

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: P332212-935

Luminaire Tested: **S123DIW-S1165D460U935-4F0-1E-UDD-D**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332212-935
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-S1165D460U935-4F0-1E-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: 5764.4 lumens
Efficiency: N/A
Efficacy: 110.0 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

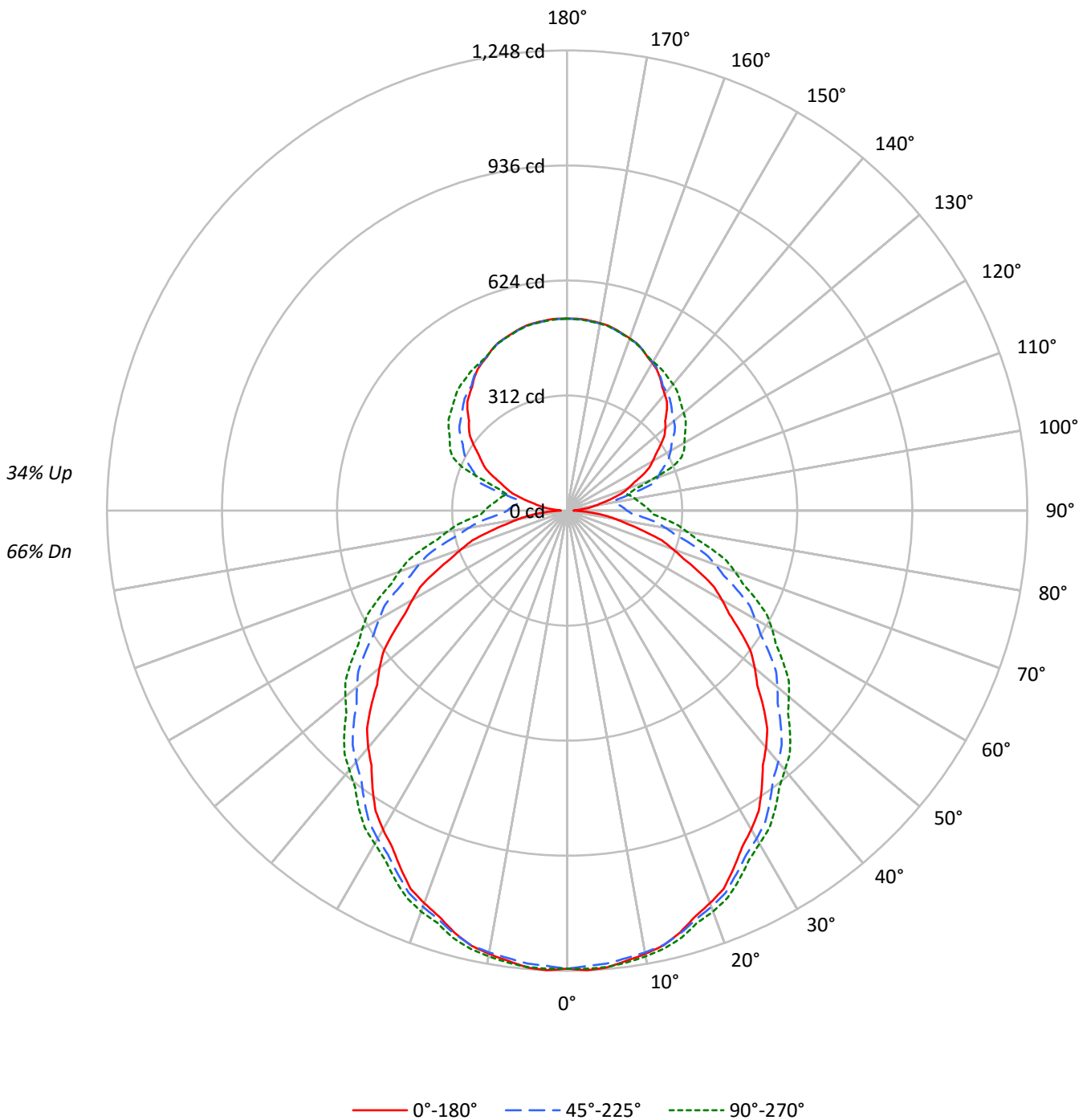
Input Watts (W): 52.4
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





TEST NUMBER: P332212-935

CATALOG NUMBER: S123DIW-S1165D460U935-4F0-1E-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°	13373	13373	13373
5°	13415	13037	13044
10°	13294	12736	12672
15°	13123	12396	12267
20°	12878	12006	11821
25°	12576	11558	11352
30°	12267	11155	10876
35°	11919	10728	10496
40°	11588	10340	10090
45°	11221	9968	9765
50°	10858	9599	9408
55°	10459	9224	9085
60°	10067	8841	8755
65°	9669	8433	8362
70°	9064	7974	7959
75°	8304	7449	7549
80°	7429	6933	7081
85°	6613	6577	6812



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	117.8	2.0
10°-20°	335.7	5.8
20°-30°	502.2	8.7
30°-40°	599.7	10.4
40°-50°	627.4	10.9
50°-60°	588.8	10.2
60°-70°	491.8	8.5
70°-80°	351.8	6.1
80°-90°	211.3	3.7
90°-100°	150.6	2.6
100°-110°	187.0	3.2
110°-120°	281.3	4.9
120°-130°	312.9	5.4
130°-140°	311.4	5.4
140°-150°	279.3	4.8
150°-160°	222.4	3.9
160°-170°	143.5	2.5
170°-180°	49.5	0.9
0°-30°	955.7	16.6
0°-40°	1555.4	27.0
0°-60°	2771.6	48.1
0°-90°	3826.5	66.4
90°-120°	618.9	10.7
90°-150°	1522.4	26.4
90°-180°	1938.0	33.6
0°-180°	5764.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1242	1242	1242	1242	1242	
5°	1244	1241	1233	1243	1242	118
15°	1184	1188	1187	1200	1199	333
25°	1069	1082	1087	1103	1104	492
35°	920	942	960	979	985	575
45°	752	785	819	844	855	580
55°	574	619	667	702	715	514
65°	397	450	509	548	563	392
75°	215	279	346	390	407	230
85°	66	134	206	250	265	70
90°	18	88	162	208	224	13
95°	38	77	146	189	204	41
105°	126	162	186	158	169	133
115°	223	243	294	329	342	220
125°	309	314	353	381	392	276
135°	382	384	400	424	431	294
145°	439	441	441	453	458	275
155°	482	482	482	484	482	222
165°	509	508	507	510	508	144
175°	521	519	519	522	519	50
180°	521	521	521	521	521	



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CATALOG NUMBER: S123DIW-S1165D460U935-4F0-1E-UDD-D

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1242.4	1242.4	1242.4	1242.4	1242.4	1242.4	1242.4	1242.4	1242.4	1242.4	1242.4
2.5°	1247.8	1247.2	1246.4	1245.7	1244.9	1243.6	1241.7	1239.8	1237.9	1236.0	1237.9
5°	1243.8	1243.2	1242.6	1242.0	1241.4	1240.2	1238.4	1236.6	1234.8	1233.0	1235.4
7.5°	1231.6	1231.7	1231.8	1232.0	1232.1	1231.3	1229.5	1227.8	1226.1	1224.3	1227.3
10°	1220.8	1221.4	1222.0	1222.6	1223.2	1222.7	1221.2	1219.7	1218.2	1216.7	1219.7
12.5°	1207.8	1208.6	1209.4	1210.3	1211.2	1211.1	1210.0	1209.0	1208.0	1206.9	1209.7
15°	1184.2	1185.2	1186.0	1187.0	1187.8	1188.2	1187.8	1187.6	1187.2	1187.0	1190.0
17.5°	1154.4	1156.2	1158.0	1159.9	1161.7	1162.5	1162.4	1162.3	1162.2	1162.0	1164.8
20°	1132.8	1134.6	1136.4	1138.2	1140.1	1141.3	1141.9	1142.5	1143.1	1143.7	1146.3
22.5°	1110.1	1111.9	1113.7	1115.5	1117.3	1118.6	1119.5	1120.3	1121.1	1122.0	1125.4
25°	1069.2	1072.2	1075.2	1078.2	1081.2	1083.1	1084.1	1084.9	1085.9	1086.8	1090.7
27.5°	1028.0	1031.5	1034.9	1038.4	1041.7	1044.5	1046.4	1048.3	1050.2	1052.1	1055.5
30°	998.8	1002.7	1006.6	1010.6	1014.4	1017.6	1020.0	1022.4	1024.8	1027.3	1030.9
32.5°	966.3	970.7	975.1	979.5	983.9	987.7	990.8	993.9	997.0	1000.1	1004.0
35°	920.3	925.1	930.0	934.8	939.6	943.9	947.9	951.7	955.6	959.6	964.1
37.5°	871.6	877.0	882.4	887.9	893.3	898.4	903.2	908.0	912.8	917.7	922.7
40°	839.1	844.6	850.0	855.3	860.7	866.5	872.5	878.5	884.5	890.5	895.7
42.5°	803.4	810.0	816.7	823.2	829.8	836.3	842.6	848.8	855.1	861.3	866.9
45°	752.5	759.7	766.9	774.1	781.4	788.8	796.3	803.7	811.3	818.8	824.5
47.5°	699.1	707.3	715.5	723.8	731.9	740.3	748.9	757.5	766.1	774.7	781.1
50°	664.5	673.0	681.4	689.7	698.2	707.1	716.4	725.7	735.0	744.3	751.3
52.5°	627.8	636.6	645.5	654.4	663.3	673.0	683.2	693.4	703.8	714.0	721.3
55°	573.9	583.8	593.7	603.6	613.5	623.9	634.7	645.6	656.4	667.3	675.4
57.5°	521.3	531.7	542.0	552.3	562.7	573.9	585.7	597.5	609.3	621.2	629.4
60°	484.5	495.3	506.2	517.0	527.8	539.4	551.7	564.0	576.4	588.8	597.2
62.5°	449.9	461.0	472.0	483.1	494.1	506.2	519.3	532.3	545.4	558.4	566.8
65°	396.6	408.3	420.0	431.7	443.5	456.0	469.2	482.4	495.7	508.9	517.9
67.5°	342.4	354.9	367.3	379.8	392.2	405.2	418.6	432.1	445.6	459.1	468.9
70°	304.5	317.5	330.4	343.3	356.3	370.0	384.4	398.8	413.3	427.7	437.3
72.5°	269.8	282.8	295.8	308.7	321.6	335.5	350.4	365.3	380.3	395.2	405.1
75°	215.2	229.4	243.5	257.6	271.7	286.3	301.4	316.4	331.4	346.5	356.4
77.5°	167.6	181.8	196.0	210.3	224.5	239.3	254.4	269.6	284.7	299.9	310.4
80°	134.0	148.7	163.5	178.2	193.0	208.1	223.8	239.4	255.0	270.7	280.9
82.5°	104.8	119.8	134.7	149.7	164.6	180.1	196.0	211.9	227.7	243.6	253.8
85°	66.3	81.4	96.4	111.4	126.5	142.0	157.9	173.8	189.8	205.7	215.9
87.5°	36.1	51.2	66.4	81.5	96.7	112.0	127.6	143.2	158.7	174.3	184.6
90°	18.0	33.6	49.2	64.7	80.3	96.4	112.9	129.3	145.8	162.2	172.8
92.5°	23.7	36.8	49.9	62.9	75.9	90.4	106.3	122.3	138.3	154.2	164.7
95°	38.5	46.7	54.9	63.1	71.3	83.3	98.9	114.6	130.3	145.9	155.9
97.5°	60.7	69.7	78.7	87.7	96.7	105.1	113.0	120.9	128.8	136.7	146.4
100°	77.6	88.9	100.2	111.6	123.0	128.8	129.2	129.7	130.1	130.5	139.9
102.5°	96.9	106.8	116.7	126.6	136.5	140.9	139.8	138.8	137.8	136.7	143.0
105°	126.1	134.2	142.4	150.6	158.8	165.4	170.7	175.8	181.0	186.2	179.4
107.5°	155.6	162.5	169.4	176.2	183.1	193.4	206.8	220.3	233.8	247.3	244.2
110°	175.2	181.3	187.4	193.6	199.7	209.1	222.1	235.1	248.1	261.1	266.0



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	195.0	200.1	205.2	210.3	215.3	224.1	236.6	249.1	261.6	274.1	281.7
115°	223.0	227.1	231.3	235.4	239.5	247.4	259.0	270.5	282.1	293.8	301.9
117.5°	251.2	254.0	256.8	259.7	262.6	269.3	279.8	290.4	301.0	311.5	319.3
120°	267.7	269.9	272.2	274.5	276.8	283.0	293.2	303.4	313.6	323.7	331.4
122.5°	285.6	287.1	288.4	289.9	291.3	296.9	306.7	316.4	326.2	336.0	343.1
125°	308.8	309.5	310.2	310.9	311.6	316.5	325.5	334.7	343.7	352.8	359.3
127.5°	332.7	333.1	333.5	333.9	334.2	338.3	345.9	353.5	361.2	368.8	375.1
130°	347.6	347.9	348.4	348.7	349.1	352.5	358.9	365.2	371.5	377.9	384.0
132.5°	360.8	361.4	362.0	362.6	363.3	366.1	371.2	376.3	381.3	386.4	392.3
135°	382.2	382.4	382.6	382.8	383.1	385.0	388.7	392.3	396.0	399.6	405.3
137.5°	400.5	400.9	401.3	401.7	402.2	403.4	405.4	407.5	409.5	411.6	416.7
140°	411.8	412.3	412.8	413.4	413.9	414.7	415.9	417.0	418.2	419.3	424.2
142.5°	423.3	423.5	423.8	424.0	424.3	424.6	425.2	425.6	426.0	426.5	430.8
145°	439.3	439.5	439.9	440.1	440.5	440.7	440.8	441.0	441.2	441.3	443.9
147.5°	453.0	453.4	453.7	454.2	454.5	454.9	455.0	455.2	455.4	455.6	456.4
150°	462.3	462.5	462.8	463.0	463.3	463.5	463.6	463.8	464.0	464.2	464.3
152.5°	470.6	470.7	470.9	471.0	471.1	471.2	471.3	471.4	471.5	471.7	471.9
155°	482.3	482.2	482.0	481.9	481.7	481.6	481.7	481.8	481.9	482.0	482.4
157.5°	491.5	491.5	491.5	491.5	491.5	491.4	491.3	491.2	491.1	491.0	491.5
160°	497.1	497.0	496.9	496.8	496.7	496.6	496.5	496.5	496.4	496.3	496.8
162.5°	502.3	502.1	501.9	501.7	501.4	501.3	501.2	501.1	501.0	500.9	501.5
165°	508.7	508.4	508.2	507.9	507.6	507.5	507.4	507.3	507.2	507.1	507.8
167.5°	513.7	513.3	513.0	512.6	512.3	512.1	512.1	512.1	512.1	512.1	512.8
170°	516.4	516.1	515.7	515.4	515.1	514.9	514.9	514.9	514.9	514.9	515.6
172.5°	518.2	517.9	517.5	517.0	516.6	516.4	516.5	516.6	516.7	516.7	517.4
175°	520.6	520.2	519.8	519.4	518.9	518.8	518.8	518.9	519.0	519.1	519.7
177.5°	521.2	520.9	520.6	520.2	519.9	519.8	519.9	519.9	520.0	520.0	520.6
180°	520.6	520.6	520.6	520.6	520.6	520.6	520.6	520.6	520.6	520.6	520.6



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1242.4	1242.4	1242.4	1242.4	1242.4	1242.4	1242.4	1242.4
2.5°	1239.8	1241.7	1243.6	1244.5	1244.2	1244.0	1243.7	1243.5
5°	1237.8	1240.2	1242.6	1243.6	1243.4	1243.0	1242.8	1242.4
7.5°	1230.3	1233.3	1236.3	1237.7	1237.3	1236.9	1236.6	1236.2
10°	1222.7	1225.7	1228.7	1229.9	1229.3	1228.7	1228.1	1227.5
12.5°	1212.5	1215.3	1218.1	1219.1	1218.5	1217.9	1217.3	1216.7
15°	1192.9	1195.9	1198.9	1200.3	1200.1	1199.7	1199.5	1199.1
17.5°	1167.4	1170.2	1172.9	1174.0	1173.6	1173.2	1172.8	1172.3
20°	1149.0	1151.8	1154.4	1156.0	1156.2	1156.6	1156.8	1157.2
22.5°	1128.9	1132.3	1135.7	1137.3	1137.1	1137.0	1136.8	1136.6
25°	1094.6	1098.5	1102.4	1104.4	1104.4	1104.4	1104.4	1104.4
27.5°	1058.9	1062.2	1065.6	1067.4	1067.6	1067.9	1068.2	1068.4
30°	1034.5	1038.1	1041.6	1043.4	1043.4	1043.4	1043.4	1043.4
32.5°	1007.9	1011.8	1015.5	1017.9	1018.6	1019.3	1020.0	1020.7
35°	968.6	973.1	977.6	980.5	981.7	982.9	984.1	985.2
37.5°	927.8	933.0	938.1	941.1	942.1	943.1	944.0	944.9
40°	900.8	905.9	911.0	914.1	915.3	916.5	917.7	918.9
42.5°	872.5	878.1	883.7	887.3	889.0	890.7	892.3	894.1
45°	830.3	835.9	841.7	845.8	848.2	850.6	853.0	855.3
47.5°	787.6	794.0	800.5	804.6	806.4	808.3	810.2	812.0
50°	758.2	765.2	772.1	776.5	778.7	780.8	782.9	785.0
52.5°	728.4	735.6	742.7	747.6	750.2	752.8	755.4	757.9
55°	683.5	691.6	699.7	705.0	707.4	709.8	712.2	714.6
57.5°	637.6	645.8	653.9	659.4	662.3	665.1	668.0	670.7
60°	605.5	614.0	622.4	628.3	631.6	634.9	638.2	641.5
62.5°	575.2	583.7	592.1	597.9	600.9	604.0	607.1	610.1
65°	526.9	536.0	545.0	551.0	554.0	557.0	560.0	563.0
67.5°	478.8	488.7	498.5	504.7	507.3	509.8	512.3	514.9
70°	446.9	456.6	466.1	472.5	475.5	478.5	481.5	484.5
72.5°	414.9	424.8	434.6	441.1	444.1	447.1	450.1	453.1
75°	366.4	376.3	386.2	393.0	396.6	400.2	403.8	407.3
77.5°	320.8	331.3	341.8	348.4	351.2	354.0	356.7	359.5
80°	291.1	301.4	311.6	318.2	321.2	324.3	327.3	330.2
82.5°	264.1	274.3	284.5	291.1	294.1	297.1	300.1	303.2
85°	226.2	236.4	246.6	253.2	256.2	259.2	262.3	265.3
87.5°	194.8	205.2	215.4	222.1	225.2	228.3	231.3	234.3
90°	183.4	193.9	204.5	211.4	214.6	217.7	220.9	224.1
92.5°	175.2	185.8	196.3	203.0	205.9	208.8	211.6	214.5
95°	165.8	175.7	185.7	192.2	195.2	198.2	201.1	204.1
97.5°	156.0	165.7	175.3	181.7	184.8	187.9	191.0	194.1
100°	149.3	158.8	168.2	174.4	177.5	180.6	183.7	186.8
102.5°	149.4	155.8	162.1	166.9	170.0	173.1	176.3	179.5
105°	172.6	165.8	159.0	157.0	160.0	162.8	165.7	168.6
107.5°	241.1	238.0	234.9	228.9	220.2	211.3	202.5	193.6
110°	271.0	276.0	281.0	278.5	268.6	258.8	248.9	239.0



TEST NUMBER: P332212-935

CATALOG NUMBER: S123DIW-S1165D460U935-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	289.3	297.0	304.6	308.4	308.5	308.6	308.6	308.7
115°	310.0	318.0	326.1	331.5	334.2	337.0	339.8	342.5
117.5°	327.2	335.1	342.9	348.0	350.4	352.8	355.2	357.7
120°	339.0	346.6	354.2	359.0	361.1	363.3	365.3	367.5
122.5°	350.3	357.5	364.6	369.3	371.4	373.6	375.8	378.0
125°	365.8	372.2	378.8	383.1	385.4	387.6	389.9	392.2
127.5°	381.3	387.4	393.7	397.8	399.7	401.5	403.4	405.3
130°	390.0	396.1	402.2	406.0	407.6	409.2	410.9	412.5
132.5°	398.0	403.9	409.7	413.5	415.3	417.2	419.0	420.8
135°	411.0	416.6	422.2	425.8	427.0	428.3	429.5	430.8
137.5°	421.9	427.1	432.2	435.5	436.8	438.2	439.5	440.8
140°	429.0	433.9	438.8	441.9	443.2	444.5	445.8	447.2
142.5°	435.1	439.4	443.7	446.4	447.7	449.0	450.2	451.5
145°	446.5	449.1	451.7	453.6	454.8	456.0	457.2	458.4
147.5°	457.3	458.2	459.1	459.9	460.5	461.2	461.9	462.6
150°	464.5	464.7	464.9	465.1	465.5	465.8	466.1	466.5
152.5°	472.3	472.5	472.9	472.9	472.6	472.3	472.1	471.7
155°	482.8	483.3	483.7	483.6	483.1	482.6	482.1	481.6
157.5°	492.1	492.6	493.1	493.0	492.3	491.7	491.0	490.3
160°	497.3	497.8	498.3	498.3	497.7	497.1	496.5	495.9
162.5°	502.1	502.7	503.3	503.3	502.7	502.2	501.7	501.2
165°	508.5	509.2	509.9	509.9	509.3	508.8	508.2	507.6
167.5°	513.5	514.1	514.8	514.8	514.1	513.5	512.8	512.1
170°	516.3	516.9	517.6	517.6	516.9	516.3	515.6	514.9
172.5°	518.1	518.8	519.4	519.4	518.7	517.9	517.2	516.4
175°	520.3	520.9	521.5	521.5	520.8	520.1	519.4	518.8
177.5°	521.2	521.7	522.3	522.2	521.5	520.8	520.1	519.4
180°	520.6	520.6	520.6	520.6	520.6	520.6	520.6	520.6

(END OF REPORT)