

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: P332773-935

Luminaire Tested: **S124DIW-S575D1560U935-4F0-1E-UDD-F**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332773-935  
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-S575D1560U935-4F0-1E-UDD-F  
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 575 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
UPLIGHT 1560 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 7520.7 lumens  
Efficiency: N/A  
Efficacy: 124.1 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: Semi-Indirect

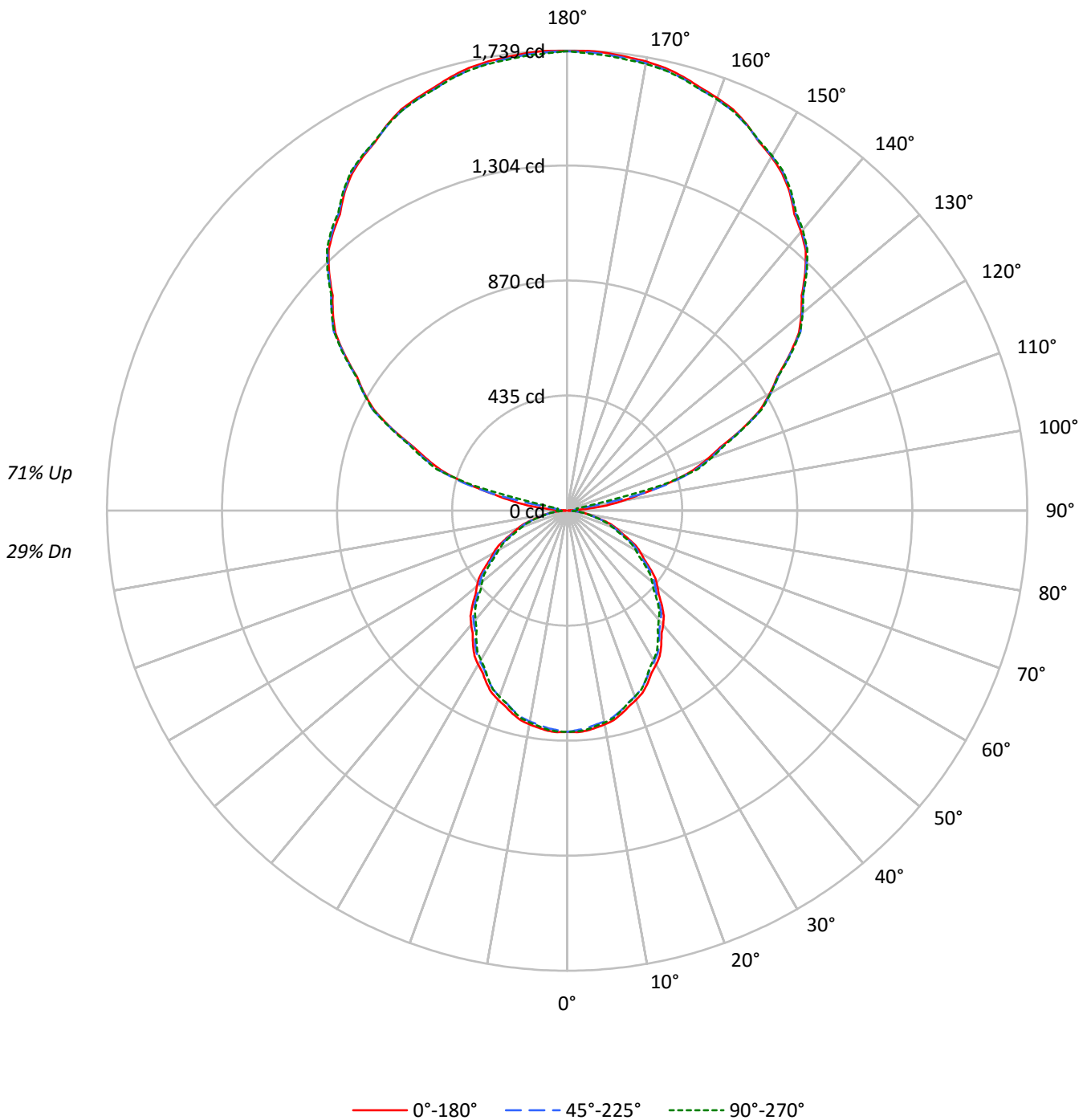
Input Watts (W): 60.6  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	102	102	102	102	91	91	91	91	71	71	71	53	53	53	36	36	36	29
1	93	89	85	82	83	80	76	74	62	60	58	47	45	44	32	31	31	24
2	85	77	72	67	75	70	65	60	55	51	48	41	39	37	28	27	26	20
3	77	68	61	55	69	61	55	50	48	44	40	36	33	31	25	23	22	17
4	70	60	52	47	63	54	48	43	43	38	34	32	29	27	22	20	19	15
5	65	53	46	40	58	48	41	36	38	33	30	29	25	23	20	18	16	13
6	59	48	40	34	53	43	36	31	34	29	26	26	23	20	18	16	14	11
7	55	43	35	30	49	39	32	27	31	26	22	24	20	18	17	14	13	10
8	51	39	31	26	45	35	29	24	28	23	20	21	18	16	15	13	11	9
9	47	35	28	23	42	32	26	21	26	21	18	20	16	14	14	12	10	8
10	44	32	25	21	39	29	23	19	24	19	16	18	15	13	13	11	9	7

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

	0°	45°	90°
0°	6750	6750	6750
5°	6771	6689	6738
10°	6728	6634	6668
15°	6647	6541	6557
20°	6539	6424	6430
25°	6415	6290	6272
30°	6264	6134	6077
35°	6107	5969	5889
40°	5945	5782	5676
45°	5775	5599	5492
50°	5588	5436	5267
55°	5384	5225	5054
60°	5181	4986	4836
65°	4951	4762	4569
70°	4697	4459	4286
75°	4304	4095	3989
80°	3831	3673	3584
85°	3353	3233	3168



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	78.7	1.0
10°-20°	221.9	3.0
20°-30°	326.6	4.3
30°-40°	379.6	5.0
40°-50°	379.6	5.0
50°-60°	332.1	4.4
60°-70°	246.6	3.3
70°-80°	140.1	1.9
80°-90°	45.5	0.6
90°-100°	59.4	0.8
100°-110°	378.6	5.0
110°-120°	724.2	9.6
120°-130°	919.3	12.2
130°-140°	983.6	13.1
140°-150°	919.8	12.2
150°-160°	741.8	9.9
160°-170°	478.4	6.4
170°-180°	164.9	2.2
0°-30°	627.2	8.3
0°-40°	1006.8	13.4
0°-60°	1718.5	22.9
0°-90°	2150.7	28.6
90°-120°	1162.1	15.5
90°-150°	3984.9	53.0
90°-180°	5370.0	71.4
0°-180°	7520.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	836	836	836	836	836	
5°	836	833	825	832	832	79
15°	795	792	783	786	784	224
25°	720	715	706	707	704	331
35°	620	615	606	601	598	387
45°	506	501	490	483	481	390
55°	382	380	371	363	359	343
65°	259	256	249	243	239	257
75°	138	135	131	129	128	147
85°	36	36	35	35	34	40
90°	4	18	29	36	39	5
95°	71	30	29	36	38	92
105°	391	399	405	414	370	409
115°	730	733	732	735	735	718
125°	1026	1030	1028	1032	1034	915
135°	1272	1272	1276	1279	1282	980
145°	1467	1471	1471	1472	1475	916
155°	1609	1610	1606	1611	1608	741
165°	1697	1691	1691	1700	1689	479
175°	1736	1729	1730	1740	1726	165
180°	1736	1736	1736	1736	1736	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	836.1	836.1	836.1	836.1	836.1	836.1	836.1	836.1	836.1	836.1	836.1
2.5°	838.3	837.9	837.6	837.2	836.9	836.0	834.7	833.4	832.1	830.8	832.0
5°	835.5	834.9	834.3	833.7	833.1	832.0	830.3	828.7	827.1	825.4	827.1
7.5°	827.7	827.1	826.6	826.0	825.4	824.1	822.3	820.5	818.6	816.8	818.2
10°	820.7	820.2	819.6	819.0	818.4	817.1	815.2	813.2	811.3	809.3	810.5
12.5°	811.7	811.1	810.5	809.9	809.3	808.0	805.9	803.8	801.8	799.7	801.0
15°	795.3	794.7	794.1	793.5	792.9	791.5	789.3	787.0	784.8	782.6	783.4
17.5°	775.6	774.8	774.1	773.4	772.6	771.2	769.0	767.0	764.8	762.8	763.3
20°	761.1	760.3	759.7	758.9	758.1	756.6	754.4	752.2	749.9	747.7	748.1
22.5°	745.5	744.6	743.6	742.6	741.7	740.0	737.8	735.6	733.3	731.1	731.9
25°	720.2	719.2	718.2	717.1	716.1	714.5	712.4	710.3	708.3	706.2	706.4
27.5°	691.3	690.3	689.1	688.1	687.0	685.5	683.5	681.7	679.7	677.8	677.4
30°	672.0	670.8	669.6	668.4	667.3	665.6	663.7	661.8	659.9	658.0	657.4
32.5°	651.6	650.6	649.5	648.4	647.4	645.8	643.8	641.7	639.6	637.6	636.9
35°	619.7	618.7	617.7	616.6	615.6	614.0	611.9	609.8	607.8	605.7	604.6
37.5°	586.1	585.1	584.2	583.2	582.3	580.7	578.5	576.3	574.0	571.8	570.7
40°	564.1	562.9	561.7	560.6	559.4	557.7	555.4	553.2	551.0	548.7	547.3
42.5°	540.5	539.8	539.2	538.4	537.7	536.1	533.6	531.2	528.7	526.2	524.5
45°	505.8	504.8	503.8	502.7	501.7	500.0	497.6	495.2	492.8	490.4	488.8
47.5°	469.5	468.8	468.1	467.4	466.7	465.2	463.0	460.8	458.6	456.4	454.5
50°	444.9	444.3	443.7	443.1	442.5	441.2	439.1	437.0	434.9	432.8	430.8
52.5°	420.8	420.1	419.3	418.6	417.9	416.5	414.2	412.1	409.8	407.6	405.8
55°	382.5	382.1	381.7	381.3	380.8	379.5	377.5	375.3	373.2	371.2	369.4
57.5°	346.1	345.6	345.1	344.6	344.1	342.9	340.8	338.7	336.7	334.6	332.9
60°	320.9	320.2	319.4	318.7	318.0	316.6	314.7	312.7	310.8	308.8	307.5
62.5°	296.3	295.7	295.0	294.4	293.8	292.4	290.4	288.3	286.3	284.2	283.0
65°	259.2	258.6	257.8	257.1	256.3	255.2	253.7	252.2	250.7	249.3	247.7
67.5°	222.1	221.4	220.7	220.0	219.3	218.3	216.8	215.4	214.0	212.5	211.1
70°	199.0	197.9	196.9	195.9	194.8	193.7	192.5	191.3	190.1	188.9	187.8
72.5°	174.4	173.3	172.3	171.2	170.1	169.2	168.2	167.3	166.3	165.3	164.4
75°	138.0	137.2	136.6	135.8	135.0	134.3	133.5	132.8	132.1	131.3	130.7
77.5°	103.3	103.0	102.6	102.4	102.0	101.5	100.8	100.2	99.5	98.9	98.7
80°	82.4	82.0	81.5	81.1	80.6	80.2	80.0	79.6	79.4	79.0	78.8
82.5°	62.1	61.8	61.6	61.4	61.2	61.0	61.0	61.0	60.9	60.9	60.6
85°	36.2	36.2	36.2	36.2	36.2	36.0	35.7	35.5	35.1	34.9	34.9
87.5°	14.7	15.2	15.8	16.3	16.8	17.2	17.6	17.9	18.3	18.6	18.9
90°	3.9	7.1	10.2	13.4	16.6	19.4	21.6	23.9	26.3	28.6	30.3
92.5°	16.4	16.5	16.7	16.9	17.0	18.3	20.6	22.9	25.2	27.6	29.3
95°	71.4	61.6	51.8	42.0	32.2	27.4	27.7	28.0	28.2	28.6	30.3
97.5°	151.6	157.7	163.8	170.0	176.2	163.1	130.9	98.7	66.5	34.3	34.4
100°	212.9	218.2	223.3	228.5	233.7	216.4	176.6	136.7	96.9	57.2	52.3
102.5°	281.5	285.3	289.1	292.9	296.7	296.0	290.8	285.7	280.4	275.3	222.3
105°	390.8	392.5	394.3	396.1	397.8	399.3	400.8	402.3	403.6	405.1	407.7
107.5°	492.3	493.3	494.1	495.0	495.8	497.2	499.2	501.2	503.1	505.1	506.4
110°	560.9	561.8	562.7	563.5	564.4	565.7	567.4	569.1	570.8	572.6	573.2



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	627.4	629.0	630.5	632.1	633.6	634.8	635.6	636.5	637.2	638.1	637.9
115°	729.7	730.6	731.4	732.3	733.1	733.5	733.1	732.9	732.6	732.3	732.9
117.5°	821.9	823.0	824.2	825.4	826.6	827.4	828.0	828.7	829.3	829.9	829.8
120°	884.2	885.4	886.6	887.7	888.8	889.2	889.0	888.7	888.4	888.1	888.7
122.5°	942.4	943.1	943.7	944.4	945.2	945.7	946.2	946.5	946.9	947.4	947.7
125°	1025.8	1026.9	1028.0	1029.2	1030.4	1030.6	1030.1	1029.5	1028.9	1028.4	1029.2
127.5°	1104.7	1105.0	1105.3	1105.5	1105.9	1106.6	1108.0	1109.3	1110.6	1112.0	1111.8
130°	1155.6	1155.9	1156.2	1156.5	1156.8	1157.4	1158.2	1159.1	1159.9	1160.8	1161.1
132.5°	1202.3	1202.8	1203.4	1203.9	1204.5	1205.2	1206.3	1207.4	1208.5	1209.6	1209.9
135°	1272.5	1272.1	1271.9	1271.6	1271.3	1271.7	1272.9	1274.0	1275.2	1276.3	1276.9
137.5°	1334.6	1334.6	1334.7	1334.9	1335.0	1335.7	1337.0	1338.3	1339.5	1340.7	1341.4
140°	1375.0	1375.6	1376.2	1376.7	1377.3	1377.9	1378.5	1379.1	1379.7	1380.2	1381.1
142.5°	1411.4	1412.4	1413.5	1414.5	1415.6	1416.3	1416.6	1416.9	1417.3	1417.6	1418.2
145°	1467.2	1468.1	1469.0	1469.8	1470.7	1471.1	1471.1	1471.1	1471.1	1471.1	1471.4
147.5°	1511.7	1513.2	1514.8	1516.5	1518.1	1518.7	1518.5	1518.2	1517.9	1517.6	1517.9
150°	1543.9	1545.0	1546.1	1547.3	1548.4	1548.9	1548.6	1548.3	1548.0	1547.7	1547.7
152.5°	1570.8	1571.8	1572.7	1573.6	1574.5	1574.8	1574.2	1573.6	1573.1	1572.6	1573.1
155°	1608.8	1609.0	1609.3	1609.6	1609.9	1609.6	1608.8	1607.9	1607.1	1606.1	1607.3
157.5°	1640.7	1640.5	1640.4	1640.2	1640.0	1639.4	1638.4	1637.4	1636.5	1635.5	1637.0
160°	1659.4	1658.5	1657.7	1656.8	1656.0	1655.4	1655.0	1654.8	1654.5	1654.2	1656.0
162.5°	1676.0	1674.9	1673.8	1672.8	1671.6	1670.9	1670.6	1670.3	1670.1	1669.7	1671.5
165°	1697.0	1695.6	1694.2	1692.7	1691.3	1690.6	1690.6	1690.6	1690.6	1690.6	1692.8
167.5°	1713.6	1712.2	1710.6	1709.2	1707.6	1706.8	1706.7	1706.5	1706.3	1706.2	1708.7
170°	1723.0	1721.3	1719.5	1717.8	1716.1	1715.4	1715.6	1716.0	1716.2	1716.5	1718.8
172.5°	1729.2	1727.5	1725.8	1724.1	1722.3	1721.6	1721.9	1722.2	1722.4	1722.8	1725.0
175°	1735.9	1734.2	1732.5	1730.8	1729.1	1728.4	1728.6	1728.9	1729.2	1729.5	1732.1
177.5°	1739.1	1737.5	1735.9	1734.2	1732.7	1732.1	1732.5	1733.0	1733.5	1733.9	1735.8
180°	1735.9	1735.9	1735.9	1735.9	1735.9	1735.9	1735.9	1735.9	1735.9	1735.9	1735.9



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	836.1	836.1	836.1	836.1	836.1	836.1	836.1	836.1
2.5°	833.2	834.4	835.6	836.1	835.9	835.9	835.8	835.6
5°	828.7	830.3	832.0	832.7	832.3	832.1	831.7	831.5
7.5°	819.5	820.8	822.1	822.7	822.5	822.3	822.2	821.9
10°	811.8	813.0	814.2	814.6	814.2	814.0	813.6	813.4
12.5°	802.4	803.7	804.9	805.4	804.9	804.5	804.2	803.7
15°	784.4	785.2	786.1	786.4	785.9	785.5	785.0	784.5
17.5°	763.9	764.4	765.0	765.1	764.8	764.5	764.2	764.0
20°	748.6	749.1	749.5	749.6	749.2	749.0	748.7	748.4
22.5°	732.7	733.5	734.3	734.4	733.9	733.4	732.9	732.3
25°	706.5	706.6	706.8	706.5	705.9	705.3	704.7	704.1
27.5°	677.1	676.7	676.3	675.8	675.0	674.3	673.6	672.8
30°	656.8	656.2	655.6	654.9	654.1	653.4	652.6	651.9
32.5°	636.1	635.4	634.7	634.0	633.3	632.5	631.7	631.0
35°	603.6	602.5	601.5	600.6	599.9	599.1	598.4	597.6
37.5°	569.6	568.3	567.2	566.2	565.2	564.2	563.3	562.2
40°	545.8	544.2	542.8	541.7	540.9	540.2	539.4	538.6
42.5°	522.8	521.0	519.3	518.1	517.7	517.2	516.7	516.2
45°	487.2	485.5	483.9	482.8	482.4	482.0	481.5	481.0
47.5°	452.7	450.8	449.0	447.5	446.4	445.2	444.1	443.0
50°	428.6	426.5	424.5	423.0	422.1	421.2	420.3	419.4
52.5°	403.9	402.1	400.3	398.7	397.6	396.5	395.4	394.3
55°	367.6	365.8	364.0	362.7	361.8	360.9	360.0	359.1
57.5°	331.2	329.5	327.8	326.5	325.6	324.8	323.9	323.0
60°	306.2	304.9	303.5	302.5	301.7	301.0	300.2	299.5
62.5°	281.8	280.5	279.3	278.4	277.6	276.9	276.1	275.3
65°	246.2	244.8	243.3	242.2	241.4	240.6	240.0	239.2
67.5°	209.7	208.3	206.8	206.0	205.8	205.6	205.3	205.2
70°	186.6	185.4	184.2	183.4	182.9	182.4	182.0	181.6
72.5°	163.4	162.5	161.5	160.8	160.4	160.0	159.5	159.0
75°	130.1	129.5	129.0	128.5	128.4	128.3	128.1	127.9
77.5°	98.5	98.3	98.2	97.9	97.5	97.1	96.7	96.3
80°	78.4	78.2	77.8	77.7	77.5	77.3	77.2	77.1
82.5°	60.4	60.3	60.1	59.9	59.8	59.7	59.5	59.3
85°	34.9	34.9	34.9	34.8	34.6	34.4	34.4	34.2
87.5°	19.3	19.6	20.0	20.2	20.3	20.4	20.6	20.7
90°	32.0	33.8	35.5	36.7	37.2	37.8	38.4	38.9
92.5°	31.0	32.7	34.4	35.4	35.5	35.6	35.7	35.8
95°	32.0	33.8	35.5	36.5	36.8	37.1	37.4	37.6
97.5°	34.6	34.8	35.0	35.2	35.5	35.8	36.1	36.3
100°	47.4	42.4	37.5	35.2	35.5	35.8	36.1	36.3
102.5°	169.4	116.5	63.6	37.2	37.2	37.3	37.4	37.4
105°	410.3	412.9	415.5	411.6	401.2	390.8	380.5	370.1
107.5°	507.6	508.9	510.1	511.3	512.5	513.5	514.6	515.7
110°	573.8	574.4	574.9	575.7	576.5	577.4	578.2	579.1





TEST NUMBER: P332773-935

CATALOG NUMBER: S124DIW-S575D1560U935-4F0-1E-UDD-F

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	637.8	637.7	637.6	638.1	639.2	640.2	641.4	642.5
115°	733.5	734.0	734.6	734.9	734.9	734.9	734.9	734.9
117.5°	829.7	829.6	829.5	829.4	829.2	829.1	829.1	828.9
120°	889.2	889.8	890.4	890.4	889.8	889.2	888.7	888.1
122.5°	948.0	948.4	948.7	948.6	948.0	947.4	946.8	946.3
125°	1030.1	1031.0	1031.8	1032.4	1032.7	1032.9	1033.3	1033.5
127.5°	1111.6	1111.5	1111.3	1111.0	1110.9	1110.6	1110.3	1110.2
130°	1161.4	1161.7	1161.9	1162.1	1162.1	1162.1	1162.1	1162.1
132.5°	1210.2	1210.5	1210.7	1210.8	1210.6	1210.3	1210.1	1209.9
135°	1277.5	1278.1	1278.7	1279.3	1279.8	1280.4	1281.0	1281.5
137.5°	1342.0	1342.6	1343.3	1343.5	1343.3	1343.2	1343.0	1342.8
140°	1382.0	1382.9	1383.7	1384.2	1384.6	1384.8	1385.1	1385.4
142.5°	1418.9	1419.5	1420.1	1420.5	1420.6	1420.6	1420.6	1420.7
145°	1471.7	1472.0	1472.2	1472.7	1473.3	1473.9	1474.5	1475.0
147.5°	1518.0	1518.3	1518.5	1518.8	1519.1	1519.3	1519.7	1519.9
150°	1547.7	1547.7	1547.7	1547.9	1548.2	1548.4	1548.8	1549.0
152.5°	1573.6	1574.0	1574.5	1574.6	1574.4	1574.3	1574.1	1573.9
155°	1608.4	1609.6	1610.8	1610.9	1610.1	1609.2	1608.3	1607.5
157.5°	1638.5	1640.0	1641.5	1641.5	1640.0	1638.5	1637.0	1635.5
160°	1657.7	1659.4	1661.1	1661.1	1659.4	1657.7	1656.0	1654.2
162.5°	1673.3	1675.0	1676.7	1676.5	1674.6	1672.7	1670.7	1668.7
165°	1695.1	1697.5	1699.8	1699.6	1697.0	1694.4	1691.9	1689.3
167.5°	1711.2	1713.7	1716.3	1716.1	1713.2	1710.4	1707.4	1704.6
170°	1721.1	1723.5	1725.8	1725.4	1722.6	1719.7	1716.8	1713.9
172.5°	1727.3	1729.7	1732.0	1731.6	1728.5	1725.4	1722.3	1719.1
175°	1734.7	1737.3	1739.9	1739.5	1735.9	1732.5	1729.1	1725.6
177.5°	1737.6	1739.5	1741.3	1740.9	1738.1	1735.3	1732.5	1729.7
180°	1735.9	1735.9	1735.9	1735.9	1735.9	1735.9	1735.9	1735.9

(END OF REPORT)