

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: P332861-930

Luminaire Tested: **S124DIW-S1195D1560U930-4F0-1E-UDD-D**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332861-930  
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-S1195D1560U930-4F0-1E-UDD-D  
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 1195 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 1560 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 9052.7 lumens  
Efficiency: N/A  
Efficacy: 109.2 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

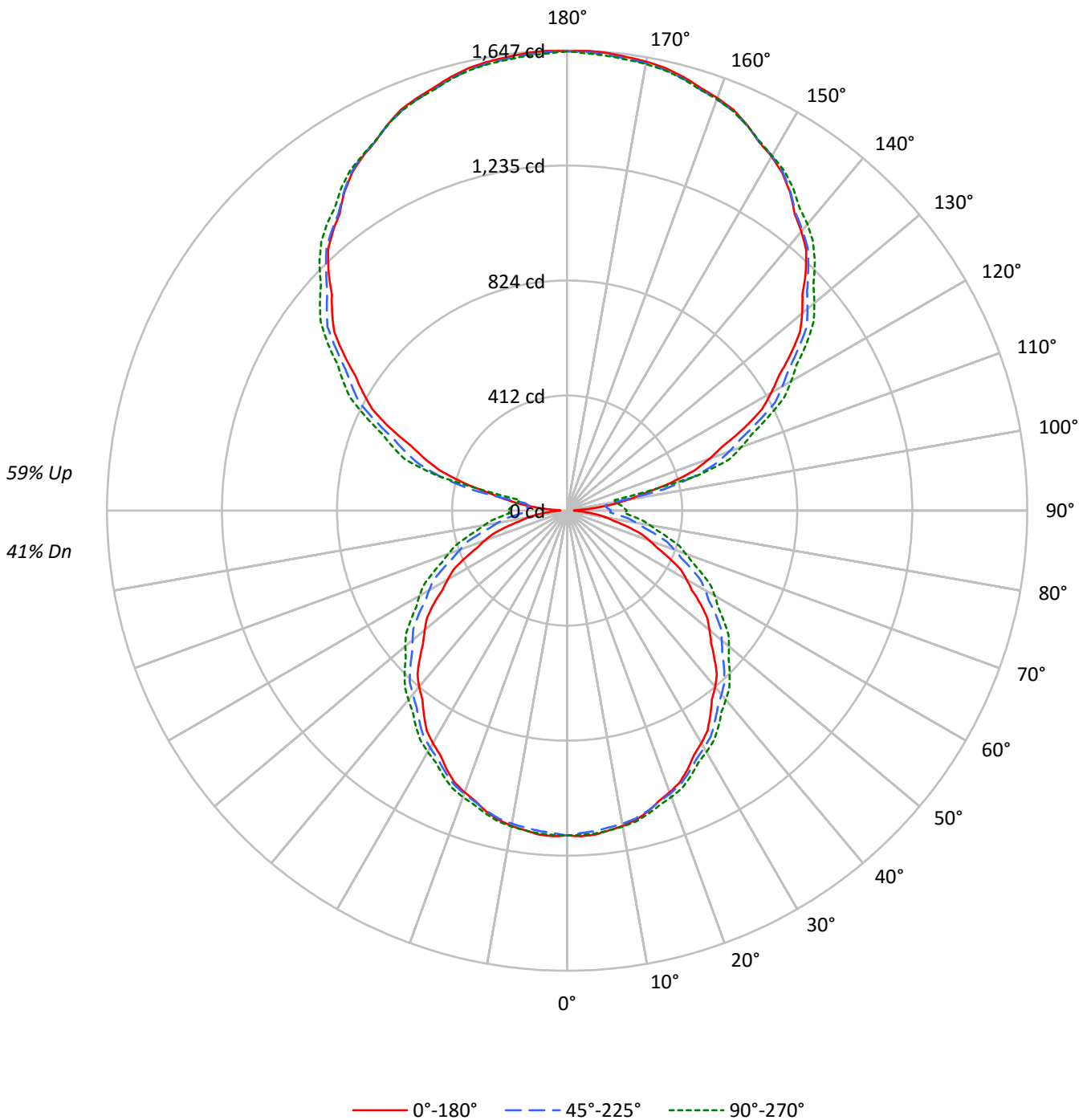
Input Watts (W): 82.9  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	105	105	105	105	96	96	96	96	78	78	78	62	62	62	47	47	47	41
1	95	90	86	82	86	82	79	75	67	65	62	53	52	50	41	39	38	32
2	86	78	72	67	78	71	66	61	58	54	51	46	43	41	35	33	32	26
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	27	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	39	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	40	30	23	19	25	20	16	20	16	14	16	13	11	9

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	9386	9386	9386
5°	9414	9173	9199
10°	9357	9022	9016
15°	9273	8849	8800
20°	9147	8658	8591
25°	9004	8442	8360
30°	8849	8228	8124
35°	8675	8010	7917
40°	8536	7801	7700
45°	8329	7610	7515
50°	8153	7388	7319
55°	7973	7179	7089
60°	7689	6913	6880
65°	7380	6628	6622
70°	7004	6302	6322
75°	6483	5945	6051
80°	5900	5600	5784
85°	5162	5295	5626



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	110.1	1.2
10°-20°	315.4	3.5
20°-30°	477.0	5.3
30°-40°	577.1	6.4
40°-50°	610.1	6.7
50°-60°	574.2	6.3
60°-70°	476.4	5.3
70°-80°	334.6	3.7
80°-90°	193.9	2.1
90°-100°	168.5	1.9
100°-110°	441.6	4.9
110°-120°	741.6	8.2
120°-130°	902.0	10.0
130°-140°	945.0	10.4
140°-150°	873.7	9.7
150°-160°	702.4	7.8
160°-170°	453.0	5.0
170°-180°	156.1	1.7
0°-30°	902.5	10.0
0°-40°	1479.6	16.3
0°-60°	2663.8	29.4
0°-90°	3668.7	40.5
90°-120°	1351.7	14.9
90°-150°	4072.5	45.0
90°-180°	5384.0	59.5
0°-180°	9052.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1163	1163	1163	1163	1163	
5°	1164	1160	1151	1161	1160	110
15°	1116	1117	1113	1124	1124	314
25°	1021	1028	1032	1046	1048	470
35°	893	908	922	939	944	559
45°	745	769	794	815	823	575
55°	583	611	650	675	684	520
65°	404	445	490	521	532	400
75°	224	272	327	362	375	238
85°	69	124	182	220	234	73
90°	24	90	156	199	214	17
95°	84	89	140	181	196	100
105°	382	416	470	509	479	400
115°	699	716	755	785	795	688
125°	976	982	1010	1038	1048	872
135°	1208	1207	1220	1243	1254	930
145°	1391	1393	1393	1402	1410	869
155°	1523	1524	1521	1525	1522	702
165°	1607	1601	1601	1610	1600	454
175°	1644	1637	1638	1647	1634	156
180°	1644	1644	1644	1644	1644	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1162.6	1162.6	1162.6	1162.6	1162.6	1162.6	1162.6	1162.6	1162.6	1162.6	1162.6
2.5°	1166.8	1166.0	1165.4	1164.7	1164.0	1162.7	1160.8	1159.0	1157.2	1155.3	1156.9
5°	1163.8	1163.0	1162.1	1161.3	1160.4	1158.9	1156.9	1154.9	1152.9	1150.9	1153.2
7.5°	1154.0	1153.5	1152.9	1152.4	1151.9	1150.8	1149.2	1147.5	1145.7	1144.1	1146.7
10°	1145.7	1145.3	1145.1	1144.8	1144.5	1143.6	1142.2	1140.8	1139.3	1137.8	1140.4
12.5°	1134.2	1134.2	1134.1	1134.0	1134.0	1133.4	1132.5	1131.5	1130.5	1129.5	1131.9
15°	1115.7	1116.0	1116.3	1116.6	1116.9	1116.6	1115.7	1114.8	1113.9	1113.1	1115.7
17.5°	1090.5	1091.4	1092.2	1093.1	1093.9	1094.3	1094.1	1093.9	1093.7	1093.6	1096.3
20°	1072.8	1073.6	1074.5	1075.4	1076.2	1076.8	1077.1	1077.4	1077.7	1078.0	1080.8
22.5°	1053.0	1054.0	1055.2	1056.2	1057.4	1058.2	1058.7	1059.2	1059.7	1060.2	1063.2
25°	1020.7	1022.4	1024.2	1025.9	1027.6	1028.9	1029.8	1030.6	1031.5	1032.4	1035.6
27.5°	984.7	987.3	989.9	992.4	994.9	996.9	998.2	999.6	1000.9	1002.2	1005.1
30°	960.7	963.1	965.4	967.8	970.0	972.2	974.2	976.2	978.3	980.3	983.5
32.5°	934.7	937.5	940.3	943.1	945.8	948.4	950.6	952.9	955.1	957.4	961.1
35°	893.1	896.6	900.0	903.5	906.9	910.1	913.1	915.9	918.8	921.7	925.8
37.5°	851.2	855.2	859.2	863.2	867.2	870.9	874.5	878.1	881.7	885.3	889.4
40°	824.1	827.9	831.6	835.4	839.1	843.0	847.1	851.2	855.2	859.2	863.6
42.5°	792.9	797.0	801.3	805.5	809.8	814.2	819.0	823.7	828.4	833.2	838.0
45°	744.7	750.2	755.7	761.2	766.6	772.2	777.6	783.2	788.6	794.2	799.1
47.5°	698.5	704.3	710.0	715.6	721.3	727.3	733.7	740.0	746.4	752.8	757.8
50°	665.3	671.6	678.0	684.4	690.7	697.1	703.4	709.8	716.2	722.5	728.3
52.5°	631.9	638.3	644.7	651.0	657.4	664.2	671.5	678.8	686.1	693.4	699.2
55°	583.3	589.3	595.4	601.4	607.6	614.9	623.6	632.3	641.0	649.6	655.4
57.5°	528.8	536.4	543.9	551.4	558.9	567.0	575.6	584.2	592.9	601.4	608.4
60°	493.4	500.9	508.4	516.0	523.5	532.1	541.6	551.1	560.7	570.2	576.9
62.5°	459.0	467.2	475.5	483.7	491.9	500.8	510.4	519.9	529.5	539.0	545.6
65°	403.6	412.9	422.1	431.4	440.6	450.1	460.0	469.9	479.6	489.5	496.8
67.5°	350.2	360.0	369.9	379.7	389.6	399.7	410.3	420.8	431.3	441.9	449.2
70°	313.7	323.6	333.5	343.2	353.1	363.5	374.5	385.5	396.5	407.5	415.3
72.5°	278.3	288.4	298.5	308.5	318.6	329.5	341.2	352.9	364.5	376.3	383.8
75°	224.0	234.6	245.3	256.0	266.8	278.2	290.3	302.5	314.6	326.8	334.8
77.5°	173.2	184.5	195.8	207.2	218.5	230.6	243.3	256.0	268.7	281.4	289.7
80°	141.9	153.4	165.0	176.6	188.2	200.3	213.0	225.8	238.6	251.3	259.9
82.5°	110.6	122.7	134.8	146.8	158.8	171.2	183.9	196.7	209.4	222.1	231.0
85°	69.0	81.1	93.3	105.4	117.6	130.2	143.2	156.2	169.3	182.3	190.9
87.5°	39.3	51.7	64.1	76.5	88.9	101.7	114.8	127.8	141.0	154.1	162.8
90°	24.5	39.1	53.6	68.2	82.8	97.4	112.0	126.7	141.3	156.0	166.0
92.5°	35.3	45.8	56.4	67.0	77.6	90.2	104.8	119.4	134.1	148.7	158.5
95°	84.5	84.8	85.0	85.3	85.6	91.8	103.9	116.0	128.2	140.3	149.8
97.5°	159.0	173.0	186.9	201.0	215.0	212.6	193.9	175.1	156.4	137.6	145.4
100°	216.0	228.4	240.8	253.3	265.7	258.7	232.3	205.9	179.4	153.0	156.2
102.5°	280.9	291.1	301.3	311.5	321.7	329.9	336.0	342.1	348.3	354.4	311.9
105°	381.8	389.2	396.6	404.1	411.5	421.3	433.3	445.4	457.5	469.5	479.2
107.5°	477.7	483.2	488.9	494.4	499.9	508.7	520.7	532.7	544.7	556.7	565.0
110°	541.5	546.4	551.3	556.2	561.0	569.3	581.1	592.9	604.6	616.4	623.6



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	603.5	608.5	613.6	618.6	623.7	631.4	641.9	652.3	662.8	673.2	679.5
115°	698.8	702.2	705.6	709.1	712.5	718.7	727.7	736.6	745.7	754.6	761.6
117.5°	785.9	788.5	791.2	793.8	796.5	802.4	811.6	820.8	830.1	839.3	845.2
120°	843.8	845.8	847.7	849.7	851.7	856.7	864.8	872.9	881.0	889.2	895.4
122.5°	898.9	899.7	900.6	901.4	902.2	906.8	915.1	923.4	931.7	940.0	946.2
125°	976.5	977.3	978.1	978.9	979.7	983.5	990.2	996.9	1003.6	1010.2	1016.5
127.5°	1051.0	1051.0	1051.0	1050.9	1050.9	1054.3	1061.2	1068.0	1074.8	1081.6	1086.6
130°	1098.1	1098.1	1098.1	1098.1	1098.1	1100.8	1106.3	1111.7	1117.1	1122.6	1128.1
132.5°	1142.4	1142.6	1142.8	1143.0	1143.2	1145.7	1150.5	1155.2	1159.9	1164.7	1170.0
135°	1207.5	1207.2	1207.0	1206.7	1206.4	1207.9	1211.0	1214.1	1217.2	1220.3	1225.5
137.5°	1266.3	1266.1	1265.9	1265.8	1265.6	1266.6	1268.8	1271.0	1273.1	1275.3	1280.1
140°	1304.6	1304.9	1305.1	1305.5	1305.7	1306.2	1307.1	1307.9	1308.7	1309.5	1314.2
142.5°	1338.1	1339.0	1339.9	1340.8	1341.7	1342.3	1342.4	1342.6	1342.7	1342.9	1346.8
145°	1390.7	1391.1	1391.7	1392.2	1392.8	1393.0	1393.0	1393.0	1393.0	1393.0	1395.1
147.5°	1432.7	1433.9	1435.2	1436.4	1437.6	1438.1	1437.9	1437.6	1437.3	1437.0	1437.5
150°	1463.2	1464.0	1464.8	1465.6	1466.4	1466.6	1466.4	1466.2	1465.8	1465.6	1465.6
152.5°	1487.7	1488.5	1489.3	1490.1	1491.0	1491.2	1490.6	1490.1	1489.6	1489.1	1489.6
155°	1523.4	1523.6	1523.9	1524.2	1524.4	1524.2	1523.4	1522.6	1521.8	1520.9	1522.0
157.5°	1553.6	1553.5	1553.3	1553.1	1553.0	1552.4	1551.4	1550.5	1549.6	1548.7	1550.1
160°	1571.3	1570.5	1569.7	1568.9	1568.1	1567.5	1567.2	1566.9	1566.7	1566.4	1568.1
162.5°	1587.1	1586.0	1584.9	1584.0	1582.9	1582.3	1581.9	1581.7	1581.4	1581.1	1582.7
165°	1607.0	1605.6	1604.3	1602.9	1601.5	1600.8	1600.8	1600.8	1600.8	1600.8	1603.0
167.5°	1622.7	1621.3	1619.8	1618.5	1617.0	1616.2	1616.1	1615.9	1615.8	1615.6	1618.0
170°	1631.6	1629.9	1628.2	1626.6	1625.0	1624.3	1624.6	1624.9	1625.1	1625.4	1627.6
172.5°	1637.4	1635.8	1634.2	1632.6	1630.9	1630.2	1630.5	1630.8	1631.0	1631.3	1633.5
175°	1643.8	1642.2	1640.5	1638.9	1637.3	1636.6	1636.9	1637.1	1637.4	1637.7	1640.1
177.5°	1646.8	1645.3	1643.7	1642.2	1640.7	1640.1	1640.5	1641.0	1641.4	1641.8	1643.6
180°	1643.8	1643.8	1643.8	1643.8	1643.8	1643.8	1643.8	1643.8	1643.8	1643.8	1643.8



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1162.6	1162.6	1162.6	1162.6	1162.6	1162.6	1162.6	1162.6
2.5°	1158.5	1160.2	1161.8	1162.5	1162.2	1162.0	1161.8	1161.6
5°	1155.5	1157.8	1160.1	1161.1	1160.8	1160.6	1160.3	1160.0
7.5°	1149.3	1151.9	1154.5	1155.7	1155.4	1155.1	1154.8	1154.5
10°	1143.0	1145.7	1148.3	1149.4	1149.2	1148.8	1148.5	1148.3
12.5°	1134.2	1136.6	1139.0	1140.2	1140.1	1140.0	1140.0	1140.0
15°	1118.3	1121.0	1123.5	1124.7	1124.4	1124.1	1123.8	1123.5
17.5°	1098.9	1101.6	1104.2	1105.5	1105.2	1105.0	1104.7	1104.5
20°	1083.8	1086.6	1089.6	1091.0	1091.0	1091.0	1091.0	1091.0
22.5°	1066.0	1068.9	1071.8	1073.5	1074.0	1074.4	1074.9	1075.4
25°	1038.8	1042.0	1045.1	1046.8	1047.2	1047.4	1047.7	1048.0
27.5°	1008.1	1011.1	1014.0	1015.6	1016.0	1016.4	1016.7	1017.0
30°	986.7	989.9	993.0	994.9	995.5	996.1	996.6	997.3
32.5°	964.7	968.3	972.0	974.1	974.7	975.3	975.8	976.4
35°	929.8	933.8	937.9	940.4	941.3	942.2	943.0	943.9
37.5°	893.5	897.6	901.7	904.2	905.1	906.0	907.0	907.9
40°	867.9	872.3	876.6	879.4	880.5	881.7	882.8	883.9
42.5°	842.8	847.6	852.4	855.2	856.2	857.1	858.0	859.0
45°	804.0	808.9	813.8	817.0	818.5	819.9	821.3	822.8
47.5°	763.0	768.0	773.1	776.5	778.3	780.0	781.7	783.5
50°	734.1	739.9	745.7	749.4	751.2	752.9	754.6	756.4
52.5°	705.0	710.8	716.5	720.3	722.0	723.7	725.5	727.2
55°	661.2	667.0	672.8	676.5	678.2	680.0	681.8	683.5
57.5°	615.2	622.2	629.0	633.2	634.9	636.5	638.1	639.8
60°	583.5	590.2	596.8	601.3	603.6	605.9	608.3	610.6
62.5°	552.3	559.0	565.6	570.1	572.4	574.7	577.0	579.4
65°	503.9	511.2	518.4	523.2	525.5	527.8	530.2	532.5
67.5°	456.6	463.9	471.2	476.1	478.3	480.5	482.8	485.1
70°	423.1	430.9	438.7	443.7	445.6	447.7	449.7	451.8
72.5°	391.4	399.0	406.6	411.5	413.8	416.0	418.2	420.5
75°	343.0	351.1	359.1	364.5	367.1	369.7	372.3	375.0
77.5°	297.9	306.1	314.3	319.8	322.6	325.4	328.2	330.9
80°	268.6	277.3	286.0	291.5	293.8	296.1	298.4	300.8
82.5°	239.9	248.8	257.7	263.5	266.0	268.6	271.1	273.6
85°	199.6	208.3	217.0	222.7	225.7	228.5	231.5	234.3
87.5°	171.5	180.3	189.0	194.6	197.3	200.0	202.6	205.3
90°	176.0	186.1	196.1	202.5	205.4	208.2	211.1	213.9
92.5°	168.3	178.1	187.9	194.0	196.4	198.9	201.3	203.7
95°	159.2	168.7	178.1	184.3	187.2	190.0	192.9	195.8
97.5°	153.1	160.9	168.6	173.9	176.7	179.4	182.1	184.9
100°	159.4	162.6	165.7	168.4	170.7	173.0	175.4	177.7
102.5°	269.3	226.8	184.3	164.2	166.5	168.8	171.1	173.4
105°	488.9	498.6	508.3	509.4	501.9	494.3	486.8	479.3
107.5°	573.3	581.6	590.0	595.7	598.8	601.9	605.0	608.1
110°	630.8	638.1	645.2	650.4	653.5	656.6	659.8	662.9





TEST NUMBER: P332861-930

CATALOG NUMBER: S124DIW-S1195D1560U930-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	685.8	692.1	698.5	703.3	706.6	710.0	713.3	716.6
115°	768.4	775.3	782.3	786.8	788.8	790.8	792.8	794.8
117.5°	851.1	857.0	862.9	867.0	869.2	871.4	873.6	875.8
120°	901.8	908.2	914.4	918.5	920.3	922.1	923.8	925.6
122.5°	952.3	958.4	964.5	968.2	969.8	971.3	972.9	974.4
125°	1022.9	1029.2	1035.5	1039.7	1041.6	1043.7	1045.7	1047.7
127.5°	1091.7	1096.7	1101.8	1105.1	1106.9	1108.6	1110.4	1112.1
130°	1133.6	1139.1	1144.5	1148.1	1149.9	1151.6	1153.3	1155.1
132.5°	1175.2	1180.4	1185.7	1189.0	1190.6	1192.0	1193.6	1195.1
135°	1230.7	1235.8	1241.0	1244.7	1247.0	1249.3	1251.6	1253.8
137.5°	1285.0	1289.8	1294.6	1297.6	1298.9	1300.2	1301.5	1302.8
140°	1318.7	1323.3	1327.9	1331.1	1332.8	1334.5	1336.2	1337.9
142.5°	1350.7	1354.6	1358.5	1361.1	1362.4	1363.6	1364.9	1366.1
145°	1397.0	1399.1	1401.1	1402.9	1404.6	1406.3	1408.0	1409.7
147.5°	1437.9	1438.4	1438.8	1439.7	1440.9	1442.1	1443.2	1444.5
150°	1465.6	1465.6	1465.6	1465.7	1466.0	1466.2	1466.6	1466.8
152.5°	1490.0	1490.4	1490.9	1491.0	1490.9	1490.7	1490.5	1490.4
155°	1523.1	1524.2	1525.3	1525.4	1524.6	1523.8	1523.0	1522.2
157.5°	1551.5	1553.0	1554.4	1554.4	1553.0	1551.5	1550.1	1548.7
160°	1569.7	1571.3	1573.0	1573.0	1571.3	1569.7	1568.1	1566.4
162.5°	1584.5	1586.1	1587.7	1587.6	1585.8	1583.9	1582.0	1580.1
165°	1605.2	1607.4	1609.6	1609.4	1607.0	1604.5	1602.1	1599.6
167.5°	1620.4	1622.8	1625.2	1625.1	1622.3	1619.6	1616.8	1614.1
170°	1629.8	1632.0	1634.2	1633.9	1631.2	1628.4	1625.7	1622.9
172.5°	1635.7	1637.9	1640.1	1639.6	1636.7	1633.8	1630.8	1627.8
175°	1642.6	1645.1	1647.6	1647.1	1643.8	1640.5	1637.3	1634.0
177.5°	1645.4	1647.1	1648.9	1648.5	1645.8	1643.2	1640.5	1637.9
180°	1643.8	1643.8	1643.8	1643.8	1643.8	1643.8	1643.8	1643.8

(END OF REPORT)