

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: P332412-930

Luminaire Tested: **S123RDIW-S560D460U930-4F0-1E-UDD-F**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332412-930
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-5,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S123RDIW-S560D460U930-4F0-1E-UDD-F
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 560 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 460 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3244.5 lumens
Efficiency: N/A
Efficacy: 107.4 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.06 / 1.22
Luminous Opening: Rectangular (W 0.25' x L: 4' x H: 0')
CIE Type: General Diffuse

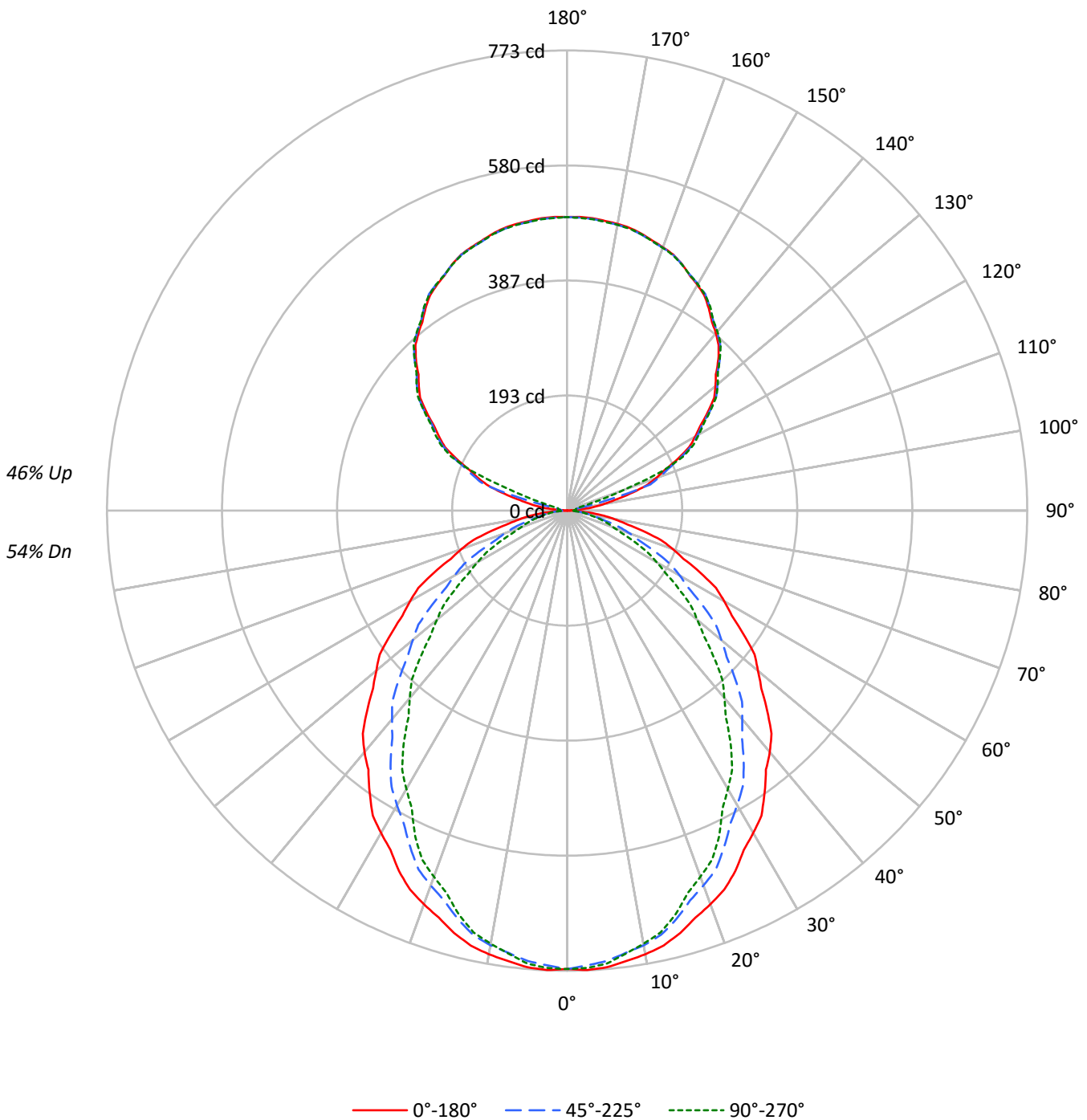
Input Watts (W): 30.2
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P332412-930

CATALOG NUMBER: S123RDIW-S560D460U930-4F0-1E-UDD-F

Luminous Intensity Polar Plot





TEST NUMBER: P332412-930

CATALOG NUMBER: S123RDIW-S560D460U930-4F0-1E-UDD-F

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	54
1	99	95	91	88	92	88	85	82	75	73	71	64	62	61	53	52	51	46
2	90	83	77	72	84	77	72	68	66	63	59	56	54	51	47	45	43	39
3	83	73	66	60	76	68	62	57	59	54	50	50	47	44	42	40	37	33
4	76	65	57	51	70	61	54	49	53	47	43	45	41	38	38	35	32	29
5	70	58	50	44	64	54	47	42	47	42	37	40	36	33	34	31	28	25
6	64	52	44	39	59	49	42	37	43	37	33	37	32	29	31	28	25	22
7	60	47	39	34	55	44	37	32	39	33	29	33	29	26	29	25	23	20
8	55	43	35	30	51	40	34	29	35	30	26	31	26	23	26	23	20	18
9	52	39	32	27	48	37	30	26	33	27	23	28	24	21	24	21	18	16
10	48	36	29	24	45	34	28	23	30	25	21	26	22	19	23	19	17	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	8289	8289	8289
5°	8321	8206	8253
10°	8273	8103	8075
15°	8184	7913	7830
20°	8062	7676	7497
25°	7936	7410	7172
30°	7771	7102	6714
35°	7599	6795	6294
40°	7442	6433	5774
45°	7234	6075	5305
50°	7006	5668	4779
55°	6775	5204	4290
60°	6562	4706	3750
65°	6283	4167	3212
70°	5936	3500	2593
75°	5427	2753	2441
80°	4841	2442	2244
85°	4088	2149	2001



TEST NUMBER: P332412-930

CATALOG NUMBER: S123RDIW-S560D460U930-4F0-1E-UDD-F

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	72.3	2.2
10°-20°	201.2	6.2
20°-30°	289.7	8.9
30°-40°	326.3	10.1
40°-50°	312.2	9.6
50°-60°	255.7	7.9
60°-70°	172.5	5.3
70°-80°	86.8	2.7
80°-90°	24.3	0.8
90°-100°	17.9	0.6
100°-110°	85.4	2.6
110°-120°	205.2	6.3
120°-130°	261.3	8.1
130°-140°	279.2	8.6
140°-150°	261.1	8.0
150°-160°	210.6	6.5
160°-170°	135.9	4.2
170°-180°	46.8	1.4
0°-30°	563.2	17.4
0°-40°	889.5	27.4
0°-60°	1457.4	44.9
0°-90°	1741.0	53.7
90°-120°	308.6	9.5
90°-150°	1110.2	34.2
90°-180°	1504.0	46.4
0°-180°	3244.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	770	770	770	770	770	
5°	770	767	760	765	764	73
15°	734	727	710	707	703	207
25°	668	652	624	611	604	307
35°	578	555	517	491	479	362
45°	475	446	399	365	348	367
55°	361	329	277	242	229	324
65°	247	212	164	134	126	244
75°	130	100	66	60	59	139
85°	33	20	17	16	16	37
90°	0	4	9	10	11	3
95°	22	8	11	14	14	28
105°	109	111	80	19	16	116
115°	205	207	210	214	215	202
125°	289	291	293	294	294	258
135°	359	362	363	364	363	277
145°	415	417	418	419	419	259
155°	457	456	456	458	456	210
165°	482	481	480	483	481	136
175°	493	491	492	494	491	47
180°	493	493	493	493	493	



TEST NUMBER: P332412-930

CATALOG NUMBER: S123RDIW-S560D460U930-4F0-1E-UDD-F

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	770.1	770.1	770.1	770.1	770.1	770.1	770.1	770.1	770.1	770.1	770.1
2.5°	772.6	772.1	771.7	771.2	770.8	769.9	768.6	767.2	765.9	764.6	765.8
5°	770.1	769.4	768.7	768.0	767.3	766.1	764.4	762.8	761.1	759.5	760.7
7.5°	763.0	762.2	761.4	760.7	759.9	758.5	756.4	754.2	752.0	749.8	750.5
10°	756.9	755.9	755.0	754.0	753.1	751.3	748.9	746.3	743.8	741.4	741.4
12.5°	748.4	747.4	746.2	745.2	744.1	742.1	739.0	736.0	732.9	729.9	729.8
15°	734.4	733.0	731.4	729.9	728.4	725.6	721.8	717.9	714.0	710.1	709.4
17.5°	716.8	715.1	713.3	711.5	709.7	706.4	701.4	696.5	691.5	686.6	685.2
20°	703.8	701.6	699.4	697.2	695.0	691.2	685.9	680.7	675.4	670.1	668.3
22.5°	689.3	686.8	684.3	681.7	679.1	675.1	669.4	663.8	658.3	652.6	650.4
25°	668.2	664.8	661.3	657.9	654.4	649.5	643.0	636.7	630.3	623.9	621.0
27.5°	642.6	638.8	635.0	631.1	627.3	621.8	614.7	607.6	600.5	593.5	589.4
30°	625.2	621.0	616.9	612.7	608.5	602.5	594.8	587.0	579.2	571.4	566.7
32.5°	607.6	603.0	598.3	593.5	588.8	582.4	574.1	565.9	557.7	549.4	544.3
35°	578.3	573.3	568.3	563.4	558.3	551.5	542.9	534.3	525.7	517.1	511.1
37.5°	548.6	543.1	537.5	531.9	526.4	519.0	509.8	500.7	491.5	482.2	475.5
40°	529.6	523.5	517.4	511.3	505.2	497.2	487.4	477.5	467.7	457.8	450.5
42.5°	508.1	502.0	495.9	489.8	483.7	475.6	465.4	455.2	445.0	434.8	426.9
45°	475.2	469.0	462.8	456.6	450.3	441.8	431.1	420.4	409.8	399.1	391.2
47.5°	442.4	435.5	428.7	421.8	415.0	406.3	395.5	384.8	374.1	363.5	354.9
50°	418.4	411.9	405.4	398.8	392.3	383.4	372.2	361.0	349.8	338.5	329.9
52.5°	397.0	389.9	382.8	375.7	368.7	359.5	348.4	337.3	326.1	315.0	306.1
55°	361.0	354.2	347.4	340.6	333.8	324.5	312.7	300.9	289.1	277.3	269.2
57.5°	327.8	320.3	312.9	305.5	298.1	288.5	276.6	264.8	252.9	241.1	233.5
60°	304.8	297.2	289.5	281.8	274.3	264.6	253.2	241.7	230.1	218.6	211.1
62.5°	281.8	274.2	266.5	258.9	251.3	241.7	230.2	218.7	207.1	195.6	188.6
65°	246.7	239.0	231.5	223.8	216.1	206.9	196.1	185.3	174.5	163.6	156.9
67.5°	211.6	203.9	196.2	188.4	180.8	171.7	161.3	150.9	140.6	130.1	125.1
70°	188.6	181.1	173.7	166.2	158.7	150.0	140.3	130.6	120.9	111.2	106.3
72.5°	165.6	158.2	150.8	143.5	136.1	128.0	119.2	110.3	101.5	92.7	88.7
75°	130.5	123.8	117.2	110.6	103.9	96.7	89.1	81.4	73.9	66.2	64.8
77.5°	98.6	92.5	86.5	80.5	74.4	69.0	64.1	59.2	54.2	49.3	48.6
80°	78.1	72.4	66.7	61.0	55.3	51.0	48.1	45.2	42.2	39.4	38.9
82.5°	58.6	53.6	48.8	43.9	38.9	35.8	34.4	33.1	31.7	30.3	29.9
85°	33.1	30.1	27.0	24.0	20.9	19.2	18.8	18.3	17.9	17.4	17.2
87.5°	12.1	11.0	9.9	8.9	7.8	7.4	7.6	7.8	8.1	8.2	8.2
90°	0.3	1.1	2.0	2.8	3.6	4.6	5.6	6.7	7.7	8.8	9.1
92.5°	6.8	6.6	6.4	6.1	5.9	6.2	7.0	7.7	8.6	9.4	9.9
95°	22.3	19.0	15.7	12.3	9.0	7.7	8.6	9.5	10.4	11.3	11.9
97.5°	44.9	43.4	41.9	40.4	38.9	35.2	29.4	23.5	17.7	11.8	12.5
100°	61.9	63.5	65.1	66.8	68.4	62.9	50.2	37.5	24.8	12.1	12.7
102.5°	81.2	82.4	83.6	84.8	85.9	79.6	65.7	51.9	38.0	24.1	22.1
105°	109.2	110.1	111.0	111.9	112.8	109.5	102.2	94.9	87.6	80.2	65.8
107.5°	138.6	139.3	140.1	140.7	141.5	142.4	143.6	144.7	145.9	147.0	136.5
110°	158.2	158.9	159.6	160.2	160.9	161.6	162.5	163.4	164.3	165.2	162.5



TEST NUMBER: P332412-930

CATALOG NUMBER: S123RDIW-S560D460U930-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	177.0	177.6	178.1	178.7	179.4	180.1	181.0	181.9	182.8	183.7	183.7
115°	204.7	205.2	205.7	206.2	206.7	207.3	208.1	208.8	209.5	210.3	211.1
117.5°	231.6	232.3	232.8	233.4	234.1	234.6	234.9	235.3	235.7	236.0	236.7
120°	248.3	249.1	249.8	250.5	251.3	251.8	252.0	252.3	252.5	252.7	253.4
122.5°	265.4	266.0	266.5	267.2	267.7	268.2	268.6	268.8	269.1	269.5	269.9
125°	288.6	289.3	289.9	290.6	291.2	291.7	292.0	292.4	292.7	293.0	293.2
127.5°	311.2	311.9	312.5	313.2	313.8	314.3	314.7	315.1	315.5	315.9	316.2
130°	325.3	326.0	326.6	327.3	327.9	328.4	328.7	329.1	329.4	329.6	330.0
132.5°	338.8	339.4	340.1	340.7	341.4	341.8	342.1	342.3	342.6	342.8	343.2
135°	359.3	359.8	360.3	360.8	361.3	361.7	362.0	362.3	362.6	363.0	363.2
137.5°	376.9	377.6	378.1	378.8	379.4	379.8	380.0	380.2	380.3	380.5	380.9
140°	388.7	389.1	389.6	390.1	390.6	390.9	391.2	391.4	391.7	391.9	392.2
142.5°	399.5	400.0	400.5	401.0	401.5	401.8	402.0	402.3	402.5	402.8	403.0
145°	414.7	415.2	415.8	416.4	416.9	417.3	417.4	417.6	417.8	417.9	418.1
147.5°	428.9	429.3	429.7	430.1	430.4	430.7	430.9	431.0	431.2	431.4	431.5
150°	437.7	438.0	438.2	438.5	438.7	438.9	439.0	439.2	439.4	439.5	439.7
152.5°	445.6	445.7	445.9	446.0	446.1	446.2	446.3	446.4	446.5	446.6	446.9
155°	456.7	456.6	456.4	456.3	456.2	456.1	456.2	456.2	456.3	456.4	456.8
157.5°	465.5	465.4	465.4	465.4	465.4	465.3	465.2	465.1	465.0	465.0	465.5
160°	470.7	470.6	470.5	470.4	470.3	470.3	470.2	470.1	470.0	469.9	470.4
162.5°	475.6	475.5	475.2	475.1	474.8	474.7	474.6	474.5	474.4	474.3	474.9
165°	481.7	481.4	481.2	480.9	480.7	480.5	480.5	480.4	480.3	480.2	480.9
167.5°	486.4	486.1	485.8	485.4	485.1	484.9	484.9	484.9	484.9	484.9	485.6
170°	489.0	488.7	488.4	488.0	487.7	487.5	487.5	487.5	487.5	487.5	488.2
172.5°	490.7	490.4	490.0	489.6	489.2	489.0	489.1	489.2	489.3	489.3	489.9
175°	493.0	492.6	492.2	491.8	491.4	491.2	491.3	491.4	491.5	491.5	492.1
177.5°	493.6	493.3	492.9	492.6	492.3	492.2	492.3	492.3	492.4	492.4	492.9
180°	493.0	493.0	493.0	493.0	493.0	493.0	493.0	493.0	493.0	493.0	493.0



TEST NUMBER: P332412-930

CATALOG NUMBER: S123RDIW-S560D460U930-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	770.1	770.1	770.1	770.1	770.1	770.1	770.1	770.1
2.5°	767.0	768.3	769.5	770.0	769.7	769.5	769.3	769.1
5°	761.9	763.2	764.4	764.9	764.7	764.3	764.1	763.8
7.5°	751.2	751.9	752.6	752.7	752.2	751.8	751.3	750.8
10°	741.6	741.8	741.8	741.6	740.9	740.2	739.6	738.8
12.5°	729.7	729.6	729.5	729.0	728.2	727.4	726.7	725.9
15°	708.7	708.0	707.4	706.5	705.5	704.6	703.6	702.6
17.5°	683.7	682.2	680.7	679.3	677.8	676.4	674.9	673.5
20°	666.5	664.7	662.9	661.2	659.5	657.9	656.2	654.5
22.5°	648.2	645.9	643.7	641.7	640.2	638.6	637.1	635.5
25°	618.1	615.1	612.3	610.0	608.5	607.0	605.4	603.9
27.5°	585.3	581.3	577.2	574.1	571.7	569.4	567.0	564.7
30°	562.0	557.3	552.6	549.1	546.9	544.7	542.4	540.2
32.5°	539.2	533.9	528.8	525.1	522.8	520.4	518.0	515.8
35°	505.2	499.2	493.3	489.0	486.5	484.0	481.5	479.0
37.5°	468.7	461.9	455.2	450.3	447.2	444.1	441.0	437.9
40°	443.4	436.1	428.9	423.7	420.5	417.4	414.2	410.9
42.5°	419.1	411.2	403.2	397.9	395.0	392.2	389.3	386.5
45°	383.3	375.4	367.5	361.8	358.5	355.1	351.8	348.5
47.5°	346.3	337.7	329.1	323.3	320.3	317.3	314.4	311.4
50°	321.3	312.7	304.1	298.2	295.0	291.8	288.6	285.4
52.5°	297.2	288.2	279.2	273.4	270.5	267.7	264.8	262.0
55°	261.2	253.2	245.1	239.7	236.9	234.2	231.4	228.6
57.5°	225.8	218.3	210.7	205.7	203.3	201.0	198.6	196.2
60°	203.6	196.1	188.6	183.7	181.3	179.0	176.6	174.2
62.5°	181.5	174.5	167.4	162.7	160.2	157.7	155.2	152.8
65°	150.0	143.2	136.4	132.2	130.8	129.2	127.7	126.1
67.5°	120.0	114.9	109.8	106.5	104.8	103.2	101.6	100.0
70°	101.4	96.6	91.7	88.5	87.0	85.5	84.0	82.4
72.5°	84.7	80.8	76.8	74.5	73.9	73.2	72.6	71.9
75°	63.4	62.0	60.7	59.8	59.5	59.3	58.9	58.7
77.5°	47.9	47.1	46.3	45.8	45.6	45.2	45.0	44.7
80°	38.5	38.1	37.7	37.3	37.1	36.8	36.5	36.2
82.5°	29.5	29.1	28.7	28.5	28.4	28.4	28.3	28.2
85°	17.0	16.6	16.4	16.2	16.2	16.2	16.2	16.2
87.5°	8.2	8.2	8.1	8.0	7.9	7.8	7.7	7.7
90°	9.5	9.8	10.1	10.4	10.5	10.7	10.8	11.0
92.5°	10.4	10.9	11.5	11.7	11.9	12.0	12.1	12.1
95°	12.5	13.0	13.6	13.9	13.9	13.9	13.9	13.9
97.5°	13.1	13.8	14.4	14.8	14.8	14.9	15.0	15.1
100°	13.4	14.0	14.7	15.1	15.2	15.2	15.3	15.4
102.5°	20.1	18.0	16.1	15.1	15.2	15.4	15.5	15.7
105°	51.4	37.0	22.6	15.5	15.7	15.8	16.0	16.1
107.5°	125.9	115.4	104.8	94.1	83.2	72.3	61.5	50.6
110°	159.8	157.1	154.4	147.3	135.7	124.0	112.3	100.8



TEST NUMBER: P332412-930

CATALOG NUMBER: S123RDIW-S560D460U930-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	183.8	183.8	183.8	182.6	180.2	177.7	175.3	172.8
115°	211.9	212.7	213.5	214.1	214.4	214.7	215.1	215.4
117.5°	237.3	238.0	238.6	239.0	239.0	239.1	239.2	239.3
120°	254.0	254.7	255.4	255.7	255.7	255.7	255.7	255.7
122.5°	270.4	270.8	271.3	271.5	271.6	271.7	271.7	271.8
125°	293.3	293.5	293.7	293.8	294.0	294.2	294.3	294.5
127.5°	316.4	316.7	316.9	317.0	316.8	316.7	316.5	316.3
130°	330.3	330.6	330.9	331.0	330.8	330.7	330.5	330.4
132.5°	343.5	343.8	344.1	344.2	344.0	343.7	343.5	343.3
135°	363.5	363.7	363.9	363.9	363.7	363.5	363.2	363.0
137.5°	381.3	381.6	382.0	382.2	382.0	381.9	381.7	381.6
140°	392.6	392.9	393.2	393.3	393.1	393.0	392.8	392.6
142.5°	403.3	403.6	403.8	403.8	403.6	403.4	403.2	402.9
145°	418.2	418.4	418.6	418.7	418.7	418.7	418.7	418.7
147.5°	431.7	431.9	432.0	431.9	431.5	431.1	430.8	430.4
150°	439.9	440.0	440.2	440.2	439.9	439.7	439.4	439.2
152.5°	447.2	447.4	447.8	447.7	447.4	446.9	446.6	446.2
155°	457.2	457.6	458.0	458.0	457.5	457.0	456.5	456.1
157.5°	465.9	466.4	466.9	466.8	466.2	465.6	465.0	464.3
160°	470.9	471.4	471.9	471.9	471.3	470.8	470.2	469.6
162.5°	475.5	476.1	476.5	476.6	476.1	475.6	475.1	474.6
165°	481.5	482.2	482.8	482.8	482.2	481.8	481.2	480.6
167.5°	486.2	486.8	487.5	487.5	486.8	486.2	485.6	484.9
170°	488.9	489.5	490.2	490.2	489.5	488.9	488.2	487.5
172.5°	490.6	491.2	491.9	491.9	491.1	490.4	489.8	489.0
175°	492.7	493.3	493.8	493.8	493.2	492.5	491.9	491.2
177.5°	493.5	494.0	494.6	494.5	493.8	493.2	492.5	491.9
180°	493.0	493.0	493.0	493.0	493.0	493.0	493.0	493.0

(END OF REPORT)