

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: P332212-930

Luminaire Tested: **S123DIW-S1165D460U930-4F0-1E-UDD-D**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332212-930
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-S1165D460U930-4F0-1E-UDD-D
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1165 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: 5458.4 lumens
Efficiency: N/A
Efficacy: 104.2 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: Semi-Direct

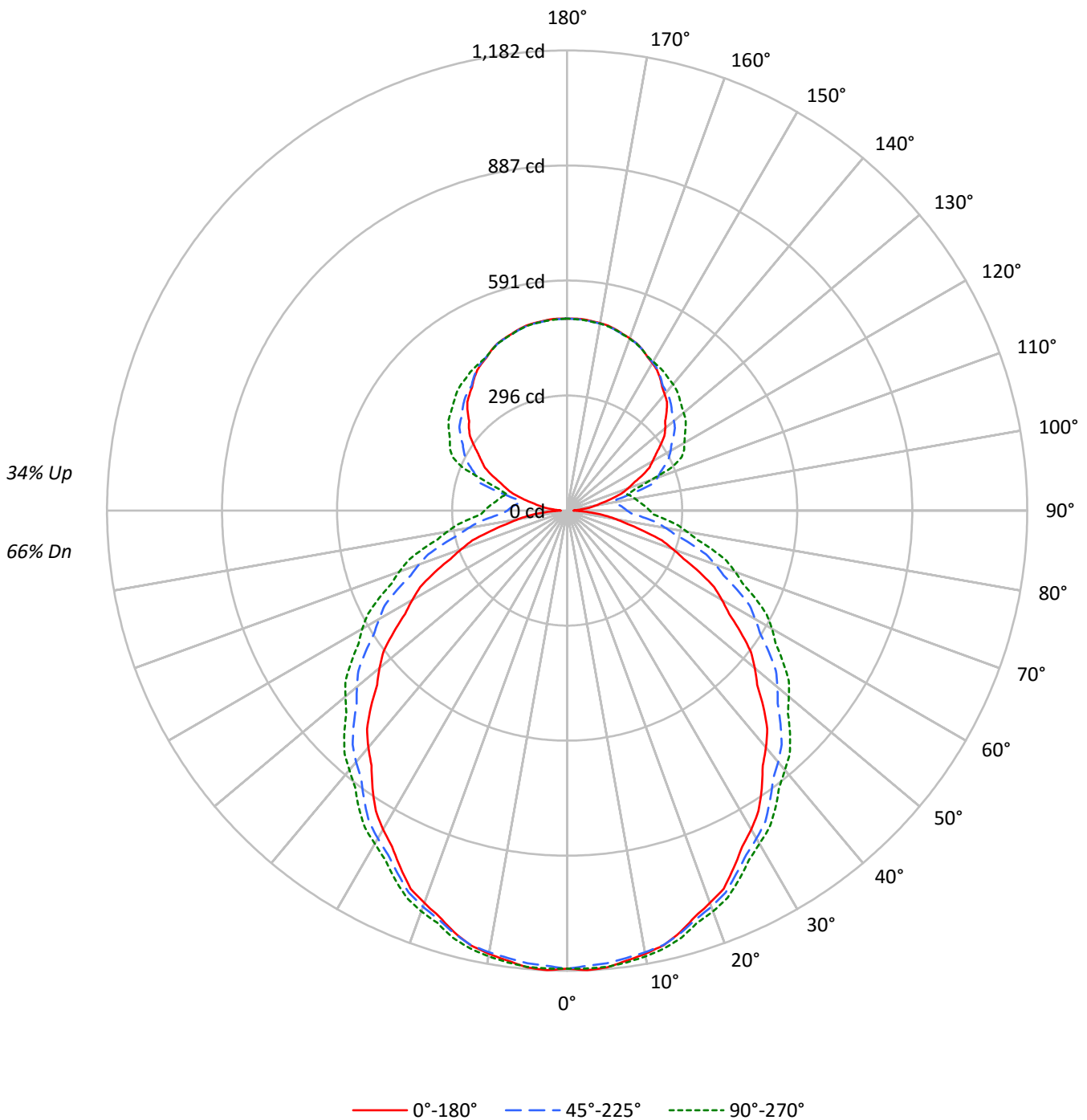
Input Watts (W): 52.4
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P332212-930

CATALOG NUMBER: S123DIW-S1165D460U930-4F0-1E-UDD-D

Luminous Intensity Polar Plot





TEST NUMBER: P332212-930

CATALOG NUMBER: S123DIW-S1165D460U930-4F0-1E-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	50	30	10	50	30	10	0		
RCR																										
0	111	111	111	111	105	105	105	105	92	92	92	81	81	81	71	71	71	66								
1	100	95	90	86	94	89	85	82	79	76	73	70	67	65	61	59	57	53								
2	91	82	75	69	85	77	71	66	69	64	60	60	57	53	53	50	47	43								
3	82	72	64	57	77	68	60	55	60	54	49	53	48	44	46	43	40	36								
4	75	63	55	48	70	60	52	46	53	47	42	47	42	38	41	37	34	31								
5	69	56	48	41	64	53	45	39	47	41	36	42	37	33	37	33	29	26								
6	64	51	42	36	59	48	40	34	43	36	31	38	33	28	33	29	26	23								
7	59	46	37	31	55	43	35	30	39	32	28	34	29	25	30	26	23	20								
8	55	41	33	28	51	39	32	27	35	29	24	32	26	22	28	24	20	18								
9	51	38	30	25	48	36	29	24	32	26	22	29	24	20	26	21	18	16								
10	48	35	27	22	45	33	26	21	30	24	20	27	22	18	24	20	17	15								

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	12664	12664	12664
5°	12703	12344	12352
10°	12589	12060	12000
15°	12427	11738	11616
20°	12195	11369	11194
25°	11908	10944	10750
30°	11616	10563	10299
35°	11287	10159	9939
40°	10973	9792	9555
45°	10626	9438	9247
50°	10281	9090	8908
55°	9903	8734	8603
60°	9533	8371	8291
65°	9155	7984	7918
70°	8585	7551	7537
75°	7860	7053	7148
80°	7035	6564	6706
85°	6264	6229	6450



TEST NUMBER: P332212-930

CATALOG NUMBER: S123DIW-S1165D460U930-4F0-1E-UDD-D

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	111.5	2.0
10°-20°	317.9	5.8
20°-30°	475.5	8.7
30°-40°	567.9	10.4
40°-50°	594.1	10.9
50°-60°	557.5	10.2
60°-70°	465.7	8.5
70°-80°	333.2	6.1
80°-90°	200.1	3.7
90°-100°	142.6	2.6
100°-110°	177.0	3.2
110°-120°	266.4	4.9
120°-130°	296.3	5.4
130°-140°	294.9	5.4
140°-150°	264.4	4.8
150°-160°	210.6	3.9
160°-170°	135.9	2.5
170°-180°	46.8	0.9
0°-30°	905.0	16.6
0°-40°	1472.8	27.0
0°-60°	2624.5	48.1
0°-90°	3623.4	66.4
90°-120°	586.0	10.7
90°-150°	1441.6	26.4
90°-180°	1835.0	33.6
0°-180°	5458.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1176	1176	1176	1176	1176	
5°	1178	1175	1168	1177	1176	112
15°	1121	1125	1124	1136	1136	316
25°	1012	1025	1029	1045	1046	466
35°	872	892	909	927	933	545
45°	713	743	775	799	810	549
55°	543	586	632	665	677	486
65°	376	426	482	519	533	371
75°	204	264	328	369	386	218
85°	63	127	195	237	251	66
90°	17	84	154	197	212	12
95°	36	73	138	179	193	39
105°	119	153	176	150	160	126
115°	211	230	278	311	324	209
125°	292	297	334	361	371	262
135°	362	364	378	402	408	279
145°	416	417	418	429	434	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: P332212-930

CATALOG NUMBER: S123DIW-S1165D460U930-4F0-1E-UDD-D

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1176.5	1176.5	1176.5	1176.5	1176.5	1176.5	1176.5	1176.5	1176.5	1176.5	1176.5
2.5°	1181.6	1181.0	1180.2	1179.6	1178.8	1177.6	1175.8	1173.9	1172.2	1170.4	1172.2
5°	1177.8	1177.2	1176.6	1176.1	1175.5	1174.4	1172.6	1170.9	1169.2	1167.5	1169.8
7.5°	1166.2	1166.4	1166.4	1166.6	1166.7	1166.0	1164.2	1162.6	1161.0	1159.3	1162.1
10°	1156.0	1156.6	1157.2	1157.7	1158.3	1157.8	1156.4	1155.0	1153.6	1152.1	1155.0
12.5°	1143.7	1144.4	1145.3	1146.1	1146.9	1146.8	1145.8	1144.8	1143.9	1142.9	1145.5
15°	1121.4	1122.3	1123.1	1124.0	1124.8	1125.1	1124.8	1124.5	1124.2	1124.0	1126.8
17.5°	1093.2	1094.9	1096.6	1098.3	1100.0	1100.8	1100.7	1100.6	1100.5	1100.3	1102.9
20°	1072.7	1074.4	1076.1	1077.8	1079.5	1080.7	1081.2	1081.8	1082.4	1083.0	1085.5
22.5°	1051.2	1052.9	1054.6	1056.3	1058.0	1059.2	1060.1	1060.9	1061.6	1062.4	1065.7
25°	1012.4	1015.3	1018.1	1021.0	1023.9	1025.6	1026.5	1027.4	1028.3	1029.1	1032.8
27.5°	973.5	976.7	980.0	983.3	986.4	989.0	990.8	992.6	994.5	996.3	999.5
30°	945.8	949.5	953.2	956.9	960.6	963.6	965.9	968.2	970.5	972.7	976.2
32.5°	915.0	919.2	923.3	927.5	931.6	935.2	938.2	941.2	944.1	947.1	950.7
35°	871.5	876.0	880.6	885.2	889.7	893.8	897.6	901.2	904.9	908.7	912.9
37.5°	825.3	830.5	835.6	840.7	845.9	850.7	855.2	859.8	864.4	868.9	873.8
40°	794.6	799.7	804.9	809.9	815.1	820.5	826.2	831.8	837.6	843.3	848.2
42.5°	760.8	767.0	773.3	779.5	785.8	791.9	797.9	803.7	809.7	815.6	820.9
45°	712.6	719.4	726.2	733.0	739.9	746.9	754.0	761.1	768.3	775.3	780.7
47.5°	662.0	669.8	677.5	685.3	693.1	701.0	709.1	717.3	725.5	733.6	739.6
50°	629.2	637.2	645.2	653.1	661.1	669.5	678.4	687.2	696.0	704.8	711.4
52.5°	594.4	602.8	611.2	619.7	628.1	637.2	646.9	656.6	666.4	676.1	683.0
55°	543.4	552.8	562.1	571.6	581.0	590.8	601.0	611.3	621.6	631.9	639.5
57.5°	493.7	503.4	513.2	523.0	532.9	543.4	554.6	565.8	577.0	588.2	596.0
60°	458.8	469.0	479.3	489.6	499.8	510.8	522.4	534.1	545.8	557.5	565.5
62.5°	426.0	436.5	446.9	457.5	467.9	479.3	491.7	504.0	516.4	528.8	536.7
65°	375.5	386.6	397.7	408.8	420.0	431.8	444.3	456.8	469.4	481.8	490.4
67.5°	324.2	336.1	347.8	359.6	371.4	383.7	396.4	409.2	421.9	434.7	444.0
70°	288.4	300.6	312.8	325.1	337.4	350.3	363.9	377.6	391.3	405.0	414.1
72.5°	255.5	267.8	280.1	292.3	304.5	317.7	331.8	345.9	360.1	374.2	383.6
75°	203.7	217.2	230.6	243.9	257.3	271.1	285.4	299.6	313.8	328.1	337.5
77.5°	158.7	172.2	185.6	199.2	212.6	226.6	240.9	255.3	269.6	284.0	293.9
80°	126.9	140.8	154.8	168.8	182.7	197.1	211.9	226.7	241.5	256.3	266.0
82.5°	99.2	113.4	127.6	141.8	155.9	170.6	185.6	200.6	215.6	230.6	240.4
85°	62.8	77.0	91.3	105.5	119.8	134.4	149.5	164.6	179.7	194.8	204.5
87.5°	34.2	48.5	62.9	77.2	91.6	106.1	120.8	135.6	150.3	165.0	174.8
90°	17.0	31.8	46.6	61.3	76.1	91.3	106.9	122.5	138.0	153.6	163.6
92.5°	22.4	34.8	47.2	59.5	71.9	85.6	100.7	115.8	130.9	146.0	156.0
95°	36.4	44.2	52.0	59.8	67.5	78.8	93.7	108.5	123.4	138.2	147.7
97.5°	57.5	66.0	74.5	83.1	91.6	99.5	107.0	114.5	122.0	129.5	138.6
100°	73.5	84.1	94.9	105.7	116.4	122.0	122.4	122.8	123.2	123.6	132.5
102.5°	91.7	101.1	110.5	119.8	129.2	133.5	132.4	131.4	130.4	129.5	135.4
105°	119.4	127.1	134.9	142.6	150.3	156.6	161.6	166.5	171.4	176.3	169.9
107.5°	147.3	153.8	160.4	166.9	173.4	183.1	195.8	208.6	221.4	234.2	231.2
110°	165.9	171.7	177.5	183.3	189.1	198.0	210.3	222.7	235.0	247.2	251.9



TEST NUMBER: P332212-930

CATALOG NUMBER: S123DIW-S1165D460U930-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	184.7	189.5	194.3	199.1	203.9	212.2	224.0	235.9	247.7	259.5	266.8
115°	211.2	215.1	219.0	222.9	226.8	234.2	245.2	256.2	267.2	278.2	285.8
117.5°	237.8	240.5	243.2	245.9	248.7	255.0	265.0	275.0	285.0	295.0	302.4
120°	253.5	255.6	257.8	259.9	262.1	268.0	277.6	287.3	296.9	306.6	313.8
122.5°	270.4	271.8	273.1	274.5	275.8	281.1	290.4	299.6	308.9	318.1	324.9
125°	292.4	293.1	293.8	294.4	295.1	299.7	308.3	316.9	325.5	334.0	340.2
127.5°	315.0	315.4	315.8	316.2	316.5	320.3	327.5	334.8	342.0	349.2	355.1
130°	329.1	329.5	329.9	330.2	330.6	333.8	339.8	345.8	351.8	357.8	363.6
132.5°	341.6	342.2	342.8	343.3	344.0	346.7	351.5	356.3	361.1	365.9	371.5
135°	361.9	362.1	362.3	362.5	362.7	364.5	368.0	371.5	375.0	378.4	383.8
137.5°	379.2	379.6	380.0	380.4	380.8	382.0	383.9	385.9	387.8	389.7	394.6
140°	390.0	390.4	390.9	391.4	391.9	392.6	393.8	394.8	396.0	397.1	401.7
142.5°	400.8	401.0	401.3	401.5	401.8	402.1	402.6	403.0	403.4	403.8	407.9
145°	416.0	416.2	416.5	416.8	417.1	417.3	417.4	417.6	417.8	417.9	420.4
147.5°	428.9	429.3	429.7	430.1	430.4	430.7	430.9	431.0	431.2	431.4	432.2
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: P332212-930

CATALOG NUMBER: S123DIW-S1165D460U930-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1176.5	1176.5	1176.5	1176.5	1176.5	1176.5	1176.5	1176.5
2.5°	1173.9	1175.8	1177.6	1178.4	1178.2	1177.9	1177.7	1177.5
5°	1172.1	1174.4	1176.6	1177.6	1177.4	1177.0	1176.8	1176.5
7.5°	1165.0	1167.8	1170.7	1172.0	1171.6	1171.3	1170.9	1170.6
10°	1157.8	1160.7	1163.5	1164.7	1164.1	1163.5	1162.9	1162.4
12.5°	1148.2	1150.8	1153.4	1154.4	1153.8	1153.2	1152.7	1152.1
15°	1129.6	1132.5	1135.3	1136.6	1136.4	1136.0	1135.8	1135.5
17.5°	1105.5	1108.1	1110.6	1111.7	1111.3	1110.9	1110.5	1110.1
20°	1088.0	1090.6	1093.2	1094.6	1094.9	1095.2	1095.4	1095.8
22.5°	1068.9	1072.2	1075.4	1076.9	1076.8	1076.6	1076.4	1076.3
25°	1036.5	1040.2	1043.9	1045.8	1045.8	1045.8	1045.8	1045.8
27.5°	1002.7	1005.8	1009.0	1010.7	1011.0	1011.2	1011.5	1011.7
30°	979.6	983.0	986.3	988.1	988.1	988.1	988.1	988.1
32.5°	954.4	958.1	961.6	963.8	964.5	965.2	965.9	966.5
35°	917.2	921.5	925.7	928.5	929.6	930.7	931.9	932.9
37.5°	878.6	883.5	888.3	891.1	892.1	893.0	893.9	894.8
40°	853.0	857.8	862.7	865.6	866.7	867.9	869.0	870.2
42.5°	826.2	831.5	836.8	840.2	841.8	843.4	845.0	846.6
45°	786.2	791.6	797.0	800.9	803.2	805.4	807.7	809.9
47.5°	745.8	751.9	758.0	761.9	763.6	765.4	767.2	768.9
50°	718.0	724.6	731.1	735.3	737.4	739.3	741.4	743.3
52.5°	689.7	696.5	703.3	707.9	710.4	712.8	715.3	717.7
55°	647.2	654.8	662.6	667.6	669.8	672.1	674.4	676.7
57.5°	603.7	611.5	619.2	624.4	627.1	629.8	632.5	635.1
60°	573.4	581.4	589.4	594.9	598.1	601.2	604.3	607.5
62.5°	544.7	552.7	560.7	566.1	569.0	571.9	574.9	577.7
65°	499.0	507.5	516.1	521.7	524.6	527.4	530.3	533.1
67.5°	453.4	462.8	472.1	477.9	480.4	482.7	485.1	487.5
70°	423.2	432.4	441.4	447.4	450.3	453.1	455.9	458.8
72.5°	392.9	402.3	411.6	417.7	420.5	423.4	426.2	429.1
75°	346.9	356.3	365.7	372.1	375.5	379.0	382.4	385.7
77.5°	303.8	313.7	323.7	329.9	332.6	335.2	337.8	340.4
80°	275.7	285.4	295.1	301.3	304.2	307.0	309.9	312.7
82.5°	250.1	259.8	269.4	275.7	278.5	281.4	284.2	287.1
85°	214.2	223.9	233.5	239.8	242.6	245.5	248.3	251.2
87.5°	184.5	194.3	204.0	210.3	213.2	216.1	219.0	221.8
90°	173.7	183.6	193.6	200.2	203.2	206.2	209.2	212.2
92.5°	165.9	175.9	185.9	192.2	194.9	197.7	200.4	203.1
95°	157.0	166.4	175.9	182.0	184.8	187.7	190.5	193.3
97.5°	147.7	156.9	166.0	172.0	175.0	177.9	180.8	183.8
100°	141.4	150.3	159.2	165.2	168.1	171.0	173.9	176.8
102.5°	141.5	147.5	153.5	158.0	161.0	164.0	167.0	170.0
105°	163.5	157.0	150.6	148.7	151.5	154.2	156.9	159.6
107.5°	228.3	225.3	222.4	216.8	208.5	200.1	191.8	183.4
110°	256.7	261.4	266.1	263.7	254.4	245.1	235.7	226.3



TEST NUMBER: P332212-930

CATALOG NUMBER: S123DIW-S1165D460U930-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	273.9	281.2	288.5	292.0	292.1	292.2	292.2	292.3
115°	293.5	301.1	308.8	313.9	316.5	319.1	321.7	324.3
117.5°	309.8	317.3	324.7	329.5	331.8	334.1	336.4	338.7
120°	321.0	328.2	335.4	340.0	341.9	344.0	345.9	348.0
122.5°	331.7	338.5	345.3	349.7	351.7	353.8	355.9	357.9
125°	346.3	352.5	358.7	362.8	364.9	367.0	369.2	371.4
127.5°	361.0	366.9	372.8	376.7	378.5	380.2	382.0	383.8
130°	369.3	375.0	380.8	384.4	386.0	387.5	389.1	390.6
132.5°	376.9	382.5	387.9	391.6	393.3	395.0	396.7	398.4
135°	389.1	394.5	399.8	403.2	404.3	405.5	406.7	407.9
137.5°	399.5	404.4	409.3	412.4	413.6	414.9	416.1	417.4
140°	406.3	410.8	415.5	418.4	419.6	420.9	422.2	423.5
142.5°	412.0	416.0	420.1	422.7	424.0	425.2	426.3	427.5
145°	422.8	425.3	427.7	429.5	430.6	431.8	432.9	434.1
147.5°	433.0	433.9	434.7	435.5	436.1	436.8	437.4	438.1
150°	439.9	440.0	440.2	440.4	440.8	441.1	441.4	441.7
152.5°	447.2	447.4	447.8	447.8	447.5	447.3	447.0	446.7
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)