

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: P332048-930

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

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332048-930  
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: S123DIP-S1165D365U930-4F0-1E-UDD-D  
Description: DEFINE 3 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 1165 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 365 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

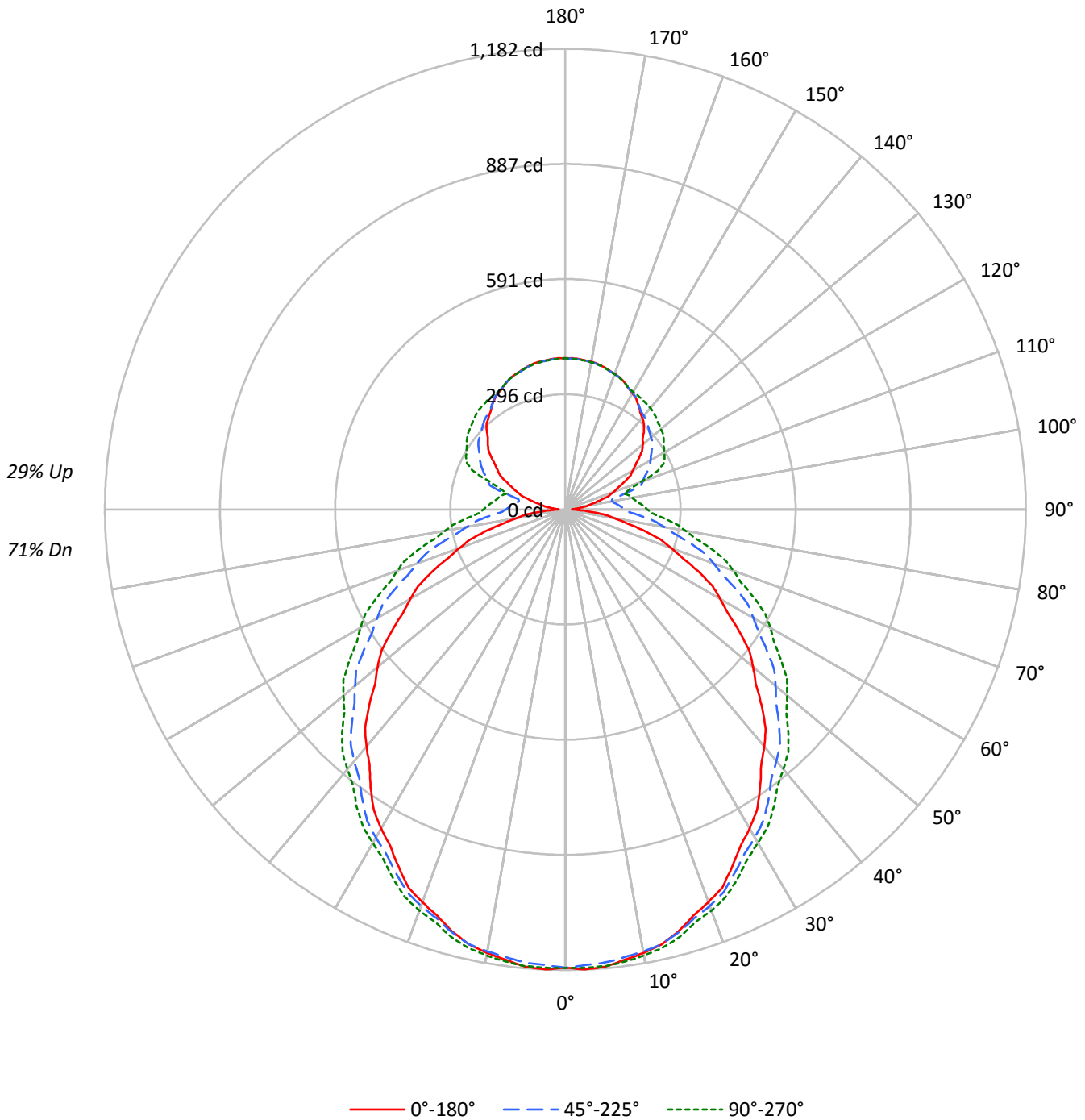
Lumens per Lamp: N/A  
Luminaire Lumens: 5137.2 lumens  
Efficiency: N/A  
Efficacy: 103.2 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.37  
Luminous Opening: Rectangular w/ Sides (W: 0.25' x L: 4' x H: 0.08')  
CIE Type: Semi-Direct

Input Watts (W): 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





TEST NUMBER: P332048-930

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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	50	30	10	0	
RCR																						
0	112	112	112	112	106	106	106	106	95	95	95	84	84	84	75	75	75	71				
1	101	96	91	87	95	91	87	83	81	78	75	72	70	67	64	62	60	56				
2	91	83	76	70	86	78	72	67	70	65	61	63	59	55	55	52	50	46				
3	83	72	64	58	78	69	61	55	61	55	51	55	50	46	49	45	42	38				
4	76	64	55	49	71	61	53	47	54	48	43	49	43	39	43	39	36	32				
5	70	57	48	41	65	54	46	40	49	42	37	44	38	34	39	34	31	28				
6	64	51	42	36	60	48	40	35	44	37	32	39	34	29	35	31	27	24				
7	59	46	38	32	56	44	36	30	40	33	28	36	30	26	32	27	24	21				
8	55	42	34	28	52	40	32	27	36	30	25	33	27	23	29	25	21	19				
9	51	38	30	25	48	37	29	24	33	27	22	30	25	21	27	23	19	17				
10	48	35	28	22	45	34	27	22	31	25	20	28	23	19	25	21	17	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	6.2
20°-30°	475.5	9.3
30°-40°	567.9	11.1
40°-50°	594.1	11.6
50°-60°	557.5	10.9
60°-70°	465.7	9.1
70°-80°	333.2	6.5
80°-90°	199.8	3.9
90°-100°	138.8	2.7
100°-110°	158.8	3.1
110°-120°	222.6	4.3
120°-130°	240.5	4.7
130°-140°	235.3	4.6
140°-150°	208.7	4.1
150°-160°	165.7	3.2
160°-170°	106.9	2.1
170°-180°	36.8	0.7
0°-30°	905.0	17.6
0°-40°	1472.8	28.7
0°-60°	2624.5	51.1
0°-90°	3623.1	70.5
90°-120°	520.1	10.1
90°-150°	1204.6	23.4
90°-180°	1514.0	29.5
0°-180°	5137.2	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°	32	71	136	176	190	33
105°	96	130	159	146	156	101
115°	168	186	233	266	278	166
125°	231	235	272	298	308	207
135°	285	286	301	324	330	220
145°	327	328	329	339	345	205
155°	359	359	359	360	359	165
165°	379	378	378	380	378	107
175°	388	386	387	388	386	37
180°	388	388	388	388	388	



TEST NUMBER: P332048-930

CATALOG NUMBER: S123DIP-S1165D365U930-4F0-1E-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	48.4	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°	21.0	33.4	45.8	58.2	70.6	84.3	99.2	114.1	129.1	144.0	153.8
95°	31.6	40.2	48.7	57.2	65.6	77.2	91.8	106.5	121.2	135.8	145.1
97.5°	47.9	56.7	65.6	74.4	83.2	92.0	100.8	109.5	118.2	126.9	135.9
100°	60.3	70.6	81.0	91.4	101.8	108.5	111.7	114.8	117.9	121.0	129.8
102.5°	74.4	83.6	92.6	101.7	110.9	116.4	118.4	120.3	122.4	124.3	130.8
105°	96.1	103.6	111.2	118.7	126.3	133.3	139.7	146.3	152.7	159.2	155.9
107.5°	117.7	124.1	130.4	136.9	143.2	152.7	165.2	177.7	190.3	202.8	202.1
110°	132.2	137.8	143.4	149.0	154.7	163.5	175.7	187.8	199.8	212.0	217.3



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	146.9	151.6	156.2	160.9	165.6	173.7	185.4	197.1	208.7	220.3	227.6
115°	167.5	171.3	175.0	178.9	182.6	190.0	200.8	211.7	222.5	233.3	240.8
117.5°	188.3	190.9	193.5	196.1	198.7	204.9	214.8	224.8	234.7	244.6	251.9
120°	200.5	202.4	204.5	206.4	208.5	214.3	223.9	233.4	243.0	252.6	259.7
122.5°	213.9	215.1	216.2	217.4	218.7	223.9	233.1	242.2	251.4	260.7	267.3
125°	230.9	231.4	231.9	232.4	232.9	237.4	246.0	254.5	263.0	271.5	277.6
127.5°	248.6	248.8	249.1	249.3	249.6	253.2	260.3	267.5	274.7	281.8	287.6
130°	259.7	259.9	260.2	260.3	260.6	263.7	269.6	275.6	281.5	287.5	293.2
132.5°	269.3	269.7	270.2	270.6	271.1	273.7	278.4	283.2	288.0	292.7	298.2
135°	285.2	285.3	285.4	285.5	285.6	287.3	290.7	294.1	297.5	300.9	306.2
137.5°	298.7	299.1	299.3	299.5	299.8	300.8	302.8	304.7	306.6	308.5	313.3
140°	307.0	307.4	307.7	308.1	308.5	309.2	310.2	311.3	312.3	313.4	317.9
142.5°	315.5	315.6	315.8	315.9	316.1	316.3	316.7	317.1	317.5	317.8	321.9
145°	327.4	327.6	327.8	327.9	328.1	328.2	328.3	328.5	328.6	328.7	331.1
147.5°	337.4	337.7	337.9	338.3	338.5	338.8	338.9	339.0	339.2	339.2	340.1
150°	344.3	344.5	344.6	344.9	345.0	345.2	345.4	345.4	345.6	345.7	345.8
152.5°	350.5	350.6	350.7	350.7	350.8	351.0	351.0	351.1	351.1	351.2	351.5
155°	359.3	359.1	359.0	358.9	358.7	358.7	358.8	358.8	358.9	359.0	359.3
157.5°	366.1	366.1	366.1	366.0	366.0	366.0	365.9	365.8	365.7	365.7	366.1
160°	370.2	370.1	370.1	370.0	370.0	369.9	369.8	369.7	369.7	369.7	370.0
162.5°	374.1	374.0	373.8	373.7	373.5	373.3	373.2	373.2	373.2	373.1	373.5
165°	378.9	378.6	378.5	378.3	378.1	378.0	377.9	377.8	377.7	377.7	378.2
167.5°	382.5	382.3	382.0	381.8	381.5	381.4	381.4	381.4	381.4	381.4	381.9
170°	384.6	384.3	384.1	383.8	383.6	383.4	383.4	383.4	383.4	383.4	384.0
172.5°	386.0	385.7	385.4	385.1	384.7	384.7	384.7	384.7	384.8	384.8	385.4
175°	387.8	387.4	387.1	386.9	386.5	386.4	386.5	386.5	386.5	386.6	387.1
177.5°	388.2	388.0	387.8	387.5	387.2	387.1	387.2	387.2	387.3	387.3	387.8
180°	387.8	387.8	387.8	387.8	387.8	387.8	387.8	387.8	387.8	387.8	387.8



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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°	163.7	173.6	183.4	189.7	192.4	195.1	197.8	200.5
95°	154.3	163.6	172.9	179.0	181.8	184.7	187.5	190.4
97.5°	145.0	153.9	162.9	168.8	171.8	174.7	177.7	180.5
100°	138.5	147.3	156.1	161.9	164.9	167.8	170.6	173.6
102.5°	137.2	143.7	150.1	154.7	157.8	160.7	163.6	166.6
105°	152.5	149.1	145.8	145.4	148.1	150.8	153.5	156.2
107.5°	201.5	200.7	200.1	196.7	190.7	184.7	178.6	172.6
110°	222.6	227.8	233.1	232.4	225.4	218.6	211.7	204.8





TEST NUMBER: P332048-930

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

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	234.7	242.0	249.2	253.1	253.6	254.2	254.8	255.4
115°	248.3	255.8	263.2	268.2	270.8	273.3	275.8	278.3
117.5°	259.2	266.4	273.8	278.6	280.8	283.1	285.4	287.6
120°	266.8	273.8	280.9	285.4	287.4	289.3	291.4	293.3
122.5°	274.0	280.7	287.3	291.7	293.8	295.8	297.8	299.9
125°	283.7	289.8	296.0	300.0	302.1	304.3	306.4	308.5
127.5°	293.5	299.3	305.2	309.0	310.8	312.6	314.4	316.3
130°	298.8	304.5	310.1	313.8	315.4	316.9	318.5	320.1
132.5°	303.6	309.1	314.5	318.0	319.8	321.6	323.3	325.1
135°	311.5	316.8	322.1	325.5	326.7	327.9	329.1	330.4
137.5°	318.1	322.9	327.8	330.8	332.1	333.4	334.7	336.0
140°	322.5	327.0	331.5	334.4	335.7	337.0	338.3	339.6
142.5°	325.9	329.9	333.9	336.6	337.8	339.0	340.3	341.5
145°	333.5	335.9	338.3	340.1	341.3	342.4	343.6	344.7
147.5°	340.9	341.7	342.5	343.3	344.1	344.7	345.4	346.2
150°	346.0	346.1	346.3	346.5	346.8	347.2	347.6	348.0
152.5°	351.7	352.0	352.2	352.2	352.0	351.8	351.6	351.5
155°	359.6	360.0	360.3	360.2	359.9	359.5	359.1	358.7
157.5°	366.5	366.9	367.3	367.2	366.7	366.2	365.7	365.2
160°	370.4	370.8	371.2	371.1	370.7	370.2	369.8	369.3
162.5°	374.0	374.4	374.8	374.9	374.5	374.1	373.7	373.2
165°	378.7	379.3	379.8	379.8	379.4	378.9	378.5	378.0
167.5°	382.4	382.9	383.4	383.4	382.9	382.4	381.9	381.4
170°	384.5	385.0	385.5	385.5	385.0	384.5	384.0	383.4
172.5°	385.9	386.4	386.9	386.9	386.3	385.7	385.1	384.6
175°	387.5	388.0	388.4	388.4	387.9	387.3	386.9	386.4
177.5°	388.2	388.6	389.0	388.9	388.4	387.9	387.3	386.9
180°	387.8	387.8	387.8	387.8	387.8	387.8	387.8	387.8

(END OF REPORT)