

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: P332122-930

Luminaire Tested: **S123DIW-S560D460U930-4F0-1E-UDD-D**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332122-930
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: S123DIW-S560D460U930-4F0-1E-UDD-D
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 560 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 460 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3431.5 lumens
Efficiency: N/A
Efficacy: 113.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.25' x L: 4' x H: 0.08')
CIE Type: General Diffuse

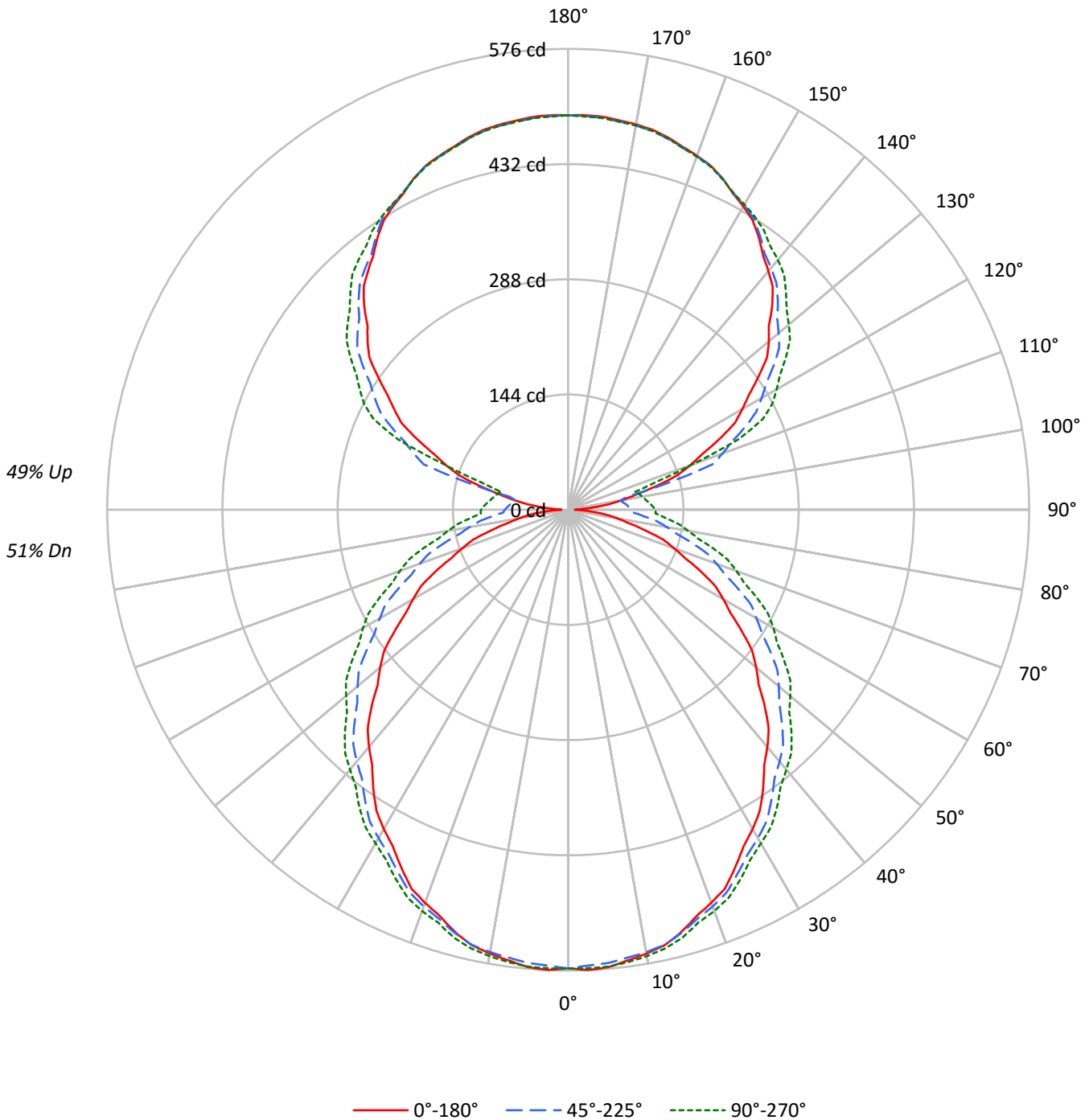
Input Watts (W): 30.2
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P332122-930

CATALOG NUMBER: S123DIW-S560D460U930-4F0-1E-UDD-D

Luminous Intensity Polar Plot





TEST NUMBER: P332122-930

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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	107	107	107	107	99	99	99	99	84	84	84	70	70	70	57	57	57	51
1	97	92	88	84	89	85	81	78	72	69	67	60	58	56	49	48	46	41
2	88	80	73	68	81	74	68	63	63	58	54	52	49	46	43	40	38	34
3	80	70	62	56	73	65	58	52	55	50	45	46	42	39	37	35	32	28
4	73	62	53	47	67	57	50	44	49	43	38	41	36	33	33	30	27	24
5	67	55	46	40	61	51	43	38	43	37	33	36	32	28	30	26	24	20
6	62	49	41	35	57	46	38	33	39	33	29	33	28	25	27	23	21	18
7	57	44	36	30	52	41	34	28	35	29	25	30	25	22	25	21	18	16
8	53	40	32	27	49	37	30	25	32	26	22	27	23	19	23	19	16	14
9	49	37	29	24	45	34	27	22	29	24	20	25	20	17	21	17	15	13
10	46	33	26	21	42	31	25	20	27	22	18	23	19	16	19	16	13	11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	6171	6171	6171
5°	6191	6015	6019
10°	6135	5878	5848
15°	6056	5720	5660
20°	5943	5540	5454
25°	5804	5333	5238
30°	5660	5147	5019
35°	5500	4950	4844
40°	5347	4771	4656
45°	5177	4599	4506
50°	5010	4430	4341
55°	4826	4256	4193
60°	4646	4080	4040
65°	4462	3891	3859
70°	4185	3680	3673
75°	3832	3437	3484
80°	3426	3199	3268
85°	3052	3034	3143



TEST NUMBER: P332122-930

CATALOG NUMBER: S123DIW-S560D460U930-4F0-1E-UDD-D

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	54.4	1.6
10°-20°	154.9	4.5
20°-30°	231.7	6.8
30°-40°	276.7	8.1
40°-50°	289.5	8.4
50°-60°	271.7	7.9
60°-70°	226.9	6.6
70°-80°	162.4	4.7
80°-90°	98.2	2.9
90°-100°	78.7	2.3
100°-110°	130.1	3.8
110°-120°	235.0	6.8
120°-130°	278.3	8.1
130°-140°	286.8	8.4
140°-150°	262.7	7.7
150°-160°	210.6	6.1
160°-170°	135.9	4.0
170°-180°	46.8	1.4
0°-30°	441.0	12.9
0°-40°	717.7	20.9
0°-60°	1279.0	37.3
0°-90°	1766.4	51.5
90°-120°	443.8	12.9
90°-150°	1271.7	37.1
90°-180°	1665.0	48.5
0°-180°	3431.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	573	573	573	573	573	
5°	574	573	569	574	573	54
15°	546	548	548	554	553	154
25°	493	499	502	509	510	227
35°	425	435	443	452	455	266
45°	347	362	378	389	395	268
55°	265	286	308	324	330	237
65°	183	208	235	253	260	181
75°	99	129	160	180	188	106
85°	31	62	95	115	122	32
90°	8	43	79	101	109	7
95°	29	40	73	94	101	33
105°	114	132	127	83	86	121
115°	208	218	243	261	268	205
125°	290	294	313	326	332	260
135°	361	363	370	382	385	278
145°	415	417	418	424	426	260
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: P332122-930

CATALOG NUMBER: S123DIW-S560D460U930-4F0-1E-UDD-D

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	573.3	573.3	573.3	573.3	573.3	573.3	573.3	573.3	573.3	573.3	573.3
2.5°	575.8	575.5	575.2	574.8	574.5	573.9	573.0	572.1	571.2	570.3	571.2
5°	574.0	573.6	573.4	573.2	572.8	572.3	571.4	570.6	569.8	568.9	570.1
7.5°	568.3	568.3	568.4	568.5	568.6	568.2	567.4	566.6	565.7	564.9	566.3
10°	563.4	563.6	563.9	564.2	564.4	564.3	563.5	562.9	562.1	561.5	562.9
12.5°	557.3	557.7	558.2	558.5	558.9	558.9	558.4	557.9	557.4	556.9	558.2
15°	546.5	546.9	547.3	547.7	548.1	548.3	548.1	548.0	547.9	547.7	549.1
17.5°	532.7	533.5	534.4	535.2	536.1	536.5	536.4	536.3	536.3	536.2	537.4
20°	522.8	523.6	524.4	525.2	526.0	526.6	526.9	527.2	527.4	527.7	529.0
22.5°	512.3	513.1	513.9	514.8	515.6	516.2	516.6	517.0	517.4	517.7	519.3
25°	493.4	494.8	496.2	497.6	499.0	499.9	500.3	500.7	501.1	501.5	503.3
27.5°	474.4	476.0	477.6	479.2	480.7	481.9	482.8	483.7	484.6	485.5	487.1
30°	460.9	462.7	464.5	466.4	468.1	469.6	470.7	471.8	472.9	474.0	475.7
32.5°	445.9	447.9	450.0	452.0	454.0	455.8	457.2	458.6	460.1	461.5	463.3
35°	424.7	426.9	429.1	431.4	433.6	435.6	437.4	439.2	441.0	442.8	444.9
37.5°	402.2	404.7	407.2	409.7	412.2	414.6	416.8	419.0	421.2	423.5	425.8
40°	387.2	389.7	392.2	394.7	397.2	399.8	402.6	405.4	408.1	410.9	413.3
42.5°	370.7	373.8	376.8	379.8	382.9	385.9	388.8	391.7	394.6	397.5	400.1
45°	347.2	350.6	353.9	357.3	360.5	363.9	367.5	370.9	374.4	377.8	380.5
47.5°	322.6	326.4	330.2	333.9	337.7	341.6	345.6	349.5	353.5	357.5	360.4
50°	306.6	310.5	314.4	318.3	322.2	326.3	330.6	334.9	339.2	343.5	346.7
52.5°	289.7	293.8	297.9	302.0	306.1	310.5	315.3	320.0	324.7	329.5	332.8
55°	264.8	269.4	273.9	278.5	283.2	287.9	292.9	297.9	302.9	307.9	311.6
57.5°	240.6	245.3	250.1	254.9	259.7	264.8	270.3	275.7	281.2	286.7	290.4
60°	223.6	228.6	233.6	238.6	243.5	248.9	254.6	260.3	266.0	271.7	275.6
62.5°	207.6	212.7	217.8	222.9	228.0	233.6	239.6	245.6	251.7	257.7	261.5
65°	183.0	188.4	193.8	199.3	204.6	210.4	216.5	222.6	228.7	234.8	239.0
67.5°	158.0	163.8	169.5	175.2	181.0	186.9	193.2	199.4	205.6	211.8	216.4
70°	140.6	146.5	152.5	158.4	164.4	170.7	177.3	184.0	190.7	197.4	201.8
72.5°	124.5	130.5	136.5	142.4	148.4	154.8	161.7	168.6	175.5	182.4	186.9
75°	99.3	105.8	112.3	118.9	125.4	132.2	139.1	146.0	153.0	159.9	164.4
77.5°	77.3	83.9	90.5	97.0	103.6	110.4	117.4	124.4	131.4	138.4	143.2
80°	61.8	68.6	75.4	82.3	89.0	96.0	103.2	110.5	117.7	124.9	129.6
82.5°	48.3	55.3	62.1	69.1	76.0	83.1	90.4	97.8	105.1	112.4	117.2
85°	30.6	37.5	44.5	51.4	58.4	65.5	72.9	80.2	87.6	94.9	99.6
87.5°	16.7	23.7	30.8	37.9	45.0	52.2	59.4	66.8	74.0	81.3	86.1
90°	8.5	16.1	23.7	31.3	39.0	46.8	55.0	63.1	71.3	79.3	84.4
92.5°	14.4	20.3	26.3	32.1	38.1	44.9	52.7	60.4	68.2	76.0	81.0
95°	29.2	31.3	33.3	35.5	37.5	42.4	50.1	57.8	65.5	73.2	78.0
97.5°	51.0	54.4	57.8	61.2	64.6	66.6	67.3	67.8	68.5	69.1	73.9
100°	67.5	73.6	79.7	85.8	91.8	91.6	85.4	79.1	72.7	66.4	71.1
102.5°	86.3	91.6	96.7	101.9	107.0	105.8	98.2	90.7	83.0	75.4	77.4
105°	114.1	118.4	122.6	126.9	131.0	132.5	131.1	129.8	128.4	127.0	116.5
107.5°	142.8	146.4	149.9	153.5	157.0	162.2	169.0	175.9	182.7	189.5	182.6
110°	162.0	165.1	168.3	171.5	174.6	179.4	185.8	192.2	198.7	205.1	206.1



TEST NUMBER: P332122-930

CATALOG NUMBER: S123DIW-S560D460U930-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	180.8	183.4	186.1	188.7	191.3	195.8	201.9	208.1	214.4	220.6	224.2
115°	207.9	210.0	212.2	214.3	216.5	220.5	226.2	231.9	237.7	243.4	247.5
117.5°	234.6	236.3	237.9	239.5	241.2	244.5	249.6	254.6	259.7	264.8	268.7
120°	250.9	252.3	253.7	255.1	256.6	259.7	264.5	269.3	274.2	279.0	282.8
122.5°	267.8	268.8	269.8	270.8	271.7	274.5	279.2	283.8	288.5	293.2	296.7
125°	290.5	291.1	291.8	292.4	293.1	295.6	299.9	304.4	308.7	313.0	316.1
127.5°	313.1	313.6	314.1	314.6	315.1	317.2	321.0	324.7	328.4	332.2	335.2
130°	327.2	327.7	328.2	328.6	329.2	331.0	334.1	337.2	340.3	343.4	346.3
132.5°	340.1	340.7	341.4	342.0	342.6	344.1	346.7	349.1	351.6	354.1	356.9
135°	360.6	360.9	361.3	361.7	362.0	363.1	364.9	366.8	368.7	370.5	373.2
137.5°	378.1	378.5	379.0	379.6	380.1	380.8	381.9	382.9	383.9	385.0	387.6
140°	389.2	389.7	390.2	390.7	391.2	391.8	392.5	393.1	393.8	394.4	396.8
142.5°	400.1	400.5	400.9	401.2	401.6	401.9	402.3	402.6	402.9	403.2	405.4
145°	415.2	415.7	416.1	416.5	417.0	417.3	417.4	417.6	417.8	417.9	419.2
147.5°	428.9	429.3	429.7	430.1	430.4	430.7	430.9	431.0	431.2	431.4	431.9
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: P332122-930

CATALOG NUMBER: S123DIW-S560D460U930-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	573.3	573.3	573.3	573.3	573.3	573.3	573.3	573.3
2.5°	572.1	573.0	573.9	574.3	574.1	574.1	574.0	573.8
5°	571.2	572.3	573.4	573.9	573.7	573.6	573.5	573.3
7.5°	567.7	569.1	570.5	571.1	571.0	570.8	570.6	570.5
10°	564.3	565.7	567.0	567.5	567.3	567.0	566.7	566.5
12.5°	559.5	560.8	562.1	562.6	562.3	562.0	561.7	561.5
15°	550.5	551.9	553.3	553.9	553.8	553.6	553.5	553.3
17.5°	538.7	540.0	541.2	541.8	541.5	541.4	541.2	541.0
20°	530.3	531.5	532.7	533.5	533.5	533.7	533.9	533.9
22.5°	520.9	522.5	524.1	524.8	524.7	524.6	524.6	524.5
25°	505.1	507.0	508.7	509.6	509.6	509.6	509.6	509.6
27.5°	488.6	490.2	491.7	492.6	492.7	492.8	492.9	493.0
30°	477.4	479.0	480.7	481.5	481.5	481.5	481.5	481.5
32.5°	465.0	466.8	468.6	469.7	470.0	470.3	470.7	471.0
35°	446.9	449.1	451.1	452.4	453.0	453.6	454.1	454.7
37.5°	428.1	430.5	432.8	434.3	434.7	435.1	435.6	436.0
40°	415.6	418.0	420.4	421.8	422.4	423.0	423.5	424.0
42.5°	402.6	405.2	407.8	409.4	410.3	411.0	411.8	412.5
45°	383.1	385.7	388.4	390.3	391.3	392.5	393.6	394.7
47.5°	363.5	366.4	369.3	371.3	372.1	373.0	373.9	374.7
50°	349.8	353.1	356.3	358.3	359.3	360.3	361.3	362.2
52.5°	336.1	339.4	342.8	345.0	346.2	347.3	348.5	349.8
55°	315.4	319.1	322.9	325.3	326.4	327.5	328.6	329.8
57.5°	294.2	298.0	301.7	304.3	305.6	306.9	308.2	309.5
60°	279.5	283.3	287.2	289.9	291.5	292.9	294.5	296.0
62.5°	265.5	269.4	273.2	275.9	277.3	278.7	280.1	281.5
65°	243.1	247.3	251.5	254.3	255.7	257.1	258.4	259.8
67.5°	220.9	225.5	230.1	232.9	234.1	235.2	236.4	237.6
70°	206.3	210.7	215.2	218.0	219.4	220.8	222.2	223.6
72.5°	191.4	196.0	200.6	203.6	205.0	206.4	207.7	209.1
75°	169.0	173.7	178.2	181.3	183.0	184.7	186.3	188.0
77.5°	148.1	152.9	157.7	160.8	162.1	163.3	164.6	165.9
80°	134.4	139.1	143.8	146.8	148.2	149.6	151.0	152.4
82.5°	121.9	126.5	131.3	134.4	135.7	137.1	138.5	139.9
85°	104.4	109.1	113.8	116.8	118.2	119.6	121.0	122.4
87.5°	90.9	95.7	100.4	103.5	105.0	106.4	107.8	109.3
90°	89.4	94.5	99.5	102.8	104.4	105.9	107.5	109.0
92.5°	86.2	91.3	96.4	99.7	101.1	102.5	103.9	105.3
95°	82.9	87.8	92.7	95.8	97.2	98.6	100.0	101.3
97.5°	78.7	83.5	88.3	91.4	92.9	94.3	95.8	97.3
100°	75.7	80.5	85.1	88.2	89.7	91.2	92.6	94.1
102.5°	79.2	81.1	83.0	84.7	86.3	87.8	89.4	90.9
105°	106.0	95.5	85.0	80.4	81.9	83.2	84.6	86.1
107.5°	175.8	168.9	162.1	153.8	144.2	134.6	125.0	115.3
110°	207.0	207.9	208.9	204.1	193.6	183.0	172.4	161.9



TEST NUMBER: P332122-930

CATALOG NUMBER: S123DIW-S560D460U930-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	227.7	231.3	234.8	235.9	234.7	233.5	232.3	231.1
115°	251.7	255.8	259.9	262.7	264.2	265.6	267.0	268.5
117.5°	272.7	276.6	280.6	283.2	284.3	285.4	286.6	287.7
120°	286.7	290.5	294.3	296.8	297.7	298.7	299.7	300.6
122.5°	300.3	303.8	307.4	309.7	310.6	311.7	312.7	313.7
125°	319.2	322.3	325.3	327.4	328.6	329.7	330.8	332.0
127.5°	338.2	341.1	344.1	346.1	346.8	347.6	348.4	349.2
130°	349.4	352.3	355.2	357.1	357.8	358.4	359.1	359.8
132.5°	359.8	362.6	365.5	367.3	368.0	368.7	369.4	370.1
135°	376.0	378.7	381.5	383.0	383.5	383.9	384.4	384.8
137.5°	390.2	392.7	395.3	396.9	397.5	397.9	398.5	399.0
140°	399.3	401.6	404.1	405.5	406.1	406.6	407.2	407.6
142.5°	407.5	409.6	411.7	413.0	413.5	414.0	414.4	414.9
145°	420.4	421.8	423.1	424.0	424.5	425.1	425.6	426.2
147.5°	432.4	432.8	433.3	433.7	433.7	433.9	434.0	434.1
150°	439.9	440.0	440.2	440.3	440.3	440.3	440.4	440.4
152.5°	447.2	447.4	447.8	447.8	447.4	447.1	446.8	446.5
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)