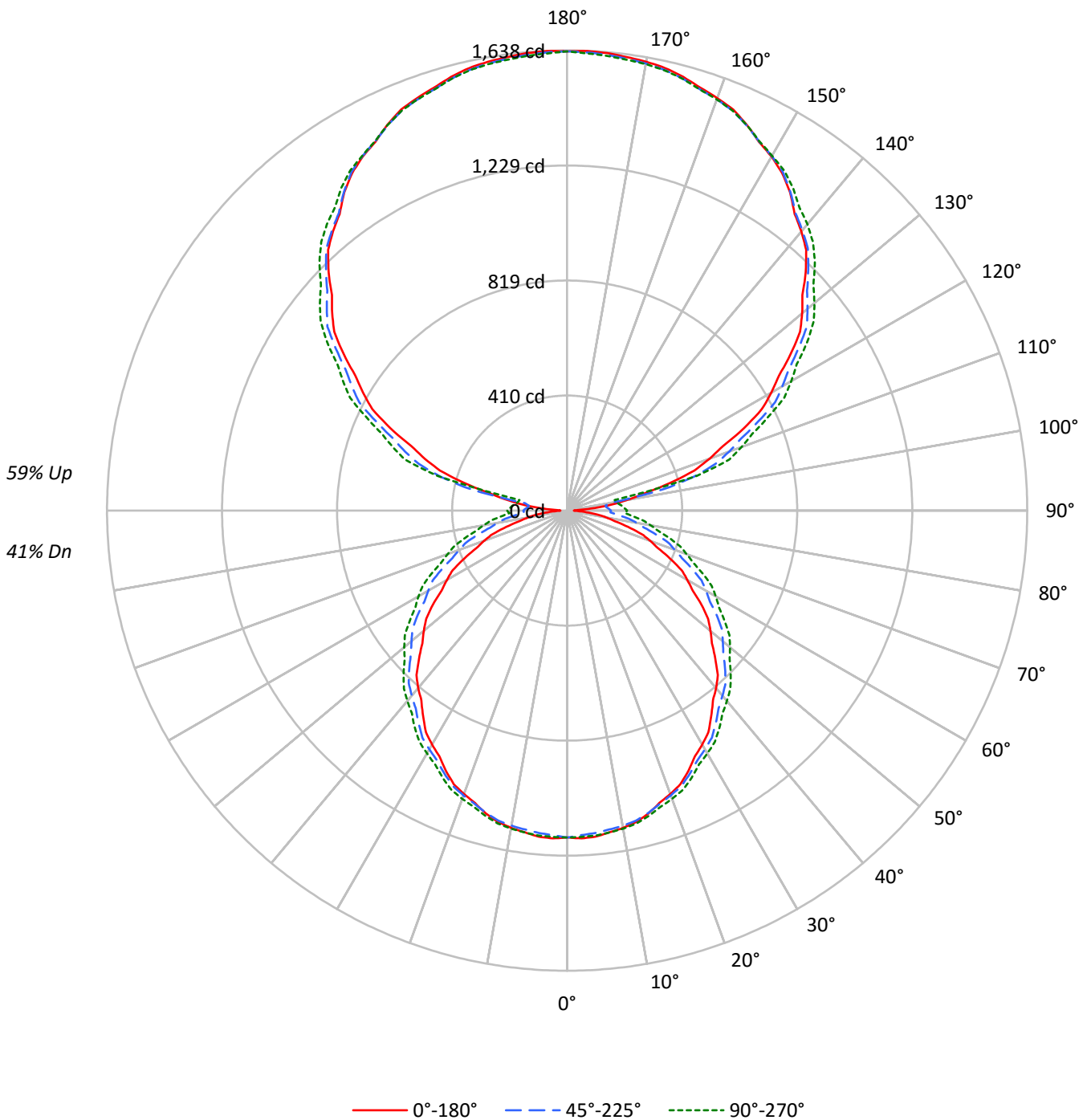
Input Watts (W): 69.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





TEST NUMBER: P332825-830

CATALOG NUMBER: S124DIW-S1020D1340U830-4F0-1E-UDD-D

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	105	105	105	105	96	96	96	96	78	78	78	62	62	62	48	48	48	41
1	95	90	86	82	86	82	79	75	67	65	62	53	52	50	41	40	38	33
2	86	78	72	67	78	71	66	61	58	54	51	46	44	41	35	33	32	27
3	78	68	61	55	71	62	56	51	51	46	42	41	37	34	31	29	27	22
4	71	60	52	46	65	55	48	43	45	40	36	36	32	29	28	25	23	19
5	65	54	45	39	59	49	42	36	40	35	31	32	28	25	25	22	20	16
6	60	48	40	34	54	44	37	31	36	31	27	29	25	22	22	19	17	14
7	55	43	35	29	50	40	32	27	33	27	23	26	22	19	20	17	15	12
8	51	39	31	26	47	36	29	24	30	24	20	24	20	17	19	16	13	11
9	48	36	28	23	43	33	26	21	27	22	18	22	18	15	17	14	12	10
10	45	32	25	20	41	30	23	19	25	20	16	20	16	14	16	13	11	9

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	9395	9395	9395
5°	9424	9182	9208
10°	9366	9032	9024
15°	9282	8858	8809
20°	9156	8666	8599
25°	9013	8450	8368
30°	8859	8237	8131
35°	8684	8018	7924
40°	8544	7809	7708
45°	8336	7617	7522
50°	8161	7395	7326
55°	7979	7187	7096
60°	7697	6921	6885
65°	7387	6635	6628
70°	7013	6309	6327
75°	6486	5950	6056
80°	5904	5605	5788
85°	5170	5301	5633



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	110.2	1.2
10°-20°	315.7	3.5
20°-30°	477.4	5.3
30°-40°	577.6	6.4
40°-50°	610.7	6.8
50°-60°	574.7	6.4
60°-70°	476.8	5.3
70°-80°	334.9	3.7
80°-90°	194.1	2.1
90°-100°	168.3	1.9
100°-110°	439.7	4.9
110°-120°	737.7	8.2
120°-130°	897.1	9.9
130°-140°	939.7	10.4
140°-150°	868.8	9.6
150°-160°	698.4	7.7
160°-170°	450.5	5.0
170°-180°	155.3	1.7
0°-30°	903.4	10.0
0°-40°	1481.0	16.4
0°-60°	2666.4	29.5
0°-90°	3672.3	40.7
90°-120°	1345.7	14.9
90°-150°	4051.4	44.9
90°-180°	5356.0	59.3
0°-180°	9027.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1164	1164	1164	1164	1164	
5°	1165	1161	1152	1162	1161	111
15°	1117	1118	1114	1125	1125	315
25°	1022	1029	1033	1047	1049	470
35°	894	910	923	940	945	560
45°	745	770	795	816	824	576
55°	584	612	650	675	684	520
65°	404	446	490	521	533	400
75°	224	273	327	362	375	238
85°	69	124	182	220	235	74
90°	24	90	156	199	214	17
95°	84	89	140	181	196	100
105°	380	414	467	507	477	398
115°	695	712	751	781	791	684
125°	971	976	1005	1032	1042	867
135°	1201	1200	1214	1236	1247	925
145°	1383	1385	1385	1394	1402	864
155°	1515	1516	1512	1517	1514	698
165°	1598	1592	1592	1600	1590	451
175°	1635	1628	1628	1638	1625	156
180°	1635	1635	1635	1635	1635	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8
2.5°	1167.9	1167.2	1166.5	1165.8	1165.1	1163.9	1162.0	1160.2	1158.3	1156.4	1158.0
5°	1165.0	1164.1	1163.3	1162.4	1161.6	1160.1	1158.1	1156.0	1154.0	1152.0	1154.3
7.5°	1155.1	1154.6	1154.0	1153.6	1153.0	1152.0	1150.3	1148.6	1146.9	1145.2	1147.8
10°	1146.8	1146.5	1146.2	1145.9	1145.7	1144.7	1143.3	1141.9	1140.4	1139.0	1141.6
12.5°	1135.3	1135.3	1135.2	1135.1	1135.1	1134.5	1133.6	1132.6	1131.6	1130.6	1133.0
15°	1116.8	1117.1	1117.4	1117.7	1117.9	1117.7	1116.8	1116.0	1115.0	1114.2	1116.8
17.5°	1091.6	1092.4	1093.3	1094.1	1095.0	1095.3	1095.1	1095.0	1094.9	1094.7	1097.3
20°	1073.8	1074.7	1075.5	1076.4	1077.3	1077.9	1078.2	1078.5	1078.7	1079.0	1081.9
22.5°	1054.0	1055.1	1056.2	1057.3	1058.4	1059.2	1059.7	1060.3	1060.7	1061.3	1064.2
25°	1021.7	1023.4	1025.1	1026.9	1028.6	1029.9	1030.8	1031.7	1032.6	1033.4	1036.6
27.5°	985.7	988.3	990.8	993.3	995.9	997.9	999.2	1000.5	1001.8	1003.1	1006.2
30°	961.8	964.0	966.4	968.7	971.0	973.2	975.2	977.2	979.2	981.3	984.5
32.5°	935.7	938.5	941.2	944.1	946.8	949.3	951.6	953.9	956.1	958.4	962.0
35°	894.0	897.5	900.9	904.4	907.9	911.1	914.0	916.8	919.7	922.7	926.7
37.5°	852.0	856.0	860.0	864.0	868.0	871.8	875.3	878.9	882.6	886.2	890.2
40°	824.9	828.7	832.5	836.2	840.0	843.9	847.9	852.0	856.0	860.1	864.4
42.5°	793.6	797.9	802.1	806.3	810.5	815.0	819.7	824.5	829.2	834.1	838.9
45°	745.4	750.9	756.4	762.0	767.4	772.9	778.4	783.9	789.4	794.9	799.8
47.5°	699.3	704.9	710.6	716.3	722.0	728.0	734.3	740.7	747.2	753.5	758.6
50°	665.9	672.3	678.6	685.0	691.4	697.8	704.2	710.5	716.9	723.2	729.1
52.5°	632.5	638.9	645.3	651.7	658.1	664.9	672.1	679.5	686.7	694.1	699.8
55°	583.8	589.9	596.0	602.1	608.1	615.5	624.2	632.9	641.6	650.3	656.1
57.5°	529.3	536.9	544.4	552.0	559.5	567.5	576.2	584.8	593.4	602.1	609.0
60°	493.9	501.4	509.0	516.5	524.1	532.5	542.2	551.7	561.2	570.8	577.4
62.5°	459.5	467.7	476.0	484.2	492.4	501.2	510.9	520.4	530.0	539.5	546.2
65°	404.0	413.2	422.5	431.8	441.0	450.6	460.4	470.3	480.1	490.0	497.2
67.5°	350.5	360.4	370.2	380.1	389.9	400.1	410.7	421.2	431.8	442.3	449.7
70°	314.1	324.0	333.8	343.6	353.5	363.9	374.8	385.9	396.9	407.9	415.8
72.5°	278.6	288.7	298.8	308.9	319.0	329.8	341.5	353.2	365.0	376.6	384.2
75°	224.1	234.9	245.5	256.3	267.0	278.4	290.6	302.7	314.9	327.1	335.2
77.5°	173.3	184.6	196.0	207.4	218.8	230.7	243.6	256.3	269.0	281.7	289.9
80°	142.0	153.6	165.2	176.8	188.4	200.6	213.3	226.0	238.7	251.5	260.2
82.5°	110.7	122.8	134.9	146.9	158.9	171.4	184.1	196.8	209.6	222.3	231.2
85°	69.1	81.2	93.4	105.6	117.7	130.4	143.4	156.4	169.4	182.5	191.1
87.5°	39.3	51.7	64.1	76.5	89.0	101.7	114.8	128.0	141.1	154.2	163.0
90°	24.5	39.1	53.6	68.2	82.8	97.4	112.1	126.7	141.3	155.9	166.0
92.5°	35.3	45.8	56.4	67.0	77.6	90.2	104.8	119.4	134.0	148.6	158.4
95°	84.2	84.5	84.8	85.1	85.5	91.7	103.9	116.0	128.1	140.3	149.7
97.5°	158.2	172.1	186.2	200.1	214.1	211.8	193.2	174.7	156.1	137.6	145.3
100°	214.8	227.2	239.7	252.1	264.5	257.6	231.4	205.2	179.0	152.8	156.0
102.5°	279.4	289.5	299.7	309.9	320.2	328.3	334.5	340.6	346.9	353.0	310.8
105°	379.8	387.1	394.5	402.0	409.4	419.1	431.2	443.3	455.3	467.4	477.1
107.5°	475.0	480.6	486.2	491.7	497.3	506.1	518.0	530.1	542.1	554.0	562.3
110°	538.6	543.5	548.3	553.2	558.1	566.4	578.2	589.8	601.6	613.4	620.7



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	600.1	605.2	610.2	615.3	620.4	628.1	638.5	648.9	659.4	669.9	676.2
115°	694.8	698.3	701.7	705.1	708.6	714.7	723.8	732.7	741.8	750.7	757.7
117.5°	781.5	784.1	786.7	789.4	792.0	798.0	807.2	816.4	825.7	834.9	840.7
120°	839.1	841.0	843.0	844.9	846.9	852.0	860.1	868.2	876.3	884.4	890.8
122.5°	893.8	894.7	895.5	896.3	897.1	901.7	910.0	918.3	926.6	935.0	941.0
125°	971.0	971.9	972.6	973.4	974.2	978.0	984.7	991.4	998.1	1004.8	1011.1
127.5°	1045.1	1045.1	1045.1	1045.0	1045.0	1048.4	1055.2	1062.1	1068.8	1075.6	1080.7
130°	1091.9	1091.9	1091.9	1091.9	1091.9	1094.6	1100.0	1105.5	1111.0	1116.4	1121.9
132.5°	1136.0	1136.1	1136.3	1136.6	1136.8	1139.3	1144.0	1148.7	1153.5	1158.2	1163.5
135°	1200.7	1200.4	1200.1	1199.9	1199.6	1201.0	1204.1	1207.2	1210.3	1213.5	1218.6
137.5°	1259.1	1259.0	1258.8	1258.6	1258.4	1259.4	1261.6	1263.8	1265.9	1268.1	1272.9
140°	1297.2	1297.5	1297.8	1298.1	1298.3	1298.8	1299.7	1300.5	1301.4	1302.1	1306.7
142.5°	1330.5	1331.3	1332.3	1333.2	1334.2	1334.6	1334.8	1335.0	1335.1	1335.3	1339.2
145°	1382.8	1383.3	1383.8	1384.3	1384.9	1385.2	1385.2	1385.2	1385.2	1385.2	1387.1
147.5°	1424.6	1425.8	1427.0	1428.2	1429.5	1430.0	1429.7	1429.5	1429.2	1428.9	1429.4
150°	1454.9	1455.7	1456.5	1457.3	1458.1	1458.3	1458.1	1457.8	1457.5	1457.3	1457.3
152.5°	1479.3	1480.1	1480.9	1481.7	1482.5	1482.7	1482.2	1481.7	1481.2	1480.7	1481.2
155°	1514.8	1514.9	1515.2	1515.5	1515.8	1515.5	1514.8	1513.9	1513.1	1512.3	1513.3
157.5°	1544.8	1544.6	1544.5	1544.3	1544.2	1543.6	1542.7	1541.7	1540.9	1539.9	1541.3
160°	1562.4	1561.6	1560.8	1559.9	1559.2	1558.6	1558.3	1558.0	1557.7	1557.6	1559.2
162.5°	1578.0	1577.0	1576.0	1575.0	1574.0	1573.3	1573.0	1572.7	1572.4	1572.2	1573.8
165°	1597.9	1596.5	1595.2	1593.7	1592.4	1591.8	1591.8	1591.8	1591.8	1591.8	1593.9
167.5°	1613.5	1612.1	1610.7	1609.3	1607.9	1607.0	1606.9	1606.8	1606.6	1606.4	1608.8
170°	1622.3	1620.7	1619.0	1617.4	1615.8	1615.1	1615.3	1615.6	1615.9	1616.2	1618.3
172.5°	1628.1	1626.5	1624.9	1623.2	1621.6	1621.0	1621.3	1621.6	1621.7	1622.0	1624.2
175°	1634.6	1632.9	1631.3	1629.7	1628.0	1627.3	1627.6	1627.9	1628.1	1628.4	1630.9
177.5°	1637.5	1636.0	1634.4	1632.9	1631.4	1630.8	1631.3	1631.7	1632.1	1632.6	1634.3
180°	1634.6	1634.6	1634.6	1634.6	1634.6	1634.6	1634.6	1634.6	1634.6	1634.6	1634.6



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8
2.5°	1159.7	1161.3	1162.9	1163.6	1163.4	1163.1	1162.9	1162.7
5°	1156.6	1159.0	1161.3	1162.2	1162.0	1161.7	1161.4	1161.1
7.5°	1150.5	1153.0	1155.7	1156.8	1156.5	1156.2	1155.9	1155.7
10°	1144.2	1146.8	1149.4	1150.6	1150.3	1150.0	1149.7	1149.4
12.5°	1135.4	1137.7	1140.1	1141.3	1141.2	1141.1	1141.1	1141.0
15°	1119.5	1122.0	1124.6	1125.8	1125.5	1125.2	1124.9	1124.6
17.5°	1099.9	1102.7	1105.3	1106.5	1106.3	1106.1	1105.8	1105.6
20°	1084.8	1087.7	1090.6	1092.0	1092.0	1092.0	1092.0	1092.0
22.5°	1067.1	1070.0	1072.9	1074.6	1075.1	1075.4	1075.9	1076.4
25°	1039.8	1042.9	1046.1	1047.9	1048.2	1048.5	1048.8	1049.0
27.5°	1009.1	1012.0	1015.0	1016.6	1017.0	1017.4	1017.7	1018.0
30°	987.7	990.8	994.0	995.9	996.5	997.0	997.7	998.2
32.5°	965.6	969.3	973.0	975.1	975.6	976.2	976.8	977.4
35°	930.8	934.8	938.9	941.3	942.2	943.0	944.0	944.8
37.5°	894.4	898.5	902.6	905.1	906.1	907.0	907.9	908.8
40°	868.7	873.1	877.5	880.2	881.4	882.5	883.7	884.9
42.5°	843.7	848.5	853.3	856.1	857.1	858.0	858.9	859.8
45°	804.7	809.7	814.6	817.8	819.3	820.7	822.2	823.6
47.5°	763.6	768.7	773.9	777.3	779.0	780.8	782.5	784.3
50°	734.8	740.6	746.4	750.2	752.0	753.7	755.4	757.1
52.5°	705.7	711.4	717.3	721.0	722.7	724.4	726.2	727.9
55°	661.9	667.7	673.4	677.2	678.9	680.7	682.4	684.2
57.5°	615.9	622.7	629.6	633.9	635.5	637.2	638.8	640.4
60°	584.1	590.8	597.4	601.9	604.3	606.5	608.9	611.1
62.5°	552.8	559.5	566.2	570.6	573.0	575.2	577.6	579.9
65°	504.4	511.7	519.0	523.8	526.0	528.4	530.7	533.0
67.5°	457.0	464.4	471.7	476.5	478.8	481.1	483.3	485.6
70°	423.5	431.3	439.1	444.1	446.1	448.2	450.2	452.2
72.5°	391.8	399.4	407.0	411.9	414.2	416.4	418.7	420.9
75°	343.3	351.4	359.5	364.9	367.5	370.1	372.7	375.3
77.5°	298.2	306.4	314.6	320.2	322.9	325.7	328.5	331.3
80°	268.9	277.6	286.3	291.7	294.1	296.4	298.7	301.0
82.5°	240.2	249.1	258.0	263.7	266.3	268.8	271.4	273.9
85°	199.8	208.5	217.2	223.0	225.9	228.8	231.7	234.6
87.5°	171.6	180.4	189.1	194.8	197.5	200.1	202.7	205.4
90°	176.0	186.0	196.0	202.5	205.3	208.2	211.0	213.9
92.5°	168.2	178.0	187.8	194.0	196.4	198.8	201.2	203.7
95°	159.2	168.6	178.0	184.3	187.1	190.0	192.8	195.8
97.5°	153.1	160.8	168.5	173.8	176.6	179.4	182.1	184.8
100°	159.2	162.4	165.6	168.3	170.7	173.0	175.3	177.6
102.5°	268.5	226.3	184.1	164.1	166.4	168.7	171.1	173.3
105°	486.8	496.5	506.1	507.3	499.8	492.4	484.9	477.4
107.5°	570.6	579.0	587.3	593.0	596.2	599.3	602.4	605.5
110°	627.8	635.0	642.2	647.4	650.5	653.7	656.8	660.0



TEST NUMBER: P332825-830

CATALOG NUMBER: S124DIW-S1020D1340U830-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	682.5	688.8	695.1	699.9	703.3	706.6	710.0	713.3
115°	764.6	771.5	778.4	782.9	784.9	786.9	789.0	791.0
117.5°	846.7	852.6	858.6	862.6	864.8	867.0	869.2	871.4
120°	897.1	903.4	909.7	913.8	915.6	917.4	919.2	921.0
122.5°	947.2	953.3	959.4	963.3	964.8	966.4	967.9	969.4
125°	1017.4	1023.7	1030.0	1034.2	1036.1	1038.2	1040.2	1042.2
127.5°	1085.7	1090.8	1095.8	1099.3	1101.0	1102.8	1104.5	1106.3
130°	1127.4	1132.8	1138.3	1142.0	1143.7	1145.4	1147.2	1148.9
132.5°	1168.7	1173.9	1179.2	1182.6	1184.1	1185.6	1187.1	1188.6
135°	1223.8	1229.0	1234.2	1237.9	1240.2	1242.5	1244.7	1247.1
137.5°	1277.8	1282.6	1287.4	1290.4	1291.8	1293.1	1294.3	1295.6
140°	1311.4	1315.9	1320.5	1323.6	1325.3	1327.1	1328.8	1330.5
142.5°	1343.1	1347.0	1350.9	1353.5	1354.7	1356.0	1357.3	1358.6
145°	1389.1	1391.2	1393.2	1395.1	1396.8	1398.5	1400.1	1401.8
147.5°	1429.8	1430.2	1430.7	1431.5	1432.8	1433.9	1435.1	1436.3
150°	1457.3	1457.3	1457.3	1457.4	1457.6	1457.9	1458.2	1458.5
152.5°	1481.6	1482.1	1482.4	1482.6	1482.4	1482.2	1482.1	1482.0
155°	1514.5	1515.5	1516.6	1516.7	1516.0	1515.1	1514.3	1513.5
157.5°	1542.8	1544.2	1545.6	1545.6	1544.2	1542.8	1541.3	1539.9
160°	1560.8	1562.4	1564.1	1564.1	1562.4	1560.8	1559.2	1557.6
162.5°	1575.5	1577.1	1578.7	1578.6	1576.8	1574.9	1573.0	1571.2
165°	1596.1	1598.3	1600.4	1600.2	1597.9	1595.4	1593.0	1590.5
167.5°	1611.2	1613.5	1616.0	1615.8	1613.1	1610.3	1607.7	1605.0
170°	1620.5	1622.7	1624.8	1624.6	1621.9	1619.2	1616.5	1613.7
172.5°	1626.4	1628.6	1630.8	1630.4	1627.4	1624.5	1621.6	1618.6
175°	1633.3	1635.8	1638.2	1637.8	1634.6	1631.3	1628.0	1624.8
177.5°	1636.1	1637.8	1639.6	1639.1	1636.4	1633.9	1631.3	1628.6
180°	1634.6	1634.6	1634.6	1634.6	1634.6	1634.6	1634.6	1634.6

(END OF REPORT)