

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: P332049-930

Luminaire Tested: **S123DIP-S1165D365U930-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332049-930
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-9,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S123DIP-S1165D365U930-4F0-1E-UDD-D1
Description: DEFINE 3 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1165 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 365 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

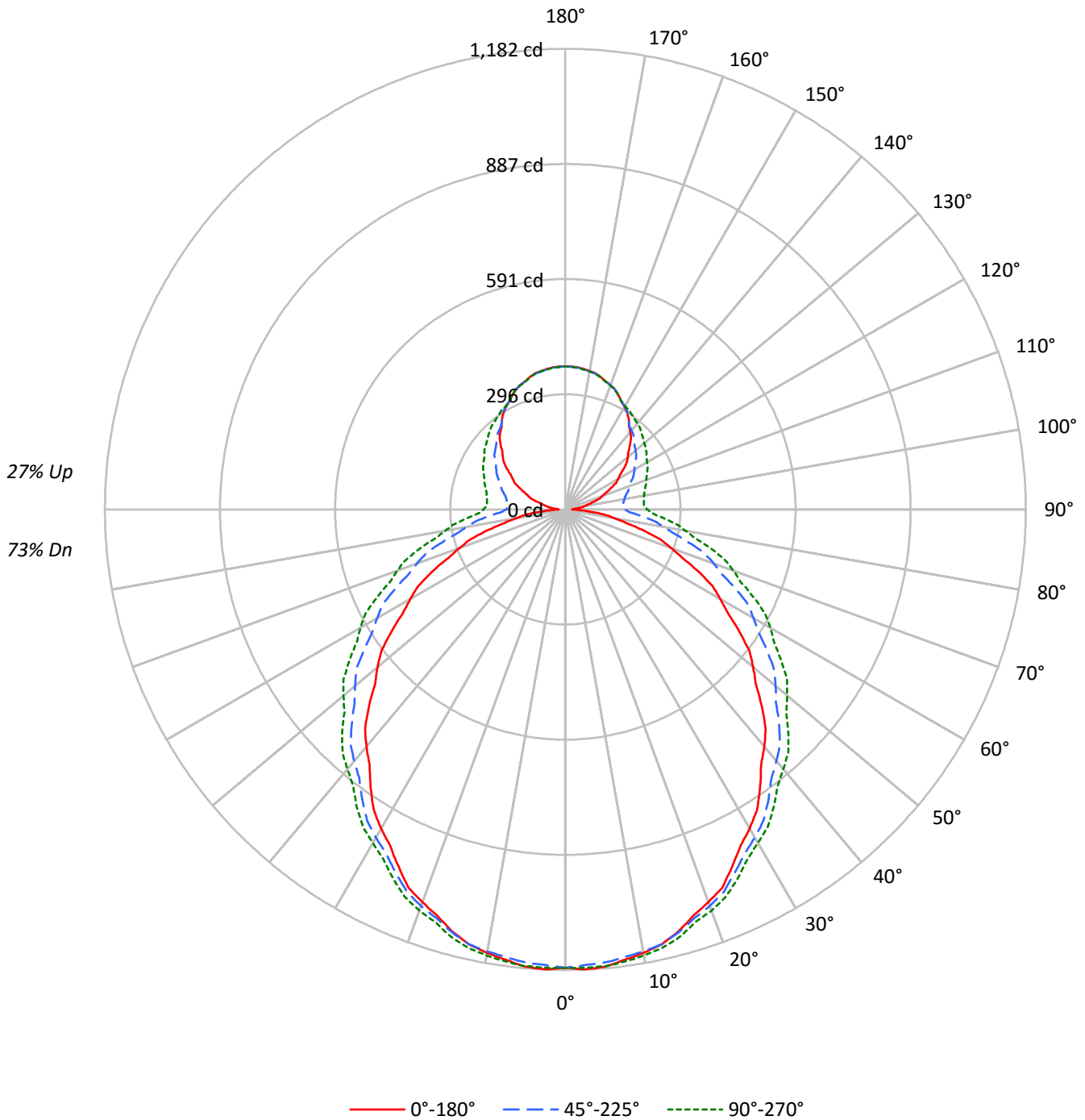
Lumens per Lamp: N/A
Luminaire Lumens: 4970.8 lumens
Efficiency: N/A
Efficacy: 99.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.25' x L: 4' x H: 0.08')
CIE Type: Semi-Direct

Input Watts (W): 49.8
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





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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	50	30	10	0	
RCR																						
0	113	113	113	113	107	107	107	107	96	96	96	86	86	86	77	77	77	77	77	77	73	
1	101	96	92	87	96	91	87	83	82	79	76	74	71	69	66	64	62	66	64	62	58	
2	92	83	76	70	87	79	73	67	71	66	62	64	60	56	57	54	51	57	54	51	48	
3	83	73	64	58	79	69	62	56	62	56	51	56	51	47	50	46	43	50	46	43	40	
4	76	64	55	49	72	61	53	47	55	49	43	50	44	40	44	40	37	44	40	37	34	
5	70	57	48	42	66	54	46	40	49	42	37	44	39	34	40	35	32	40	35	32	29	
6	64	51	42	36	61	49	41	35	44	38	32	40	34	30	36	31	28	36	31	28	25	
7	60	46	38	32	56	44	36	31	40	33	29	36	31	27	33	28	25	33	28	25	22	
8	55	42	34	28	52	40	33	27	37	30	25	33	28	24	30	26	22	30	26	22	20	
9	52	38	30	25	49	37	29	24	34	27	23	31	25	21	28	23	20	28	23	20	18	
10	48	35	28	23	46	34	27	22	31	25	21	28	23	19	26	21	18	26	21	18	16	

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



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	111.5	2.2
10°-20°	317.9	6.4
20°-30°	475.5	9.6
30°-40°	567.9	11.4
40°-50°	594.1	12.0
50°-60°	557.5	11.2
60°-70°	465.7	9.4
70°-80°	333.2	6.7
80°-90°	199.8	4.0
90°-100°	148.6	3.0
100°-110°	163.1	3.3
110°-120°	182.8	3.7
120°-130°	194.9	3.9
130°-140°	195.5	3.9
140°-150°	180.1	3.6
150°-160°	148.8	3.0
160°-170°	99.1	2.0
170°-180°	34.7	0.7
0°-30°	905.0	18.2
0°-40°	1472.8	29.6
0°-60°	2624.5	52.8
0°-90°	3623.1	72.9
90°-120°	494.5	9.9
90°-150°	1065.1	21.4
90°-180°	1348.0	27.1
0°-180°	4970.8	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	83	152	195	210	12
95°	31	84	148	188	202	30
105°	75	108	164	199	212	80
115°	129	147	191	221	232	128
125°	183	186	220	245	254	164
135°	235	236	249	270	277	181
145°	283	283	284	293	297	177
155°	323	323	323	324	322	149
165°	352	351	351	352	351	99
175°	366	365	365	366	364	35
180°	367	367	367	367	367	



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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	48.4	62.8	77.0	91.4	105.9	120.6	135.3	149.9	164.7	174.4
90°	17.0	31.6	46.1	60.7	75.3	90.3	105.7	121.0	136.4	151.7	161.7
92.5°	22.6	35.6	48.7	61.7	74.7	88.6	103.4	118.1	132.9	147.7	157.4
95°	31.1	42.6	54.2	65.8	77.3	90.3	104.8	119.3	133.7	148.2	157.3
97.5°	42.7	53.1	63.4	73.9	84.2	96.2	109.9	123.6	137.3	151.0	159.8
100°	50.7	60.3	69.7	79.2	88.7	100.2	113.6	127.0	140.4	153.8	162.3
102.5°	60.1	68.5	77.0	85.4	93.8	104.7	118.0	131.3	144.6	157.8	166.1
105°	75.1	82.0	89.0	96.0	103.0	112.8	125.6	138.4	151.3	164.1	172.1
107.5°	91.3	97.2	103.1	108.9	114.9	123.7	135.6	147.4	159.2	171.1	179.0
110°	101.3	106.6	111.9	117.1	122.4	130.7	142.3	153.8	165.3	176.8	184.5



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	112.8	117.2	121.4	125.7	130.0	137.6	148.6	159.6	170.6	181.5	189.0
115°	128.9	132.5	136.1	139.7	143.3	150.2	160.3	170.4	180.5	190.7	197.5
117.5°	146.0	148.2	150.5	152.7	154.9	160.8	170.2	179.7	189.1	198.6	205.4
120°	155.8	157.6	159.4	161.3	163.1	168.5	177.6	186.6	195.8	204.8	211.3
122.5°	167.1	168.1	169.2	170.2	171.2	176.1	184.9	193.6	202.4	211.2	217.4
125°	183.0	183.3	183.4	183.6	183.8	188.0	196.1	204.2	212.4	220.5	226.2
127.5°	198.9	199.1	199.2	199.3	199.4	202.8	209.5	216.2	223.0	229.7	234.9
130°	209.5	209.8	210.0	210.3	210.5	213.4	218.8	224.4	229.8	235.4	240.5
132.5°	219.2	219.6	220.0	220.5	220.9	223.4	227.8	232.2	236.7	241.1	246.0
135°	235.1	235.2	235.3	235.4	235.5	237.1	240.1	243.2	246.3	249.3	254.2
137.5°	249.8	249.9	250.0	250.1	250.1	251.2	253.2	255.0	257.0	258.9	263.2
140°	259.2	259.4	259.8	260.1	260.4	261.1	262.0	262.9	263.8	264.7	269.0
142.5°	268.6	268.7	268.8	268.9	269.0	269.1	269.5	269.7	270.0	270.3	274.0
145°	283.3	283.2	283.1	282.9	282.7	282.7	282.9	283.2	283.3	283.5	285.8
147.5°	295.0	295.2	295.5	295.7	295.9	296.1	296.3	296.4	296.6	296.9	297.5
150°	303.9	304.1	304.2	304.4	304.5	304.6	304.8	304.8	305.0	305.1	305.1
152.5°	311.4	311.5	311.7	311.9	312.1	312.2	312.3	312.3	312.4	312.5	312.6
155°	323.0	323.0	323.0	323.0	323.0	323.0	323.1	323.1	323.2	323.3	323.5
157.5°	332.9	332.8	332.7	332.6	332.6	332.6	332.6	332.6	332.7	332.8	333.0
160°	339.1	339.0	338.8	338.8	338.6	338.5	338.5	338.5	338.5	338.5	338.8
162.5°	344.6	344.5	344.3	344.1	343.9	343.9	343.9	344.0	344.1	344.1	344.4
165°	351.8	351.6	351.4	351.2	351.0	350.9	350.9	350.9	350.9	350.9	351.3
167.5°	357.5	357.3	357.0	356.7	356.4	356.4	356.4	356.4	356.5	356.6	356.9
170°	360.7	360.4	360.2	360.0	359.7	359.5	359.5	359.5	359.5	359.5	360.0
172.5°	363.3	363.0	362.7	362.5	362.2	362.1	362.1	362.1	362.1	362.1	362.5
175°	365.9	365.7	365.4	365.2	364.9	364.8	364.8	364.8	364.8	364.8	365.2
177.5°	367.0	366.8	366.6	366.4	366.2	366.1	366.1	366.1	366.1	366.1	366.4
180°	366.8	366.8	366.8	366.8	366.8	366.8	366.8	366.8	366.8	366.8	366.8



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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°	184.1	193.9	203.6	209.9	212.8	215.6	218.5	221.4
90°	171.6	181.6	191.5	198.0	200.9	203.9	206.8	209.9
92.5°	167.0	176.7	186.3	192.4	194.9	197.5	200.1	202.6
95°	166.4	175.5	184.5	190.5	193.4	196.2	199.0	201.9
97.5°	168.6	177.3	186.1	191.9	194.8	197.5	200.4	203.3
100°	170.7	179.2	187.7	193.4	196.3	199.3	202.3	205.3
102.5°	174.3	182.5	190.7	196.2	199.1	201.9	204.7	207.6
105°	180.1	188.0	196.0	201.4	204.1	206.8	209.5	212.1
107.5°	186.8	194.6	202.4	207.6	210.0	212.5	214.9	217.3
110°	192.2	199.8	207.5	212.4	214.5	216.6	218.8	220.9



TEST NUMBER: P332049-930

CATALOG NUMBER: S123DIP-S1165D365U930-4F0-1E-UDD-D1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	196.5	203.9	211.4	216.4	218.9	221.4	223.9	226.3
115°	204.5	211.3	218.3	222.8	225.0	227.2	229.4	231.7
117.5°	212.1	218.9	225.7	230.1	232.1	234.2	236.2	238.2
120°	217.8	224.3	230.7	234.9	236.8	238.6	240.5	242.4
122.5°	223.5	229.7	235.8	239.8	241.7	243.4	245.2	247.0
125°	232.0	237.7	243.4	247.1	248.9	250.6	252.3	254.0
127.5°	240.2	245.5	250.8	254.2	255.8	257.6	259.2	260.8
130°	245.6	250.8	256.0	259.2	260.4	261.7	262.9	264.2
132.5°	250.8	255.7	260.6	263.8	265.4	267.0	268.6	270.2
135°	259.1	263.9	268.8	271.9	273.2	274.5	275.8	277.1
137.5°	267.3	271.6	275.8	278.5	279.7	280.9	282.1	283.2
140°	273.1	277.4	281.5	284.1	285.1	286.1	287.1	288.0
142.5°	277.8	281.5	285.3	287.7	288.8	289.9	291.0	292.0
145°	288.0	290.2	292.4	293.9	294.8	295.7	296.5	297.4
147.5°	298.2	298.9	299.5	300.2	300.8	301.5	302.1	302.8
150°	305.1	305.1	305.1	305.2	305.4	305.6	305.7	306.0
152.5°	312.7	312.8	312.9	312.8	312.7	312.4	312.2	311.9
155°	323.8	324.0	324.3	324.2	323.8	323.3	322.9	322.4
157.5°	333.3	333.6	333.9	333.8	333.5	333.1	332.7	332.4
160°	339.2	339.5	339.8	339.8	339.6	339.3	339.1	338.8
162.5°	344.7	345.0	345.4	345.3	344.9	344.5	344.1	343.6
165°	351.7	352.0	352.5	352.5	352.0	351.6	351.1	350.7
167.5°	357.3	357.8	358.2	358.2	357.8	357.3	356.9	356.6
170°	360.4	360.9	361.3	361.3	360.9	360.4	360.0	359.5
172.5°	362.9	363.3	363.7	363.7	363.2	362.8	362.3	361.9
175°	365.5	365.9	366.3	366.2	365.8	365.3	364.9	364.4
177.5°	366.7	367.0	367.3	367.3	367.0	366.6	366.2	365.8
180°	366.8	366.8	366.8	366.8	366.8	366.8	366.8	366.8

(END OF REPORT)