

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: P332814-930

Luminaire Tested: **S124DIW-S1020D770U930-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332814-930
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-S1020D770U930-4F0-1E-UDD-D1
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 770 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5604.5 lumens
Efficiency: N/A
Efficacy: 104.6 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

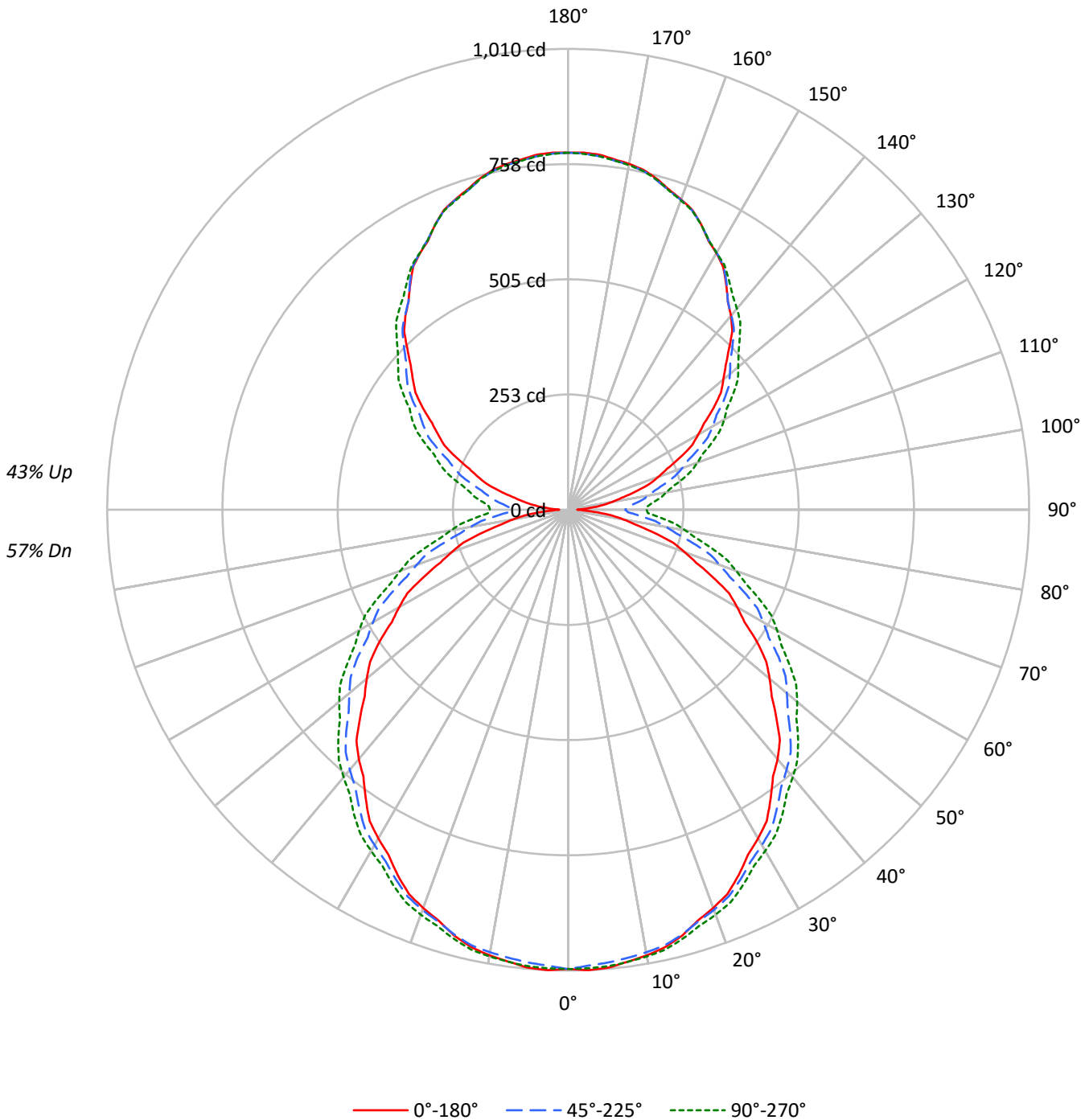
Input Watts (W): 53.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P332814-930

CATALOG NUMBER: S124DIW-S1020D770U930-4F0-1E-UDD-D1

Luminous Intensity Polar Plot





TEST NUMBER: P332814-930

CATALOG NUMBER: S124DIW-S1020D770U930-4F0-1E-UDD-D1

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	109	109	109	109	101	101	101	101	87	87	87	74	74	74	62	62	62	57
1	98	93	89	85	91	87	83	80	75	72	69	63	61	59	53	52	50	45
2	89	81	74	68	82	75	69	64	65	60	56	55	52	49	46	44	41	37
3	81	71	63	56	75	66	59	53	57	51	47	48	44	41	40	37	35	31
4	74	62	54	47	68	58	51	45	50	44	40	43	38	34	36	32	30	26
5	68	55	47	40	62	52	44	38	45	39	34	38	33	30	32	29	26	22
6	62	50	41	35	57	46	39	33	40	34	29	34	30	26	29	25	22	19
7	57	45	36	31	53	42	34	29	36	30	26	31	26	23	27	23	20	17
8	53	40	32	27	49	38	31	26	33	27	23	29	24	20	24	20	18	15
9	50	37	29	24	46	35	28	23	30	25	20	26	22	18	22	19	16	14
10	46	34	26	21	43	32	25	20	28	22	18	24	20	16	21	17	14	12

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	8127	8127	8127
5°	8151	7942	7965
10°	8102	7812	7807
15°	8029	7662	7620
20°	7920	7496	7438
25°	7797	7310	7239
30°	7663	7125	7034
35°	7511	6935	6855
40°	7390	6755	6667
45°	7210	6588	6507
50°	7059	6397	6337
55°	6902	6217	6138
60°	6657	5986	5956
65°	6389	5740	5734
70°	6066	5458	5474
75°	5612	5146	5239
80°	5110	4847	5007
85°	4474	4583	4872



TEST NUMBER: P332814-930

CATALOG NUMBER: S124DIW-S1020D770U930-4F0-1E-UDD-D1

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	95.3	1.7
10°-20°	273.1	4.9
20°-30°	413.0	7.4
30°-40°	499.7	8.9
40°-50°	528.2	9.4
50°-60°	497.1	8.9
60°-70°	412.5	7.4
70°-80°	289.7	5.2
80°-90°	166.1	3.0
90°-100°	148.9	2.7
100°-110°	224.9	4.0
110°-120°	307.8	5.5
120°-130°	369.4	6.6
130°-140°	396.0	7.1
140°-150°	380.0	6.8
150°-160°	317.6	5.7
160°-170°	211.3	3.8
170°-180°	74.0	1.3
0°-30°	781.4	13.9
0°-40°	1281.1	22.9
0°-60°	2306.5	41.2
0°-90°	3174.8	56.6
90°-120°	681.5	12.2
90°-150°	1826.9	32.6
90°-180°	2430.0	43.4
0°-180°	5604.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1007	1007	1007	1007	1007	
5°	1008	1004	996	1005	1004	96
15°	966	967	964	973	973	272
25°	884	890	894	906	907	407
35°	773	787	798	813	817	484
45°	645	666	688	706	712	498
55°	505	529	562	584	592	450
65°	349	386	424	451	461	346
75°	194	236	283	313	325	206
85°	60	107	158	190	203	64
90°	20	72	125	160	172	14
95°	51	94	144	175	186	52
105°	151	175	218	247	259	161
115°	271	282	316	339	347	267
125°	389	389	415	435	441	347
135°	498	502	509	526	531	385
145°	603	604	605	611	614	377
155°	690	690	689	691	689	317
165°	751	749	748	751	749	212
175°	781	778	778	781	778	74
180°	782	782	782	782	782	



TEST NUMBER: P332814-930

CATALOG NUMBER: S124DIW-S1020D770U930-4F0-1E-UDD-D1

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1006.7	1006.7	1006.7	1006.7	1006.7	1006.7	1006.7	1006.7	1006.7	1006.7	1006.7
2.5°	1010.2	1009.7	1009.0	1008.4	1007.8	1006.7	1005.1	1003.6	1001.9	1000.3	1001.7
5°	1007.7	1007.0	1006.2	1005.5	1004.8	1003.5	1001.8	1000.0	998.3	996.5	998.5
7.5°	999.1	998.7	998.3	997.8	997.4	996.5	995.0	993.5	992.1	990.6	992.9
10°	992.0	991.7	991.5	991.2	991.0	990.2	989.0	987.7	986.4	985.2	987.5
12.5°	982.0	982.0	981.9	981.9	981.9	981.4	980.6	979.7	978.8	978.0	980.1
15°	966.0	966.3	966.5	966.8	967.0	966.8	966.0	965.3	964.5	963.8	966.0
17.5°	944.2	944.9	945.7	946.4	947.2	947.5	947.3	947.2	947.1	946.9	949.2
20°	928.9	929.6	930.3	931.1	931.9	932.4	932.6	932.9	933.1	933.4	935.9
22.5°	911.7	912.6	913.6	914.6	915.5	916.2	916.6	917.1	917.5	918.0	920.6
25°	883.8	885.3	886.7	888.3	889.7	890.9	891.6	892.4	893.2	893.9	896.7
27.5°	852.6	854.8	857.0	859.2	861.4	863.2	864.3	865.4	866.6	867.7	870.3
30°	831.9	833.9	835.9	837.9	839.9	841.8	843.5	845.3	847.0	848.8	851.6
32.5°	809.3	811.8	814.2	816.6	819.0	821.2	823.1	825.1	827.0	829.0	832.1
35°	773.3	776.3	779.3	782.3	785.3	788.1	790.6	793.0	795.6	798.1	801.6
37.5°	736.9	740.5	743.9	747.4	750.8	754.1	757.2	760.3	763.4	766.5	770.1
40°	713.5	716.8	720.1	723.3	726.6	729.9	733.4	736.9	740.5	744.0	747.7
42.5°	686.5	690.2	693.8	697.5	701.1	705.0	709.1	713.2	717.3	721.5	725.6
45°	644.7	649.5	654.3	659.1	663.8	668.5	673.4	678.1	682.8	687.6	691.9
47.5°	604.9	609.8	614.7	619.6	624.5	629.7	635.2	640.7	646.3	651.8	656.2
50°	576.0	581.6	587.0	592.6	598.0	603.6	609.1	614.6	620.1	625.6	630.6
52.5°	547.1	552.7	558.2	563.7	569.2	575.1	581.4	587.7	594.0	600.4	605.4
55°	505.0	510.3	515.5	520.8	526.0	532.4	540.0	547.5	555.0	562.5	567.5
57.5°	457.9	464.4	470.9	477.4	484.0	490.9	498.4	505.9	513.3	520.8	526.8
60°	427.2	433.7	440.3	446.8	453.3	460.6	469.0	477.2	485.4	493.7	499.5
62.5°	397.5	404.6	411.7	418.8	425.9	433.6	441.9	450.1	458.4	466.7	472.5
65°	349.4	357.4	365.5	373.5	381.5	389.8	398.3	406.8	415.3	423.9	430.1
67.5°	303.2	311.8	320.2	328.8	337.3	346.1	355.2	364.4	373.5	382.6	389.0
70°	271.7	280.2	288.7	297.2	305.7	314.8	324.2	333.8	343.3	352.9	359.6
72.5°	241.0	249.7	258.4	267.2	275.9	285.3	295.4	305.5	315.7	325.8	332.3
75°	193.9	203.2	212.4	221.7	231.0	240.8	251.4	261.9	272.4	282.9	289.9
77.5°	149.9	159.7	169.6	179.4	189.2	199.6	210.7	221.7	232.7	243.7	250.8
80°	122.9	132.9	142.9	153.0	163.0	173.5	184.5	195.5	206.5	217.5	225.1
82.5°	95.8	106.2	116.7	127.1	137.5	148.2	159.2	170.2	181.3	192.3	200.0
85°	59.8	70.3	80.8	91.3	101.8	112.8	124.0	135.3	146.5	157.8	165.3
87.5°	33.8	44.3	54.8	65.3	75.8	86.7	97.8	109.0	120.2	131.4	138.8
90°	19.8	31.4	42.9	54.4	65.9	77.5	89.4	101.2	113.1	124.9	133.0
92.5°	30.1	40.8	51.5	62.2	73.0	84.1	95.6	107.1	118.6	130.1	137.7
95°	51.0	60.4	70.0	79.4	88.9	99.2	110.4	121.6	132.8	144.1	151.2
97.5°	76.7	84.8	92.9	100.9	109.0	118.7	130.0	141.3	152.5	163.8	170.9
100°	97.1	104.2	111.2	118.3	125.3	134.4	145.3	156.3	167.3	178.2	185.3
102.5°	119.4	125.3	131.3	137.1	143.1	151.4	162.1	172.8	183.4	194.0	201.1
105°	151.2	156.3	161.4	166.6	171.7	179.2	189.0	198.8	208.6	218.4	225.1
107.5°	186.6	190.9	195.2	199.4	203.7	210.3	219.1	228.0	236.8	245.6	252.2
110°	209.9	213.7	217.4	221.3	225.0	231.2	239.9	248.5	257.1	265.8	271.3



TEST NUMBER: P332814-930

CATALOG NUMBER: S124DIW-S1020D770U930-4F0-1E-UDD-D1

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	234.2	237.3	240.5	243.7	246.8	252.5	260.6	268.7	276.9	284.9	290.5
115°	270.6	272.9	275.1	277.4	279.6	284.6	292.4	300.1	307.9	315.6	321.0
117.5°	306.0	307.4	308.8	310.3	311.8	316.2	323.4	330.7	338.0	345.3	350.0
120°	328.7	330.0	331.3	332.6	333.9	338.0	344.9	351.7	358.6	365.4	369.7
122.5°	353.4	353.8	354.2	354.6	354.9	358.4	365.1	371.8	378.5	385.1	389.7
125°	388.7	388.5	388.2	388.0	387.8	390.7	396.8	402.9	409.0	415.2	419.7
127.5°	421.6	421.8	421.8	422.0	422.2	424.5	429.2	433.7	438.3	443.0	447.2
130°	443.9	444.0	444.2	444.3	444.5	446.6	450.6	454.6	458.6	462.6	466.8
132.5°	467.7	467.7	467.7	467.7	467.8	469.4	472.5	475.6	478.7	481.8	485.8
135°	497.8	498.6	499.5	500.3	501.1	502.3	504.1	505.8	507.6	509.3	513.1
137.5°	532.0	532.1	532.2	532.3	532.5	533.0	534.1	535.2	536.3	537.4	540.6
140°	554.7	554.7	554.7	554.8	554.8	554.9	555.1	555.5	555.7	556.0	559.1
142.5°	574.6	574.9	575.0	575.3	575.5	575.5	575.2	574.9	574.7	574.5	577.3
145°	603.2	603.5	603.8	604.1	604.4	604.5	604.7	604.9	605.0	605.1	606.5
147.5°	631.8	632.2	632.6	632.9	633.3	633.5	633.4	633.2	633.2	633.1	633.2
150°	649.2	649.5	649.8	650.0	650.4	650.5	650.5	650.5	650.5	650.5	650.5
152.5°	664.7	665.0	665.3	665.5	665.9	666.0	666.1	666.3	666.3	666.4	666.8
155°	689.8	689.8	689.8	689.8	689.8	689.7	689.6	689.5	689.3	689.3	689.7
157.5°	711.1	710.9	710.6	710.4	710.1	710.0	710.0	710.0	710.0	709.9	710.3
160°	723.7	723.6	723.4	723.3	723.2	723.0	722.9	722.8	722.6	722.5	722.9
162.5°	735.3	735.0	734.6	734.3	733.9	733.7	733.5	733.4	733.3	733.1	733.9
165°	751.0	750.6	750.2	749.7	749.3	749.0	748.7	748.4	748.2	747.9	748.7
167.5°	762.9	762.4	761.8	761.2	760.7	760.3	760.4	760.4	760.4	760.5	761.3
170°	769.7	769.0	768.3	767.7	767.0	766.7	766.9	767.0	767.1	767.3	768.1
172.5°	774.5	774.0	773.4	772.8	772.3	772.0	772.0	772.1	772.1	772.1	773.1
175°	781.2	780.5	779.8	779.2	778.5	778.1	778.0	777.8	777.7	777.6	778.5
177.5°	783.3	782.9	782.3	781.8	781.2	781.0	781.0	781.0	781.0	781.0	781.7
180°	782.4	782.4	782.4	782.4	782.4	782.4	782.4	782.4	782.4	782.4	782.4



TEST NUMBER: P332814-930

CATALOG NUMBER: S124DIW-S1020D770U930-4F0-1E-UDD-D1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1006.7	1006.7	1006.7	1006.7	1006.7	1006.7	1006.7	1006.7
2.5°	1003.1	1004.5	1005.9	1006.5	1006.3	1006.1	1005.9	1005.8
5°	1000.5	1002.5	1004.5	1005.3	1005.1	1004.9	1004.6	1004.4
7.5°	995.2	997.4	999.6	1000.6	1000.4	1000.1	999.9	999.6
10°	989.7	992.0	994.3	995.2	995.0	994.7	994.5	994.3
12.5°	982.1	984.1	986.2	987.2	987.2	987.1	987.1	987.0
15°	968.3	970.5	972.8	973.8	973.5	973.3	973.1	972.8
17.5°	951.5	953.8	956.1	957.2	956.9	956.8	956.5	956.3
20°	938.3	940.9	943.4	944.6	944.6	944.6	944.6	944.6
22.5°	923.0	925.5	928.1	929.5	929.9	930.3	930.7	931.1
25°	899.4	902.1	904.9	906.4	906.7	906.9	907.2	907.4
27.5°	872.9	875.4	878.0	879.4	879.7	880.0	880.3	880.6
30°	854.4	857.0	859.8	861.4	861.9	862.4	863.0	863.5
32.5°	835.3	838.5	841.6	843.4	843.9	844.4	844.9	845.5
35°	805.1	808.6	812.1	814.2	815.0	815.7	816.5	817.3
37.5°	773.6	777.2	780.7	782.9	783.7	784.6	785.3	786.1
40°	751.5	755.2	759.0	761.4	762.4	763.4	764.4	765.4
42.5°	729.8	733.9	738.1	740.5	741.4	742.2	743.0	743.7
45°	696.1	700.4	704.7	707.4	708.7	709.9	711.2	712.4
47.5°	660.6	665.0	669.4	672.4	673.8	675.4	676.9	678.4
50°	635.6	640.7	645.6	648.9	650.4	651.9	653.4	654.9
52.5°	610.4	615.4	620.4	623.6	625.2	626.6	628.2	629.7
55°	572.5	577.6	582.5	585.8	587.3	588.8	590.3	591.8
57.5°	532.7	538.7	544.6	548.3	549.7	551.1	552.5	553.9
60°	505.2	511.0	516.7	520.7	522.7	524.6	526.7	528.6
62.5°	478.2	484.0	489.8	493.6	495.6	497.6	499.6	501.7
65°	436.3	442.6	448.9	453.1	455.0	457.1	459.0	461.1
67.5°	395.3	401.7	408.1	412.2	414.2	416.1	418.1	420.0
70°	366.3	373.1	379.8	384.2	385.9	387.7	389.4	391.2
72.5°	338.9	345.4	352.0	356.3	358.2	360.2	362.2	364.1
75°	296.9	303.9	311.0	315.6	317.9	320.2	322.4	324.7
77.5°	258.0	265.1	272.1	277.0	279.3	281.8	284.1	286.6
80°	232.6	240.1	247.6	252.3	254.4	256.4	258.4	260.4
82.5°	207.7	215.5	223.1	228.1	230.3	232.5	234.7	236.9
85°	172.8	180.3	187.8	192.9	195.4	197.9	200.4	202.9
87.5°	146.3	153.7	161.1	165.9	168.2	170.5	172.7	175.0
90°	141.0	149.1	157.2	162.3	164.6	166.9	169.2	171.5
92.5°	145.2	152.8	160.4	165.2	167.4	169.5	171.7	173.8
95°	158.4	165.6	172.8	177.4	179.7	182.0	184.2	186.5
97.5°	177.9	185.0	192.0	196.6	198.8	200.9	203.1	205.2
100°	192.3	199.3	206.4	210.8	212.5	214.3	216.1	217.8
102.5°	208.0	214.9	221.8	226.3	228.4	230.5	232.5	234.6
105°	231.7	238.4	245.1	249.6	252.0	254.5	256.8	259.3
107.5°	258.7	265.2	271.8	276.0	277.7	279.5	281.3	283.1
110°	276.7	282.3	287.7	291.6	294.1	296.5	298.9	301.3



TEST NUMBER: P332814-930

CATALOG NUMBER: S124DIW-S1020D770U930-4F0-1E-UDD-D1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	296.0	301.5	307.0	310.8	312.9	315.0	317.1	319.1
115°	326.4	331.7	337.1	340.6	342.2	343.8	345.4	347.1
117.5°	354.7	359.5	364.3	367.5	369.2	371.0	372.8	374.5
120°	374.1	378.5	382.8	386.1	388.3	390.6	392.9	395.2
122.5°	394.3	398.8	403.3	406.3	407.6	409.0	410.3	411.6
125°	424.2	428.7	433.2	436.0	437.2	438.5	439.7	441.0
127.5°	451.4	455.7	459.9	462.8	464.2	465.7	467.2	468.7
130°	471.1	475.3	479.6	482.2	483.1	484.1	485.1	486.1
132.5°	489.8	493.9	497.9	500.6	501.9	503.2	504.4	505.7
135°	516.8	520.6	524.3	526.8	527.8	529.0	530.0	531.2
137.5°	544.0	547.2	550.6	552.9	554.2	555.5	556.8	558.2
140°	562.1	565.3	568.4	570.5	571.7	572.7	573.9	575.0
142.5°	580.1	582.9	585.8	587.7	588.7	589.7	590.8	591.8
145°	607.8	609.2	610.6	611.6	612.1	612.8	613.3	613.9
147.5°	633.2	633.3	633.4	633.8	634.5	635.1	635.9	636.5
150°	650.5	650.5	650.5	650.4	650.3	650.1	650.0	649.9
152.5°	667.1	667.4	667.7	667.7	667.4	667.1	666.7	666.3
155°	690.3	690.8	691.4	691.4	690.8	690.3	689.7	689.3
157.5°	710.7	711.1	711.5	711.5	711.0	710.6	710.1	709.6
160°	723.3	723.7	724.1	724.0	723.3	722.6	721.9	721.3
162.5°	734.6	735.3	736.1	736.1	735.4	734.7	734.1	733.4
165°	749.5	750.3	751.1	751.3	750.7	750.2	749.7	749.1
167.5°	762.1	762.9	763.7	763.7	762.9	762.1	761.2	760.3
170°	768.9	769.7	770.5	770.5	769.5	768.6	767.6	766.7
172.5°	774.0	774.9	775.8	775.8	774.8	773.9	772.9	772.0
175°	779.4	780.4	781.3	781.3	780.4	779.4	778.5	777.6
177.5°	782.4	783.2	784.0	783.9	783.0	782.2	781.3	780.5
180°	782.4	782.4	782.4	782.4	782.4	782.4	782.4	782.4

(END OF REPORT)