

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: P332832-927

Luminaire Tested: **S124DIW-S1020D1560U927-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332832-927
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-10,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124DIW-S1020D1560U927-4F0-1E-UDD-D1
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 1560 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7623.8 lumens
Efficiency: N/A
Efficacy: 99.5 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

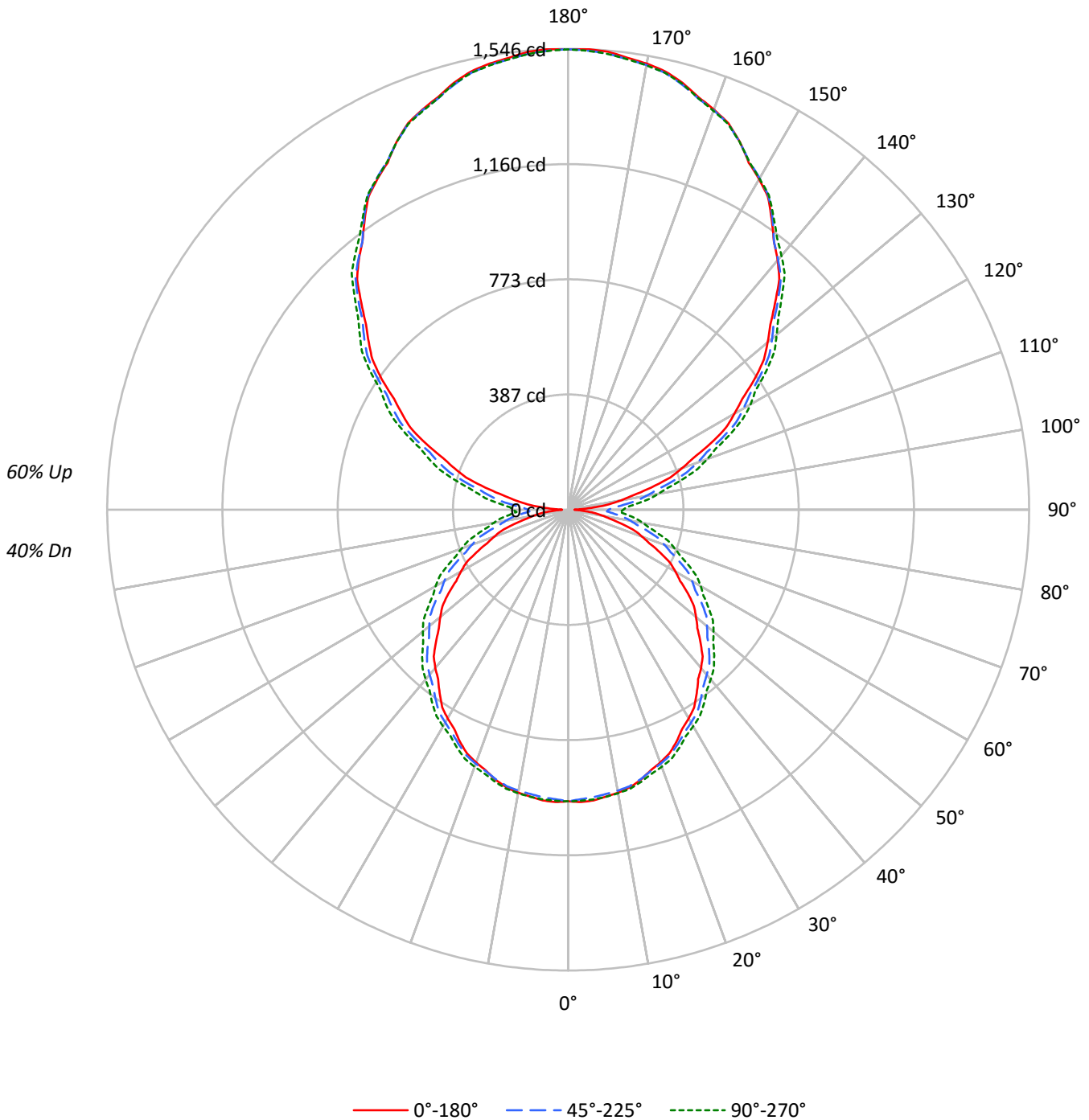
Input Watts (W): 76.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	105	105	105	105	96	96	96	96	78	78	78	62	62	62	47	47	47	40
1	95	90	86	82	86	82	79	75	67	65	62	53	52	50	41	39	38	32
2	86	78	72	66	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	26	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	35	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°	7896	7896	7896
5°	7920	7717	7739
10°	7872	7591	7585
15°	7802	7444	7404
20°	7695	7284	7227
25°	7575	7102	7034
30°	7445	6922	6835
35°	7299	6739	6660
40°	7181	6564	6478
45°	7007	6402	6322
50°	6859	6215	6158
55°	6707	6040	5964
60°	6469	5816	5788
65°	6208	5578	5571
70°	5894	5303	5319
75°	5453	5001	5089
80°	4964	4711	4865
85°	4347	4456	4735



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	92.6	1.2
10°-20°	265.4	3.5
20°-30°	401.3	5.3
30°-40°	485.5	6.4
40°-50°	513.3	6.7
50°-60°	483.1	6.3
60°-70°	400.8	5.3
70°-80°	281.5	3.7
80°-90°	163.8	2.1
90°-100°	196.4	2.6
100°-110°	371.7	4.9
110°-120°	559.1	7.3
120°-130°	701.9	9.2
130°-140°	769.9	10.1
140°-150°	747.7	9.8
150°-160°	626.9	8.2
160°-170°	417.1	5.5
170°-180°	146.1	1.9
0°-30°	759.3	10.0
0°-40°	1244.8	16.3
0°-60°	2241.1	29.4
0°-90°	3087.1	40.5
90°-120°	1127.2	14.8
90°-150°	3346.7	43.9
90°-180°	4537.0	59.5
0°-180°	7623.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	978	978	978	978	978	
5°	979	976	968	976	976	93
15°	939	940	936	946	945	264
25°	859	865	868	880	882	395
35°	751	764	776	790	794	470
45°	626	647	668	686	692	484
55°	491	514	546	568	575	437
65°	340	375	412	438	448	336
75°	188	229	275	304	315	200
85°	58	104	153	185	197	62
90°	21	78	135	172	185	16
95°	86	133	186	218	229	91
105°	288	312	357	386	400	306
115°	527	538	570	592	599	520
125°	763	763	788	806	811	680
135°	980	988	995	1010	1013	759
145°	1190	1193	1194	1200	1201	744
155°	1362	1362	1360	1365	1360	626
165°	1482	1479	1476	1483	1479	418
175°	1542	1536	1535	1542	1535	146
180°	1544	1544	1544	1544	1544	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	978.1	978.1	978.1	978.1	978.1	978.1	978.1	978.1	978.1	978.1	978.1
2.5°	981.6	981.0	980.4	979.9	979.2	978.2	976.6	975.1	973.5	971.9	973.3
5°	979.1	978.4	977.7	977.0	976.3	975.0	973.4	971.6	969.9	968.2	970.2
7.5°	970.8	970.4	969.9	969.6	969.1	968.2	966.8	965.4	963.9	962.5	964.7
10°	963.8	963.6	963.4	963.1	962.9	962.1	960.9	959.7	958.5	957.3	959.5
12.5°	954.2	954.2	954.1	954.0	954.0	953.5	952.8	951.9	951.1	950.2	952.3
15°	938.7	938.9	939.1	939.4	939.6	939.4	938.7	937.9	937.2	936.4	938.7
17.5°	917.4	918.1	918.9	919.6	920.4	920.6	920.4	920.4	920.2	920.0	922.3
20°	902.5	903.2	904.0	904.7	905.5	905.9	906.2	906.4	906.7	906.9	909.3
22.5°	885.8	886.8	887.7	888.7	889.5	890.3	890.7	891.1	891.5	892.0	894.5
25°	858.7	860.2	861.6	863.1	864.5	865.6	866.3	867.1	867.8	868.5	871.2
27.5°	828.5	830.6	832.7	834.9	837.0	838.7	839.8	840.9	842.0	843.1	845.7
30°	808.3	810.2	812.2	814.1	816.1	817.9	819.6	821.3	823.0	824.7	827.4
32.5°	786.4	788.8	791.1	793.4	795.7	797.9	799.8	801.7	803.6	805.5	808.5
35°	751.4	754.3	757.2	760.1	763.0	765.7	768.2	770.6	773.0	775.5	778.9
37.5°	716.1	719.5	722.8	726.2	729.5	732.7	735.7	738.7	741.8	744.8	748.2
40°	693.3	696.5	699.7	702.8	706.0	709.2	712.6	716.1	719.5	722.9	726.5
42.5°	667.0	670.6	674.1	677.7	681.2	685.0	689.0	693.0	697.0	701.0	705.0
45°	626.5	631.1	635.7	640.4	645.0	649.6	654.3	658.9	663.5	668.1	672.2
47.5°	587.7	592.5	597.2	602.1	606.8	611.9	617.2	622.6	628.0	633.3	637.5
50°	559.7	565.1	570.4	575.8	581.1	586.5	591.8	597.1	602.5	607.8	612.8
52.5°	531.6	537.0	542.3	547.7	553.1	558.8	564.9	571.1	577.2	583.4	588.2
55°	490.7	495.8	500.9	506.0	511.1	517.3	524.7	532.0	539.2	546.5	551.4
57.5°	444.9	451.2	457.6	463.9	470.2	477.0	484.3	491.5	498.8	506.0	511.8
60°	415.1	421.4	427.8	434.1	440.5	447.6	455.7	463.7	471.7	479.7	485.3
62.5°	386.2	393.1	400.1	406.9	413.8	421.3	429.4	437.4	445.4	453.4	459.1
65°	339.5	347.3	355.1	362.9	370.7	378.7	387.0	395.3	403.5	411.9	417.9
67.5°	294.6	302.9	311.2	319.5	327.7	336.3	345.2	354.0	362.9	371.8	378.0
70°	264.0	272.3	280.5	288.8	297.1	305.9	315.1	324.3	333.6	342.9	349.4
72.5°	234.2	242.6	251.1	259.6	268.1	277.2	287.0	296.8	306.7	316.6	322.9
75°	188.4	197.4	206.4	215.4	224.4	234.0	244.2	254.4	264.7	274.9	281.7
77.5°	145.7	155.2	164.8	174.3	183.9	193.9	204.7	215.4	226.1	236.8	243.7
80°	119.4	129.1	138.9	148.6	158.4	168.6	179.3	190.0	200.7	211.4	218.7
82.5°	93.1	103.2	113.4	123.5	133.6	144.0	154.7	165.4	176.2	186.9	194.3
85°	58.1	68.3	78.5	88.7	98.9	109.6	120.5	131.4	142.4	153.4	160.7
87.5°	33.1	43.6	54.2	64.6	75.2	86.0	97.0	108.1	119.2	130.3	137.7
90°	21.1	33.7	46.4	59.1	71.7	84.4	97.0	109.6	122.2	134.8	143.4
92.5°	42.2	54.3	66.4	78.5	90.6	102.7	114.6	126.6	138.6	150.5	158.3
95°	85.9	96.3	106.8	117.2	127.6	138.7	150.6	162.4	174.2	186.1	193.5
97.5°	138.1	146.9	155.7	164.6	173.4	183.9	195.9	207.9	220.0	232.1	239.4
100°	179.3	186.6	194.1	201.5	208.8	218.5	230.4	242.2	254.1	266.0	273.1
102.5°	223.2	229.2	235.2	241.1	247.2	255.9	267.4	278.8	290.3	301.7	308.9
105°	288.2	293.3	298.4	303.6	308.7	316.3	326.4	336.4	346.5	356.6	363.5
107.5°	358.5	362.7	367.0	371.4	375.7	382.1	390.9	399.5	408.2	416.8	423.6
110°	405.4	409.2	413.2	417.2	421.0	427.1	435.5	443.7	451.9	460.2	465.2



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	454.2	457.2	460.4	463.5	466.7	472.1	479.7	487.4	495.0	502.6	507.9
115°	527.4	529.6	531.7	533.9	536.1	540.8	548.1	555.4	562.6	569.9	575.0
117.5°	597.4	598.9	600.5	602.0	603.5	607.7	614.6	621.5	628.4	635.3	639.4
120°	643.3	645.2	646.9	648.7	650.5	654.5	660.8	667.0	673.3	679.5	683.1
122.5°	692.1	692.6	693.2	693.8	694.3	697.8	704.1	710.3	716.7	722.9	726.9
125°	762.9	762.6	762.4	762.2	761.9	764.7	770.5	776.3	782.1	788.0	792.0
127.5°	827.9	828.5	829.0	829.6	830.1	832.5	836.7	841.0	845.3	849.5	853.3
130°	872.9	873.5	874.0	874.5	875.0	877.3	881.2	885.1	889.0	892.9	896.8
132.5°	919.7	920.0	920.4	920.8	921.1	922.7	925.6	928.5	931.4	934.3	937.9
135°	980.5	982.1	983.7	985.2	986.8	988.5	990.2	991.9	993.6	995.3	998.7
137.5°	1047.8	1048.4	1048.8	1049.3	1049.9	1050.8	1051.9	1053.2	1054.5	1055.7	1058.6
140°	1092.7	1093.1	1093.3	1093.6	1093.9	1094.2	1094.4	1094.6	1094.9	1095.1	1098.0
142.5°	1133.0	1133.5	1133.9	1134.4	1134.9	1135.0	1134.6	1134.2	1133.9	1133.5	1136.2
145°	1189.6	1190.4	1191.2	1192.1	1192.9	1193.4	1193.7	1194.0	1194.2	1194.5	1195.6
147.5°	1246.0	1247.1	1248.1	1249.1	1250.1	1250.5	1250.3	1250.1	1249.9	1249.7	1249.7
150°	1280.4	1281.2	1282.0	1282.9	1283.7	1284.0	1284.0	1284.0	1284.0	1284.0	1284.0
152.5°	1312.0	1312.6	1313.2	1313.8	1314.4	1314.8	1314.9	1315.2	1315.4	1315.6	1316.2
155°	1361.7	1361.7	1361.7	1361.7	1361.7	1361.6	1361.3	1361.0	1360.8	1360.5	1361.6
157.5°	1403.7	1403.3	1402.8	1402.3	1401.8	1401.6	1401.5	1401.4	1401.4	1401.4	1402.2
160°	1428.6	1428.3	1428.1	1427.8	1427.5	1427.3	1427.0	1426.7	1426.5	1426.2	1427.0
162.5°	1451.5	1450.9	1450.2	1449.5	1448.7	1448.3	1448.0	1447.8	1447.5	1447.2	1448.7
165°	1482.3	1481.5	1480.7	1480.0	1479.2	1478.5	1478.0	1477.4	1476.9	1476.4	1478.0
167.5°	1506.0	1504.9	1503.8	1502.7	1501.6	1501.0	1501.1	1501.1	1501.2	1501.3	1502.8
170°	1519.4	1518.1	1516.7	1515.4	1514.1	1513.5	1513.8	1514.1	1514.3	1514.6	1516.2
172.5°	1528.9	1527.8	1526.7	1525.6	1524.5	1523.9	1524.0	1524.1	1524.1	1524.2	1526.0
175°	1542.1	1540.7	1539.4	1538.1	1536.8	1536.0	1535.7	1535.4	1535.2	1534.9	1536.8
177.5°	1546.3	1545.3	1544.3	1543.2	1542.1	1541.6	1541.6	1541.6	1541.6	1541.6	1543.1
180°	1544.4	1544.4	1544.4	1544.4	1544.4	1544.4	1544.4	1544.4	1544.4	1544.4	1544.4



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	978.1	978.1	978.1	978.1	978.1	978.1	978.1	978.1
2.5°	974.7	976.0	977.4	977.9	977.8	977.6	977.4	977.2
5°	972.1	974.1	976.0	976.8	976.6	976.4	976.1	975.9
7.5°	966.9	969.1	971.3	972.2	972.0	971.8	971.5	971.3
10°	961.6	963.8	966.1	967.0	966.8	966.5	966.3	966.1
12.5°	954.3	956.2	958.2	959.3	959.2	959.1	959.1	959.0
15°	940.9	943.0	945.2	946.2	945.9	945.7	945.5	945.2
17.5°	924.5	926.8	929.0	930.0	929.8	929.6	929.4	929.2
20°	911.7	914.2	916.6	917.8	917.8	917.8	917.8	917.8
22.5°	896.8	899.3	901.7	903.2	903.6	903.9	904.3	904.7
25°	873.9	876.5	879.2	880.7	881.0	881.2	881.5	881.7
27.5°	848.1	850.6	853.1	854.4	854.8	855.1	855.3	855.6
30°	830.1	832.7	835.4	837.0	837.5	838.0	838.5	839.0
32.5°	811.6	814.7	817.8	819.5	820.0	820.5	820.9	821.5
35°	782.3	785.7	789.1	791.2	791.9	792.6	793.4	794.1
37.5°	751.7	755.2	758.6	760.7	761.5	762.3	763.0	763.8
40°	730.2	733.8	737.5	739.8	740.8	741.7	742.8	743.7
42.5°	709.1	713.1	717.2	719.5	720.3	721.1	721.9	722.6
45°	676.4	680.6	684.7	687.4	688.6	689.8	691.0	692.2
47.5°	641.8	646.1	650.5	653.3	654.7	656.2	657.7	659.2
50°	617.6	622.5	627.3	630.5	632.0	633.4	634.9	636.4
52.5°	593.1	597.9	602.9	605.9	607.4	608.9	610.4	611.8
55°	556.3	561.2	566.0	569.2	570.6	572.1	573.5	575.0
57.5°	517.6	523.4	529.2	532.7	534.1	535.5	536.9	538.2
60°	490.9	496.5	502.1	505.9	507.9	509.8	511.7	513.7
62.5°	464.6	470.2	475.9	479.6	481.6	483.5	485.4	487.4
65°	424.0	430.1	436.2	440.2	442.1	444.1	446.0	448.0
67.5°	384.1	390.3	396.5	400.5	402.4	404.3	406.2	408.1
70°	355.9	362.5	369.1	373.3	374.9	376.7	378.3	380.1
72.5°	329.3	335.6	342.1	346.2	348.1	350.0	351.9	353.8
75°	288.5	295.3	302.1	306.7	308.9	311.1	313.2	315.4
77.5°	250.6	257.5	264.4	269.1	271.4	273.8	276.1	278.5
80°	226.0	233.3	240.6	245.2	247.2	249.1	251.0	253.0
82.5°	201.8	209.4	216.8	221.7	223.8	225.9	228.1	230.2
85°	167.9	175.2	182.5	187.4	189.9	192.3	194.7	197.2
87.5°	145.1	152.5	159.9	164.7	166.9	169.1	171.4	173.6
90°	152.0	160.7	169.3	174.9	177.4	179.8	182.3	184.8
92.5°	166.1	174.0	181.7	186.8	189.1	191.3	193.6	195.8
95°	200.8	208.2	215.6	220.3	222.5	224.7	226.9	229.1
97.5°	246.8	254.1	261.4	266.1	268.2	270.3	272.4	274.5
100°	280.2	287.3	294.4	298.8	300.5	302.2	304.0	305.6
102.5°	316.0	323.1	330.3	334.9	337.0	339.1	341.2	343.3
105°	370.3	377.2	384.1	388.9	391.7	394.4	397.1	399.9
107.5°	430.3	437.0	443.8	448.0	449.7	451.4	453.1	454.8
110°	470.3	475.4	480.5	484.3	487.1	489.9	492.6	495.4



TEST NUMBER: P332832-927

CATALOG NUMBER: S124DIW-S1020D1560U927-4F0-1E-UDD-D1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	513.3	518.6	523.8	527.5	529.7	531.7	533.9	536.0
115°	580.0	585.2	590.3	593.5	594.9	596.4	597.8	599.3
117.5°	643.6	647.7	651.9	654.7	656.1	657.5	658.9	660.3
120°	686.7	690.2	693.7	696.7	699.3	701.7	704.2	706.6
122.5°	730.9	734.8	738.9	741.2	742.0	742.8	743.6	744.4
125°	796.1	800.3	804.4	806.8	807.8	808.7	809.6	810.6
127.5°	857.2	861.0	864.9	867.4	868.6	869.9	871.1	872.4
130°	900.6	904.4	908.3	910.4	910.8	911.2	911.6	912.0
132.5°	941.6	945.2	948.9	951.3	952.3	953.3	954.3	955.4
135°	1002.0	1005.4	1008.8	1010.7	1011.5	1012.1	1012.7	1013.4
137.5°	1061.4	1064.3	1067.1	1069.3	1070.7	1072.1	1073.4	1074.8
140°	1101.0	1103.8	1106.8	1108.7	1109.6	1110.6	1111.5	1112.5
142.5°	1139.0	1141.7	1144.4	1146.3	1147.2	1148.2	1149.1	1150.2
145°	1196.9	1198.1	1199.3	1199.9	1200.2	1200.3	1200.5	1200.6
147.5°	1249.7	1249.6	1249.6	1249.8	1250.4	1250.9	1251.4	1251.9
150°	1284.0	1284.0	1284.0	1284.0	1283.7	1283.4	1283.2	1282.9
152.5°	1316.8	1317.5	1318.1	1318.1	1317.4	1316.8	1316.1	1315.3
155°	1362.6	1363.7	1364.8	1364.8	1363.7	1362.6	1361.6	1360.5
157.5°	1403.0	1403.7	1404.5	1404.5	1403.6	1402.7	1401.8	1400.9
160°	1427.8	1428.6	1429.4	1429.1	1427.8	1426.5	1425.1	1423.8
162.5°	1450.1	1451.5	1452.9	1453.0	1451.7	1450.4	1449.1	1447.7
165°	1479.6	1481.1	1482.7	1483.0	1481.9	1480.9	1479.8	1478.8
167.5°	1504.4	1506.0	1507.6	1507.6	1505.9	1504.3	1502.6	1500.9
170°	1517.8	1519.4	1521.0	1520.8	1519.0	1517.1	1515.3	1513.4
172.5°	1527.8	1529.5	1531.4	1531.4	1529.5	1527.6	1525.7	1523.9
175°	1538.7	1540.5	1542.4	1542.4	1540.5	1538.7	1536.8	1534.9
177.5°	1544.6	1546.0	1547.5	1547.4	1545.7	1544.0	1542.4	1540.6
180°	1544.4	1544.4	1544.4	1544.4	1544.4	1544.4	1544.4	1544.4

(END OF REPORT)