

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: P332807-930

Luminaire Tested: **S124DIW-S1020D470U930-4F0-1E-UDD-D**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332807-930
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-S1020D470U930-4F0-1E-UDD-D
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 470 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4961.0 lumens
Efficiency: N/A
Efficacy: 107.4 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: Semi-Direct

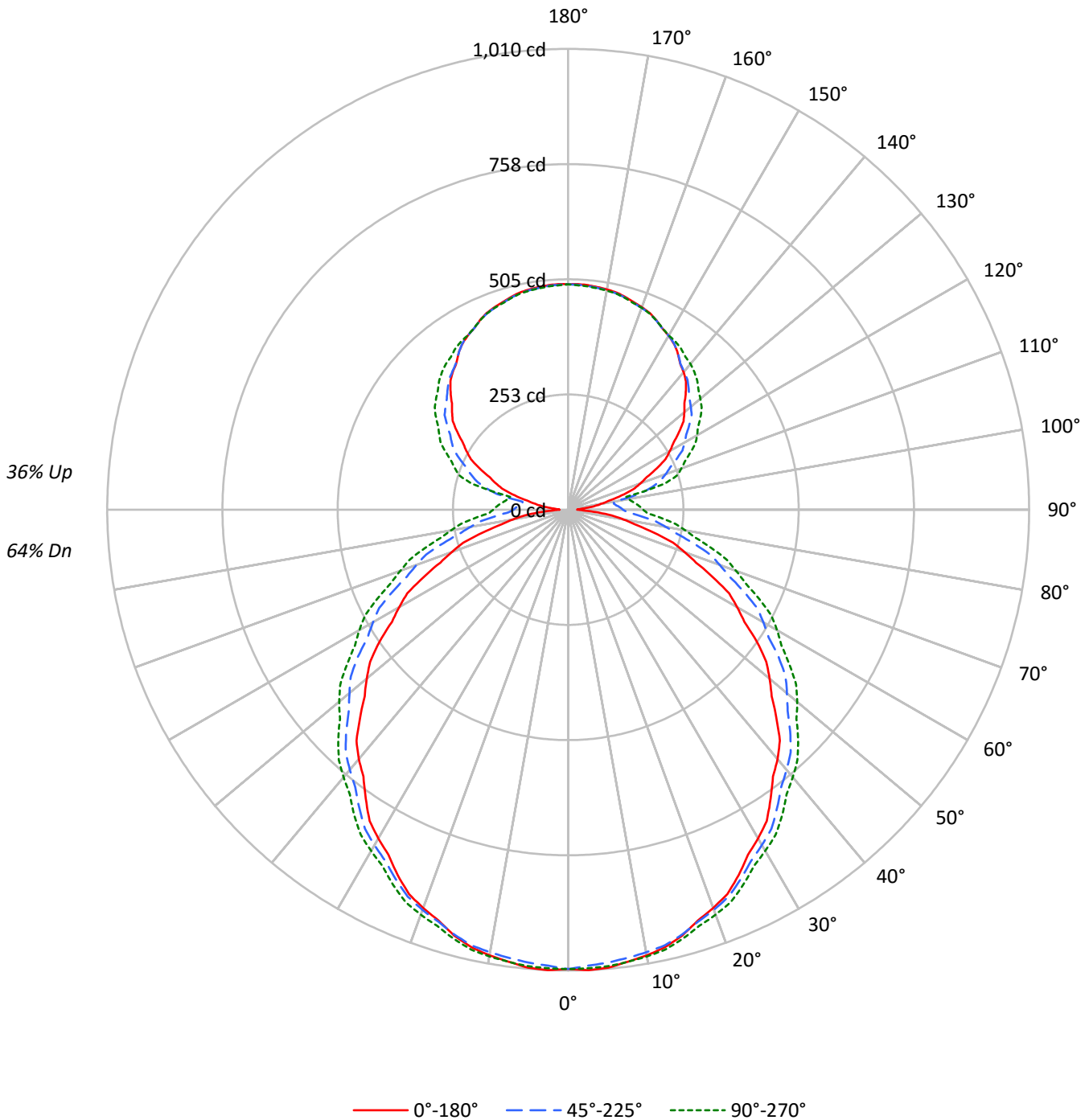
Input Watts (W): 46.2
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P332807-930

CATALOG NUMBER: S124DIW-S1020D470U930-4F0-1E-UDD-D

Luminous Intensity Polar Plot





TEST NUMBER: P332807-930

CATALOG NUMBER: S124DIW-S1020D470U930-4F0-1E-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	110	110	110	110	104	104	104	104	91	91	91	80	80	80	69	69	69	64
1	100	95	90	86	93	89	85	81	78	75	72	68	66	64	59	57	56	51
2	90	82	75	69	84	77	71	66	68	63	59	59	55	52	51	48	46	42
3	82	72	64	57	76	67	60	54	59	54	49	52	47	44	45	41	38	35
4	75	63	55	48	70	59	52	46	52	46	41	46	41	37	40	36	33	29
5	69	56	47	41	64	53	45	39	47	40	35	41	36	32	36	32	28	25
6	63	50	42	35	59	47	40	34	42	36	31	37	32	28	32	28	25	22
7	58	45	37	31	55	43	35	30	38	32	27	34	28	24	29	25	22	19
8	54	41	33	27	51	39	31	26	35	28	24	31	26	22	27	23	20	17
9	50	38	30	24	47	36	28	23	32	26	21	28	23	20	25	21	18	15
10	47	35	27	22	44	33	26	21	29	23	19	26	21	18	23	19	16	14

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: P332807-930

CATALOG NUMBER: S124DIW-S1020D470U930-4F0-1E-UDD-D

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	95.3	1.9
10°-20°	273.1	5.5
20°-30°	413.0	8.3
30°-40°	499.7	10.1
40°-50°	528.2	10.6
50°-60°	497.1	10.0
60°-70°	412.5	8.3
70°-80°	289.7	5.8
80°-90°	165.2	3.3
90°-100°	114.2	2.3
100°-110°	179.7	3.6
110°-120°	254.4	5.1
120°-130°	288.9	5.8
130°-140°	291.7	5.9
140°-150°	264.1	5.3
150°-160°	211.1	4.3
160°-170°	136.1	2.7
170°-180°	46.9	0.9
0°-30°	781.4	15.8
0°-40°	1281.1	25.8
0°-60°	2306.5	46.5
0°-90°	3173.9	64.0
90°-120°	548.3	11.1
90°-150°	1393.0	28.1
90°-180°	1787.0	36.0
0°-180°	4961.0	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°	19	68	120	153	164	13
95°	35	61	106	138	149	38
105°	121	147	190	219	217	128
115°	214	227	261	286	295	211
125°	296	298	324	346	354	265
135°	364	364	373	392	400	281
145°	419	419	419	426	431	262
155°	458	458	457	458	458	211
165°	483	481	481	484	481	136
175°	494	492	492	495	491	47
180°	494	494	494	494	494	



TEST NUMBER: P332807-930

CATALOG NUMBER: S124DIW-S1020D470U930-4F0-1E-UDD-D

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°	33.6	44.0	54.4	64.8	75.2	85.9	97.0	108.2	119.3	130.4	137.7
90°	19.2	30.1	41.0	51.9	62.9	74.0	85.4	96.9	108.3	119.7	127.5
92.5°	21.8	30.8	39.9	49.0	58.0	68.3	79.7	91.2	102.6	114.0	121.6
95°	35.0	40.4	45.9	51.4	56.9	64.8	75.2	85.5	95.9	106.2	113.5
97.5°	56.4	65.3	74.2	83.0	91.9	96.8	97.8	98.8	99.8	100.9	107.5
100°	73.0	81.0	88.9	96.9	104.9	108.2	106.6	105.0	103.5	101.9	107.3
102.5°	92.5	99.3	106.1	112.9	119.7	127.1	135.3	143.3	151.4	159.5	151.0
105°	121.4	126.9	132.4	137.9	143.4	151.0	160.6	170.3	180.0	189.7	196.7
107.5°	150.0	154.4	158.7	163.1	167.5	174.3	183.6	193.0	202.3	211.6	218.1
110°	168.6	172.4	176.2	179.9	183.7	190.1	199.4	208.7	217.9	227.2	233.1



TEST NUMBER: P332807-930

CATALOG NUMBER: S124DIW-S1020D470U930-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	186.6	190.2	193.7	197.3	200.9	206.9	215.5	224.1	232.7	241.3	246.9
115°	214.4	217.0	219.4	221.9	224.5	229.7	237.6	245.5	253.5	261.4	267.0
117.5°	240.4	242.1	243.8	245.5	247.1	251.8	259.4	267.1	274.8	282.4	287.6
120°	257.2	258.4	259.4	260.5	261.5	265.7	272.9	280.1	287.2	294.4	299.6
122.5°	273.8	274.2	274.5	274.8	275.2	278.8	285.8	292.9	299.8	306.8	311.9
125°	296.4	296.5	296.6	296.6	296.7	299.8	305.9	312.0	318.1	324.2	329.2
127.5°	318.6	318.5	318.3	318.1	318.0	320.5	325.7	330.8	336.1	341.2	345.7
130°	332.2	332.1	331.9	331.7	331.6	333.6	337.9	342.1	346.3	350.6	355.2
132.5°	345.5	345.4	345.4	345.2	345.1	346.8	350.3	353.8	357.3	360.9	365.3
135°	364.4	364.3	364.2	364.1	364.0	365.0	367.1	369.2	371.3	373.3	377.6
137.5°	382.0	381.8	381.6	381.4	381.2	381.6	382.9	384.1	385.3	386.5	390.4
140°	393.5	393.5	393.4	393.3	393.2	393.4	393.8	394.2	394.6	395.0	398.5
142.5°	403.0	403.2	403.5	403.7	404.0	404.1	404.0	404.0	403.9	403.9	406.9
145°	418.7	418.7	418.7	418.7	418.7	418.7	418.7	418.7	418.7	418.7	420.2
147.5°	431.3	431.5	431.7	431.9	432.1	432.2	432.1	432.0	431.9	431.9	432.1
150°	440.4	440.5	440.6	440.7	440.8	440.8	440.7	440.6	440.5	440.4	440.4
152.5°	447.3	447.4	447.7	447.8	448.1	448.1	448.0	447.8	447.7	447.5	447.7
155°	457.8	457.9	458.0	458.0	458.1	458.0	457.8	457.5	457.3	457.1	457.4
157.5°	466.9	466.8	466.8	466.8	466.7	466.5	466.3	465.9	465.7	465.5	465.9
160°	472.2	472.0	471.7	471.5	471.2	471.1	471.0	470.9	470.8	470.8	471.2
162.5°	477.0	476.6	476.3	476.0	475.7	475.5	475.4	475.3	475.2	475.2	475.6
165°	482.9	482.5	482.1	481.7	481.3	481.1	481.1	481.1	481.1	481.1	481.8
167.5°	487.6	487.2	486.8	486.4	485.9	485.7	485.7	485.6	485.6	485.5	486.2
170°	490.3	489.8	489.3	488.9	488.4	488.1	488.2	488.3	488.4	488.4	489.1
172.5°	492.1	491.6	491.1	490.6	490.2	489.9	490.0	490.1	490.2	490.2	490.9
175°	494.0	493.5	493.0	492.5	492.0	491.9	492.0	492.0	492.1	492.2	492.9
177.5°	494.9	494.5	494.0	493.5	493.1	492.9	493.0	493.2	493.3	493.4	493.9
180°	494.0	494.0	494.0	494.0	494.0	494.0	494.0	494.0	494.0	494.0	494.0



TEST NUMBER: P332807-930

CATALOG NUMBER: S124DIW-S1020D470U930-4F0-1E-UDD-D

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°	145.0	152.5	159.8	164.6	166.8	169.1	171.3	173.6
90°	135.3	143.0	150.7	155.7	157.9	160.0	162.2	164.4
92.5°	129.1	136.7	144.2	149.0	151.1	153.1	155.2	157.2
95°	120.7	128.0	135.3	140.0	142.4	144.7	147.0	149.4
97.5°	114.1	120.7	127.3	131.7	134.0	136.2	138.4	140.6
100°	112.7	118.1	123.4	127.0	128.8	130.7	132.5	134.4
102.5°	142.5	134.0	125.5	122.2	124.3	126.2	128.2	130.1
105°	203.7	210.7	217.7	220.7	219.7	218.8	217.8	216.9
107.5°	224.6	231.1	237.7	242.0	244.1	246.2	248.3	250.5
110°	239.0	245.0	250.9	255.0	257.2	259.5	261.7	264.0



TEST NUMBER: P332807-930

CATALOG NUMBER: S124DIW-S1020D470U930-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	252.3	257.9	263.4	267.3	269.7	272.0	274.3	276.6
115°	272.7	278.4	284.1	287.8	289.5	291.3	293.0	294.8
117.5°	292.8	297.9	303.1	306.7	308.7	310.6	312.6	314.5
120°	304.8	310.0	315.1	318.6	320.5	322.3	324.2	326.0
122.5°	317.0	322.1	327.2	330.6	332.2	333.9	335.5	337.1
125°	334.2	339.2	344.2	347.5	349.1	350.7	352.3	353.8
127.5°	350.2	354.6	359.1	362.2	363.8	365.4	367.0	368.7
130°	359.8	364.4	369.0	372.0	373.6	375.0	376.5	378.1
132.5°	369.7	374.1	378.5	381.4	382.8	384.3	385.7	387.1
135°	381.7	385.9	390.0	393.0	394.6	396.3	397.9	399.7
137.5°	394.2	398.0	401.9	404.4	405.6	406.8	408.0	409.2
140°	402.0	405.5	409.0	411.5	412.8	414.1	415.5	416.8
142.5°	409.9	412.9	416.0	418.1	419.1	420.2	421.3	422.3
145°	421.8	423.4	425.0	426.3	427.5	428.7	429.8	431.0
147.5°	432.4	432.7	432.9	433.5	434.4	435.3	436.2	437.0
150°	440.4	440.4	440.4	440.5	440.6	440.7	440.8	440.8
152.5°	447.8	447.9	448.1	448.1	448.1	448.0	447.9	447.9
155°	457.7	458.0	458.4	458.4	458.2	458.0	457.7	457.5
157.5°	466.3	466.7	467.1	467.1	466.7	466.3	465.9	465.5
160°	471.7	472.2	472.7	472.7	472.2	471.7	471.2	470.8
162.5°	476.1	476.6	477.1	477.1	476.5	476.0	475.4	474.9
165°	482.4	483.1	483.7	483.6	482.9	482.2	481.4	480.7
167.5°	487.0	487.7	488.4	488.4	487.5	486.7	485.9	485.1
170°	489.8	490.4	491.1	491.1	490.2	489.3	488.5	487.7
172.5°	491.5	492.2	492.8	492.8	491.9	491.0	490.1	489.2
175°	493.7	494.4	495.1	495.0	494.0	493.0	492.0	491.1
177.5°	494.5	495.0	495.5	495.4	494.6	493.8	493.0	492.3
180°	494.0	494.0	494.0	494.0	494.0	494.0	494.0	494.0

(END OF REPORT)