

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: P332813-935

Luminaire Tested: **S124DIW-S1020D770U935-4F0-1E-UDD-D**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332813-935
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-S1020D770U935-4F0-1E-UDD-D
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 770 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6269.4 lumens
Efficiency: N/A
Efficacy: 117.0 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

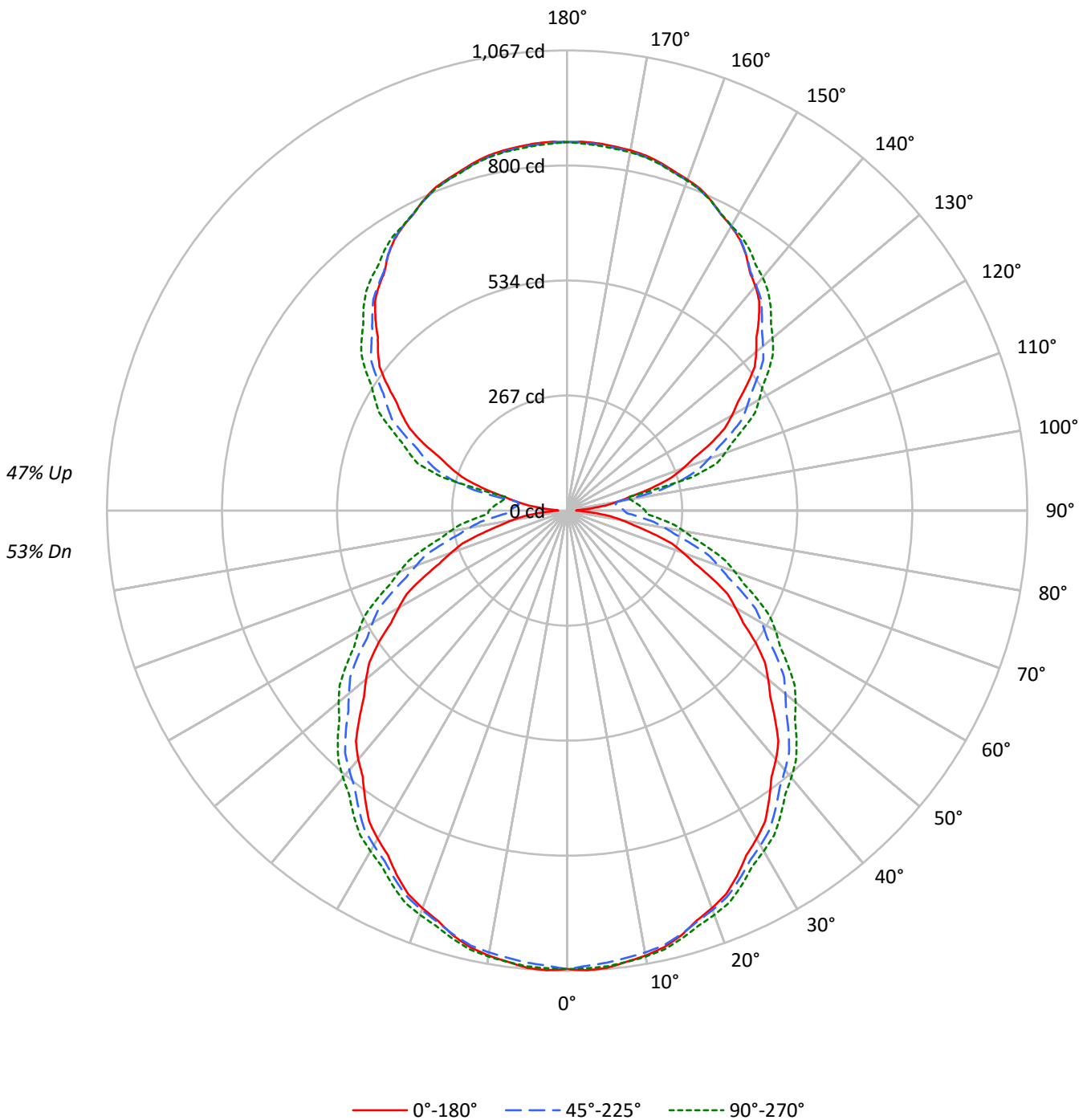
Input Watts (W): 53.6
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P332813-935

CATALOG NUMBER: S124DIW-S1020D770U935-4F0-1E-UDD-D

Luminous Intensity Polar Plot





TEST NUMBER: P332813-935

CATALOG NUMBER: S124DIW-S1020D770U935-4F0-1E-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	108	108	108	108	100	100	100	100	85	85	85	72	72	72	59	59	59	53
1	97	93	88	84	90	86	82	79	73	70	68	61	59	58	51	49	48	43
2	88	80	74	68	81	74	69	64	63	59	55	53	50	47	44	42	39	35
3	80	70	62	56	74	65	58	53	56	50	46	47	43	39	39	36	33	29
4	73	62	54	47	67	57	50	44	49	43	39	41	37	33	34	31	28	25
5	67	55	46	40	62	51	44	38	44	38	33	37	32	29	31	27	24	21
6	62	49	41	35	57	46	38	33	39	33	29	33	29	25	28	24	21	18
7	57	44	36	30	53	41	34	29	36	30	25	30	26	22	25	22	19	16
8	53	40	32	27	49	38	30	25	32	27	22	28	23	20	23	20	17	14
9	49	37	29	24	45	34	27	22	30	24	20	25	21	18	21	18	15	13
10	46	34	26	21	43	31	25	20	27	22	18	23	19	16	20	16	14	12

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	8582	8582	8582
5°	8608	8387	8412
10°	8556	8250	8244
15°	8479	8091	8047
20°	8364	7916	7856
25°	8233	7719	7645
30°	8093	7524	7428
35°	7933	7324	7239
40°	7804	7134	7041
45°	7615	6958	6871
50°	7455	6755	6692
55°	7289	6565	6482
60°	7031	6322	6290
65°	6747	6061	6055
70°	6405	5763	5780
75°	5924	5435	5533
80°	5397	5119	5288
85°	4721	4842	5146



TEST NUMBER: P332813-935

CATALOG NUMBER: S124DIW-S1020D770U935-4F0-1E-UDD-D

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	100.7	1.6
10°-20°	288.4	4.6
20°-30°	436.1	7.0
30°-40°	527.7	8.4
40°-50°	557.9	8.9
50°-60°	525.0	8.4
60°-70°	435.6	6.9
70°-80°	306.0	4.9
80°-90°	175.4	2.8
90°-100°	131.9	2.1
100°-110°	262.4	4.2
110°-120°	407.5	6.5
120°-130°	481.3	7.7
130°-140°	496.6	7.9
140°-150°	455.3	7.3
150°-160°	365.1	5.8
160°-170°	235.5	3.8
170°-180°	81.2	1.3
0°-30°	825.2	13.2
0°-40°	1352.9	21.6
0°-60°	2435.8	38.9
0°-90°	3352.8	53.5
90°-120°	801.8	12.8
90°-150°	2234.9	35.6
90°-180°	2917.0	46.5
0°-180°	6269.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1063	1063	1063	1063	1063	
5°	1064	1060	1052	1061	1061	101
15°	1020	1021	1018	1028	1027	287
25°	933	940	944	956	958	430
35°	817	831	843	859	863	511
45°	681	704	726	746	752	526
55°	533	559	594	617	625	475
65°	369	407	448	476	487	366
75°	205	249	299	331	343	218
85°	63	113	167	201	214	67
90°	21	76	132	169	181	14
95°	51	70	118	152	165	57
105°	203	232	278	311	300	213
115°	366	380	416	443	452	361
125°	510	512	540	563	572	455
135°	629	629	639	659	668	485
145°	723	724	724	732	738	452
155°	792	792	791	793	791	365
165°	835	832	832	837	832	236
175°	854	851	851	856	849	81
180°	854	854	854	854	854	



TEST NUMBER: P332813-935

CATALOG NUMBER: S124DIW-S1020D770U935-4F0-1E-UDD-D

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1063.1	1063.1	1063.1	1063.1	1063.1	1063.1	1063.1	1063.1	1063.1	1063.1	1063.1
2.5°	1066.9	1066.3	1065.6	1065.0	1064.3	1063.2	1061.4	1059.8	1058.1	1056.4	1057.8
5°	1064.2	1063.4	1062.6	1061.9	1061.1	1059.7	1057.9	1056.0	1054.2	1052.3	1054.5
7.5°	1055.2	1054.7	1054.2	1053.8	1053.3	1052.3	1050.8	1049.2	1047.7	1046.1	1048.5
10°	1047.6	1047.3	1047.1	1046.8	1046.5	1045.7	1044.4	1043.1	1041.7	1040.4	1042.8
12.5°	1037.1	1037.1	1037.0	1036.9	1036.9	1036.4	1035.5	1034.6	1033.7	1032.8	1035.0
15°	1020.2	1020.5	1020.7	1021.0	1021.2	1021.0	1020.2	1019.4	1018.6	1017.8	1020.2
17.5°	997.1	997.9	998.7	999.4	1000.3	1000.6	1000.4	1000.3	1000.1	1000.0	1002.4
20°	980.9	981.7	982.5	983.3	984.1	984.6	984.9	985.2	985.4	985.7	988.3
22.5°	962.8	963.8	964.8	965.9	966.8	967.6	968.0	968.5	969.0	969.5	972.2
25°	933.3	934.9	936.4	938.1	939.6	940.8	941.6	942.5	943.2	944.0	946.9
27.5°	900.4	902.8	905.1	907.4	909.7	911.5	912.7	914.0	915.2	916.4	919.1
30°	878.6	880.6	882.8	884.8	887.0	889.0	890.8	892.7	894.5	896.4	899.3
32.5°	854.7	857.3	859.8	862.4	864.9	867.2	869.3	871.3	873.4	875.5	878.7
35°	816.7	819.8	822.9	826.1	829.3	832.2	834.9	837.5	840.2	842.8	846.5
37.5°	778.3	782.0	785.6	789.3	792.9	796.3	799.6	802.9	806.2	809.5	813.2
40°	753.5	757.0	760.4	763.9	767.3	770.9	774.6	778.3	782.0	785.7	789.6
42.5°	725.0	728.8	732.7	736.6	740.4	744.5	748.8	753.2	757.5	761.9	766.3
45°	680.9	686.0	691.0	696.0	701.0	706.0	711.1	716.1	721.1	726.2	730.6
47.5°	638.8	643.9	649.1	654.4	659.5	665.0	670.8	676.7	682.5	688.3	692.9
50°	608.3	614.2	619.9	625.8	631.5	637.4	643.3	649.0	654.9	660.6	666.0
52.5°	577.8	583.7	589.4	595.3	601.2	607.3	614.0	620.7	627.3	634.0	639.3
55°	533.3	538.9	544.4	550.0	555.5	562.2	570.2	578.2	586.1	594.0	599.3
57.5°	483.5	490.4	497.3	504.2	511.1	518.4	526.3	534.3	542.1	550.0	556.3
60°	451.2	458.1	464.9	471.8	478.7	486.5	495.2	503.9	512.6	521.4	527.4
62.5°	419.7	427.2	434.8	442.3	449.8	457.9	466.7	475.4	484.1	492.8	498.9
65°	369.0	377.5	386.0	394.4	402.9	411.6	420.6	429.6	438.6	447.6	454.2
67.5°	320.2	329.2	338.2	347.2	356.2	365.5	375.1	384.8	394.4	404.1	410.8
70°	286.9	295.9	304.9	313.8	322.9	332.4	342.4	352.5	362.6	372.6	379.8
72.5°	254.5	263.7	272.9	282.1	291.4	301.3	311.9	322.6	333.4	344.1	350.9
75°	204.7	214.6	224.3	234.1	243.9	254.3	265.4	276.6	287.7	298.8	306.2
77.5°	158.3	168.7	179.1	189.4	199.8	210.8	222.5	234.1	245.7	257.4	264.8
80°	129.8	140.3	150.9	161.5	172.1	183.2	194.8	206.5	218.1	229.7	237.7
82.5°	101.2	112.2	123.2	134.2	145.2	156.5	168.2	179.8	191.5	203.1	211.2
85°	63.1	74.2	85.3	96.4	107.5	119.1	131.0	142.8	154.7	166.7	174.6
87.5°	35.6	46.8	57.9	69.0	80.1	91.5	103.3	115.1	126.9	138.8	146.6
90°	20.9	33.1	45.3	57.4	69.6	81.9	94.4	106.9	119.4	131.9	140.4
92.5°	26.2	35.7	45.4	54.9	64.6	75.7	88.2	100.7	113.1	125.7	134.0
95°	50.6	54.5	58.5	62.3	66.2	73.7	84.6	95.7	106.7	117.6	125.6
97.5°	88.7	99.2	109.8	120.3	130.8	133.5	128.4	123.3	118.1	113.0	120.1
100°	117.9	127.3	136.8	146.2	155.7	155.8	146.5	137.2	127.9	118.6	123.3
102.5°	151.6	159.5	167.5	175.4	183.3	191.0	198.5	206.1	213.6	221.2	202.1
105°	203.1	209.2	215.3	221.5	227.6	236.0	246.5	257.0	267.5	277.9	285.9
107.5°	252.8	257.6	262.3	267.1	271.9	279.4	289.6	299.8	310.0	320.3	327.4
110°	285.6	289.7	293.9	298.0	302.1	309.3	319.3	329.5	339.6	349.7	356.1



TEST NUMBER: P332813-935

CATALOG NUMBER: S124DIW-S1020D770U935-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	317.4	321.4	325.5	329.5	333.6	340.2	349.5	358.7	367.9	377.1	383.0
115°	366.4	369.1	372.0	374.7	377.5	383.1	391.4	399.8	408.1	416.4	422.5
117.5°	411.5	413.5	415.4	417.4	419.5	424.6	432.7	440.9	449.1	457.4	462.8
120°	441.2	442.6	443.9	445.3	446.6	451.1	458.6	466.1	473.6	481.2	486.8
122.5°	469.8	470.3	470.8	471.3	471.8	475.8	483.2	490.7	498.1	505.6	511.0
125°	509.6	510.0	510.2	510.6	510.8	514.2	520.6	526.8	533.2	539.5	544.9
127.5°	548.3	548.1	548.0	547.9	547.8	550.6	556.3	562.1	567.8	573.5	578.2
130°	572.4	572.2	572.1	572.0	571.9	574.1	578.9	583.5	588.1	592.8	597.7
132.5°	595.4	595.4	595.4	595.4	595.4	597.3	601.2	605.2	609.1	613.0	617.7
135°	628.7	628.5	628.4	628.3	628.1	629.3	631.7	634.1	636.5	638.9	643.5
137.5°	659.3	659.0	658.8	658.7	658.4	659.1	660.6	662.1	663.7	665.2	669.3
140°	679.2	679.2	679.2	679.2	679.2	679.6	680.1	680.6	681.2	681.7	685.6
142.5°	696.1	696.6	697.1	697.5	698.0	698.2	698.2	698.3	698.3	698.3	701.5
145°	723.4	723.6	723.7	723.8	724.0	724.1	724.1	724.1	724.1	724.1	725.8
147.5°	745.3	745.8	746.3	746.8	747.3	747.5	747.4	747.3	747.1	747.0	747.3
150°	761.1	761.4	761.7	762.0	762.3	762.4	762.2	762.1	762.0	761.8	761.8
152.5°	773.4	773.9	774.2	774.6	775.1	775.1	774.8	774.6	774.4	774.1	774.3
155°	791.9	792.0	792.1	792.3	792.5	792.3	791.9	791.4	791.0	790.6	791.2
157.5°	807.6	807.5	807.4	807.4	807.3	806.9	806.5	806.0	805.5	805.0	805.7
160°	816.7	816.3	816.0	815.5	815.1	814.8	814.7	814.5	814.3	814.2	815.1
162.5°	824.9	824.4	823.9	823.4	822.8	822.4	822.3	822.2	822.0	821.9	822.8
165°	835.3	834.6	833.9	833.2	832.5	832.2	832.2	832.2	832.2	832.2	833.3
167.5°	843.5	842.7	842.1	841.3	840.5	840.2	840.1	840.0	839.9	839.8	841.0
170°	848.1	847.2	846.4	845.5	844.7	844.3	844.5	844.6	844.7	844.9	846.0
172.5°	851.2	850.3	849.5	848.6	847.7	847.4	847.6	847.7	847.8	848.0	849.1
175°	854.5	853.6	852.8	852.0	851.1	850.8	850.8	851.0	851.2	851.3	852.6
177.5°	856.0	855.2	854.5	853.6	852.8	852.6	852.8	853.0	853.3	853.4	854.4
180°	854.5	854.5	854.5	854.5	854.5	854.5	854.5	854.5	854.5	854.5	854.5



TEST NUMBER: P332813-935

CATALOG NUMBER: S124DIW-S1020D770U935-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1063.1	1063.1	1063.1	1063.1	1063.1	1063.1	1063.1	1063.1
2.5°	1059.4	1060.8	1062.3	1062.9	1062.7	1062.5	1062.3	1062.1
5°	1056.5	1058.7	1060.8	1061.7	1061.4	1061.2	1060.9	1060.7
7.5°	1050.9	1053.3	1055.7	1056.7	1056.4	1056.2	1055.9	1055.7
10°	1045.2	1047.6	1050.0	1051.0	1050.8	1050.5	1050.2	1050.0
12.5°	1037.2	1039.3	1041.5	1042.6	1042.5	1042.4	1042.4	1042.3
15°	1022.6	1024.9	1027.3	1028.4	1028.1	1027.9	1027.6	1027.3
17.5°	1004.8	1007.3	1009.7	1010.8	1010.6	1010.4	1010.1	1010.0
20°	990.9	993.6	996.3	997.6	997.6	997.6	997.6	997.6
22.5°	974.7	977.4	980.1	981.6	982.1	982.4	982.8	983.3
25°	949.9	952.7	955.6	957.3	957.5	957.8	958.0	958.3
27.5°	921.8	924.5	927.2	928.7	929.0	929.4	929.6	930.0
30°	902.2	905.1	908.0	909.7	910.2	910.8	911.4	911.9
32.5°	882.1	885.5	888.8	890.7	891.2	891.7	892.3	892.9
35°	850.2	853.9	857.6	859.9	860.7	861.4	862.3	863.1
37.5°	817.0	820.8	824.5	826.8	827.7	828.5	829.3	830.2
40°	793.6	797.5	801.6	804.1	805.1	806.2	807.3	808.3
42.5°	770.7	775.1	779.5	782.0	782.9	783.8	784.6	785.4
45°	735.1	739.7	744.2	747.1	748.4	749.7	751.1	752.3
47.5°	697.6	702.2	707.0	710.1	711.6	713.3	714.8	716.4
50°	671.2	676.6	681.8	685.3	686.9	688.5	690.0	691.6
52.5°	644.6	649.9	655.2	658.6	660.2	661.8	663.4	665.0
55°	604.6	609.9	615.2	618.6	620.2	621.8	623.4	625.0
57.5°	562.6	568.9	575.1	579.0	580.5	582.0	583.5	585.0
60°	533.6	539.7	545.7	549.8	552.0	554.1	556.2	558.3
62.5°	505.0	511.1	517.2	521.2	523.4	525.5	527.6	529.8
65°	460.8	467.4	474.1	478.5	480.5	482.7	484.7	486.9
67.5°	417.5	424.2	430.9	435.3	437.4	439.5	441.5	443.6
70°	386.8	394.0	401.1	405.7	407.5	409.4	411.2	413.1
72.5°	357.9	364.8	371.8	376.3	378.3	380.4	382.5	384.5
75°	313.6	321.0	328.4	333.3	335.7	338.1	340.4	342.9
77.5°	272.4	279.9	287.4	292.5	295.0	297.6	300.1	302.6
80°	245.6	253.6	261.5	266.5	268.6	270.8	272.9	275.0
82.5°	219.4	227.6	235.7	240.9	243.2	245.6	247.9	250.2
85°	182.5	190.5	198.4	203.7	206.4	209.0	211.6	214.3
87.5°	154.5	162.3	170.1	175.2	177.6	180.0	182.4	184.8
90°	149.0	157.5	166.0	171.5	173.8	176.2	178.7	181.1
92.5°	142.3	150.6	158.9	164.2	166.3	168.5	170.7	172.9
95°	133.6	141.6	149.6	154.9	157.4	159.9	162.5	165.0
97.5°	127.1	134.1	141.1	145.9	148.3	150.7	153.1	155.5
100°	128.0	132.8	137.5	140.9	142.8	144.8	146.9	148.9
102.5°	183.0	163.8	144.7	136.2	138.3	140.4	142.5	144.6
105°	293.8	301.6	309.5	312.0	309.0	306.0	303.0	300.0
107.5°	334.6	341.6	348.8	353.6	356.0	358.5	360.9	363.3
110°	362.4	368.8	375.1	379.6	382.2	384.7	387.3	389.8



TEST NUMBER: P332813-935

CATALOG NUMBER: S124DIW-S1020D770U935-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	388.7	394.6	400.5	404.7	407.3	409.9	412.6	415.3
115°	428.6	434.7	440.8	444.8	446.7	448.5	450.4	452.2
117.5°	468.2	473.6	479.1	482.8	484.9	487.0	489.0	491.1
120°	492.3	497.9	503.5	507.2	509.0	510.8	512.7	514.5
122.5°	516.5	521.9	527.4	531.0	532.6	534.2	535.8	537.4
125°	550.4	555.9	561.3	564.9	566.6	568.3	570.1	571.8
127.5°	582.9	587.5	592.2	595.4	597.1	598.7	600.5	602.2
130°	602.6	607.5	612.4	615.6	617.3	618.8	620.4	622.0
132.5°	622.4	627.1	631.8	634.9	636.4	637.8	639.3	640.8
135°	648.0	652.5	657.0	660.2	662.1	664.0	665.8	667.7
137.5°	673.6	677.7	681.9	684.6	685.8	687.1	688.3	689.6
140°	689.5	693.4	697.2	699.9	701.4	702.8	704.3	705.8
142.5°	704.9	708.3	711.5	713.8	715.0	716.1	717.2	718.3
145°	727.5	729.3	731.0	732.5	733.9	735.2	736.6	738.0
147.5°	747.6	748.0	748.3	749.0	749.9	751.0	751.9	752.9
150°	761.8	761.8	761.8	761.9	762.1	762.2	762.3	762.4
152.5°	774.6	774.7	775.0	775.1	775.0	774.9	774.8	774.7
155°	791.7	792.3	792.8	792.9	792.5	792.0	791.6	791.3
157.5°	806.5	807.3	808.0	808.0	807.3	806.5	805.7	805.0
160°	816.0	816.7	817.6	817.6	816.7	816.0	815.1	814.2
162.5°	823.6	824.4	825.3	825.3	824.3	823.3	822.3	821.4
165°	834.4	835.5	836.6	836.6	835.3	834.1	832.8	831.5
167.5°	842.3	843.5	844.8	844.7	843.3	841.9	840.4	839.0
170°	847.1	848.3	849.5	849.3	847.9	846.4	845.1	843.6
172.5°	850.2	851.4	852.5	852.3	850.8	849.3	847.7	846.2
175°	853.9	855.1	856.4	856.2	854.5	852.8	851.1	849.4
177.5°	855.3	856.2	857.1	856.9	855.5	854.1	852.8	851.4
180°	854.5	854.5	854.5	854.5	854.5	854.5	854.5	854.5

(END OF REPORT)