

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: P332050-930

Luminaire Tested: **S123DIP-S1165D365U930-4F0-1E-UDD-D4**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332050-930
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-17,
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-D4
Description: DEFINE 3 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1165 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 365 LUMENS PER FOOT, BATWING OPTIC
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

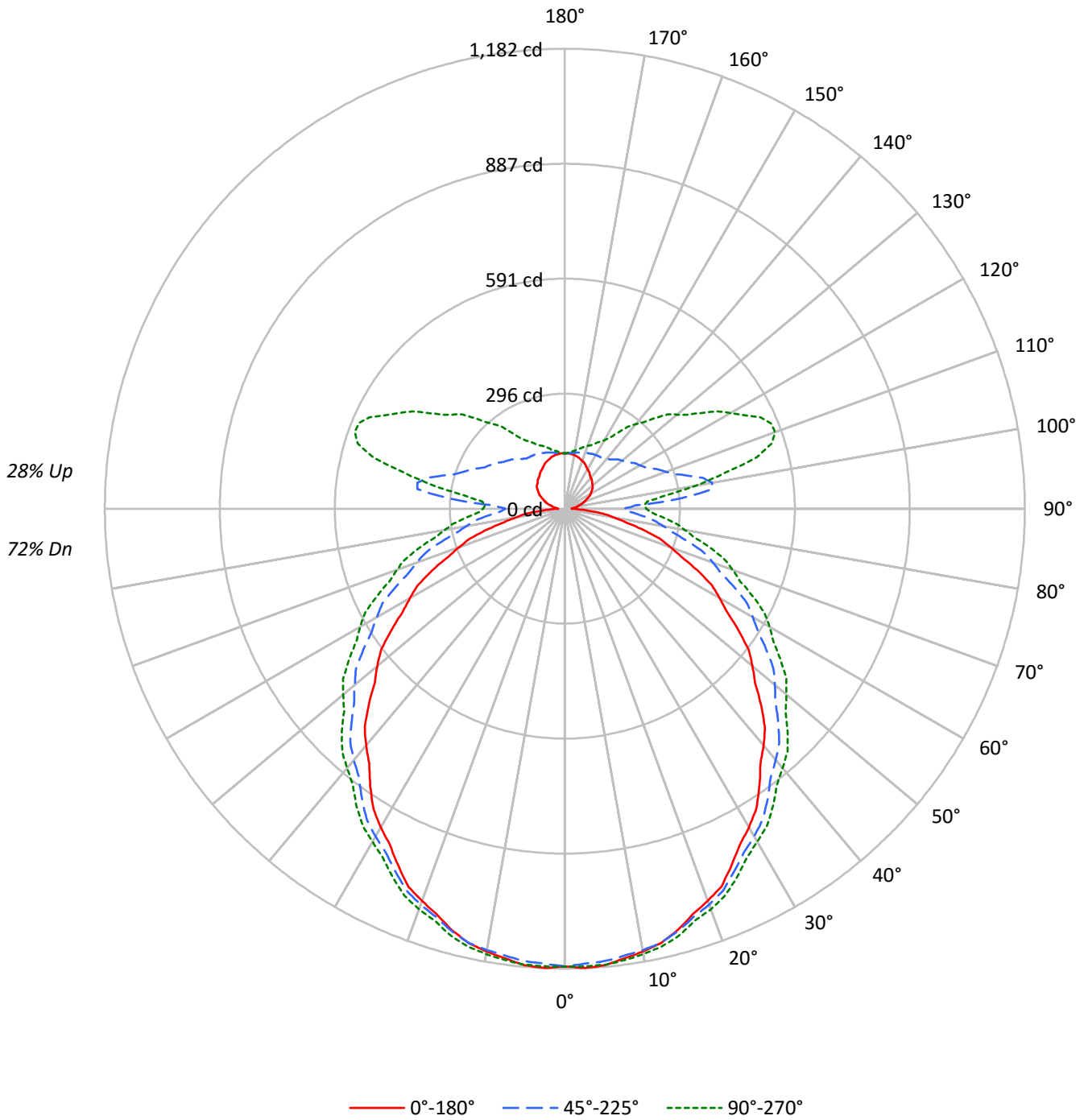
Lumens per Lamp: N/A
Luminaire Lumens: 5025.4 lumens
Efficiency: N/A
Efficacy: 100.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.25' x L: 4' x H: 0.08')
CIE Type: Semi-Direct

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	112	112	112	112	107	107	107	107	96	96	96	86	86	86	76	76	76	76	76	76	72	
1	101	96	91	87	96	91	87	83	82	79	76	73	71	68	65	63	62	62	62	62	58	
2	92	83	76	70	86	79	73	67	71	66	61	63	59	56	56	53	51	51	51	51	47	
3	83	73	64	58	78	69	62	56	62	56	51	56	51	47	50	46	43	43	43	43	39	
4	76	64	55	49	72	61	53	47	55	48	43	49	44	40	44	40	36	36	36	36	33	
5	70	57	48	42	66	54	46	40	49	42	37	44	39	34	40	35	31	31	31	31	29	
6	64	51	42	36	61	49	41	35	44	37	32	40	34	30	36	31	28	28	28	28	25	
7	59	46	38	32	56	44	36	31	40	33	28	36	31	26	33	28	24	24	24	24	22	
8	55	42	34	28	52	40	32	27	37	30	25	33	28	24	30	25	22	22	22	22	20	
9	51	38	30	25	49	37	29	24	34	27	23	31	25	21	28	23	20	20	20	20	18	
10	48	35	28	23	46	34	27	22	31	25	20	28	23	19	26	21	18	18	18	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	6.3
20°-30°	475.5	9.5
30°-40°	567.9	11.3
40°-50°	594.1	11.8
50°-60°	557.5	11.1
60°-70°	465.7	9.3
70°-80°	333.2	6.6
80°-90°	199.8	4.0
90°-100°	203.9	4.1
100°-110°	315.9	6.3
110°-120°	281.8	5.6
120°-130°	210.9	4.2
130°-140°	154.4	3.1
140°-150°	106.9	2.1
150°-160°	72.2	1.4
160°-170°	42.4	0.8
170°-180°	13.8	0.3
0°-30°	905.0	18.0
0°-40°	1472.8	29.3
0°-60°	2624.5	52.2
0°-90°	3623.1	72.1
90°-120°	801.6	16.0
90°-150°	1273.8	25.3
90°-180°	1402.0	27.9
0°-180°	5025.4	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	83	152	195	210	12
95°	24	97	298	215	213	22
105°	44	92	328	536	510	46
115°	66	97	245	486	555	65
125°	86	103	206	367	428	77
135°	99	117	178	284	330	76
145°	111	126	161	212	238	69
155°	125	135	156	177	185	57
165°	136	140	149	158	161	38
175°	142	142	143	145	145	13
180°	142	142	142	142	142	



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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	48.5	62.8	77.1	91.5	105.9	120.6	135.3	150.0	164.7	174.3
90°	17.2	31.8	46.3	61.1	75.7	90.5	105.8	121.2	136.6	152.1	161.4
92.5°	19.2	33.5	48.5	63.3	78.4	96.0	117.9	144.6	171.0	180.9	179.5
95°	23.9	35.9	50.1	66.1	84.7	108.5	146.9	203.8	265.1	297.7	274.3
97.5°	29.3	39.5	52.1	66.4	83.8	107.6	144.3	206.0	298.2	382.5	409.4
100°	32.9	42.2	53.4	66.5	82.6	104.9	138.2	193.9	282.8	384.3	449.4
102.5°	36.7	45.4	55.4	67.3	81.8	102.6	133.6	182.7	263.0	363.2	445.3
105°	43.7	51.4	59.9	70.2	82.5	101.0	128.8	170.7	237.4	327.8	418.4
107.5°	49.9	56.5	64.0	73.2	84.1	101.2	126.5	162.7	218.3	295.6	378.3
110°	54.4	60.3	66.9	75.3	85.3	101.6	126.0	159.2	209.2	277.4	353.6



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	59.4	64.5	70.2	77.5	86.7	102.1	125.1	156.3	201.2	262.4	330.4
115°	65.5	70.0	75.2	81.4	89.8	104.4	125.6	153.4	193.1	245.1	301.8
117.5°	72.6	76.0	79.5	84.3	91.9	104.9	125.4	150.7	185.2	230.6	280.5
120°	76.6	78.8	81.7	86.0	92.9	105.6	125.3	149.7	181.2	223.0	268.6
122.5°	81.0	82.6	84.7	88.6	94.6	107.0	126.2	149.0	178.2	216.2	258.0
125°	85.9	86.5	88.3	91.4	96.9	108.8	127.2	148.1	173.7	206.4	243.2
127.5°	90.7	91.3	93.2	96.1	101.9	112.9	129.5	147.7	170.2	197.6	229.2
130°	93.8	94.3	96.6	99.8	105.6	116.0	131.3	147.9	168.0	191.8	220.6
132.5°	95.0	96.0	98.8	102.9	108.9	118.7	132.6	147.8	165.4	186.5	212.2
135°	98.8	99.6	102.6	106.6	112.3	121.6	133.6	146.5	161.2	178.5	200.6
137.5°	102.3	103.3	106.2	110.6	116.3	124.3	134.7	145.8	157.8	171.7	190.4
140°	103.9	105.3	108.2	112.8	118.5	126.2	135.4	144.9	155.6	167.3	184.0
142.5°	106.6	107.6	110.5	114.4	119.9	126.6	134.9	143.5	152.8	162.7	177.6
145°	111.0	111.6	114.0	118.0	122.6	129.1	136.6	144.3	152.4	161.0	172.5
147.5°	114.3	114.8	117.3	121.1	125.8	131.4	138.3	145.3	152.4	160.0	168.5
150°	117.2	117.6	119.8	123.6	127.6	132.8	139.4	145.5	152.4	159.1	166.2
152.5°	120.3	120.3	122.6	125.9	129.5	134.4	140.1	145.9	151.7	157.9	164.4
155°	124.7	124.7	126.5	129.4	132.6	136.6	141.5	146.1	151.0	155.9	161.6
157.5°	128.3	128.6	130.0	132.5	135.2	138.3	142.2	146.3	150.0	154.1	158.5
160°	131.1	131.1	132.2	134.5	136.6	139.4	142.9	146.3	149.5	152.7	156.5
162.5°	133.1	133.1	134.1	135.9	137.7	140.1	143.2	146.1	148.6	151.3	154.3
165°	136.2	136.0	136.6	138.0	139.2	141.2	143.5	145.5	147.2	149.3	151.6
167.5°	138.6	138.3	138.6	139.7	140.5	141.8	143.4	145.0	145.9	147.2	148.9
170°	140.0	139.4	139.7	140.6	141.2	141.8	143.2	144.3	145.0	145.8	147.2
172.5°	141.0	140.6	140.6	141.3	141.6	141.9	143.2	144.1	144.2	144.6	145.6
175°	142.0	141.8	141.5	142.0	142.0	142.4	142.9	143.5	143.2	143.2	143.7
177.5°	142.6	142.4	142.1	142.4	142.4	142.4	142.6	143.0	142.6	142.4	142.6
180°	142.4	142.4	142.4	142.4	142.4	142.4	142.4	142.4	142.4	142.4	142.4



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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	193.8	203.6	209.9	212.7	215.6	218.6	221.4
90°	171.4	181.3	191.4	198.2	200.7	203.9	207.0	209.5
92.5°	179.8	184.3	191.4	196.0	198.0	199.8	202.8	204.8
95°	248.3	223.6	217.2	212.7	210.0	210.3	211.2	212.9
97.5°	393.1	350.2	321.6	292.8	274.3	264.2	259.3	259.7
100°	467.7	452.7	427.1	391.8	365.6	347.4	339.0	342.1
102.5°	488.0	495.4	483.7	463.3	443.4	429.7	423.1	419.3
105°	486.6	523.4	536.9	534.6	523.9	515.5	508.9	510.1
107.5°	454.3	508.7	541.5	556.8	559.6	558.4	557.8	557.7
110°	427.0	487.4	531.2	556.1	566.5	571.0	572.7	574.5



TEST NUMBER: P332050-930

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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	398.9	460.3	508.2	538.9	556.2	565.8	570.5	573.2
115°	361.9	418.9	468.1	504.0	527.9	542.9	550.9	554.6
117.5°	332.2	382.3	427.1	463.5	488.3	505.0	515.5	519.7
120°	315.8	361.3	402.4	435.8	460.6	478.7	487.5	491.3
122.5°	301.7	343.2	381.6	412.8	435.0	451.5	461.1	465.4
125°	282.0	319.4	353.0	380.1	400.5	415.2	424.4	428.4
127.5°	263.7	297.3	328.0	352.7	371.1	383.8	392.3	396.1
130°	251.9	283.2	312.0	335.2	352.1	364.2	372.0	376.0
132.5°	240.6	269.6	296.5	318.8	335.0	347.3	354.7	358.2
135°	225.0	250.6	274.4	294.2	309.7	319.8	326.4	329.8
137.5°	210.5	231.8	252.4	269.6	282.9	293.1	298.9	301.7
140°	201.8	220.8	238.9	254.1	266.5	276.0	282.0	283.2
142.5°	192.9	209.3	225.1	238.5	249.2	257.8	263.4	264.6
145°	184.0	195.8	207.3	217.4	225.8	232.9	236.4	238.1
147.5°	177.0	185.2	193.4	200.2	206.6	211.7	215.0	216.2
150°	172.8	179.5	185.6	191.3	196.2	199.9	202.2	202.8
152.5°	170.3	176.0	181.4	186.0	189.6	192.6	193.7	193.8
155°	166.6	171.1	175.5	178.9	181.5	183.8	184.4	184.7
157.5°	162.5	166.3	169.7	172.4	174.6	176.3	176.8	176.8
160°	160.2	163.4	166.2	168.3	170.2	172.0	172.0	171.7
162.5°	157.4	160.1	162.8	164.6	165.9	167.4	167.4	167.1
165°	153.8	155.6	157.6	159.1	160.2	161.3	161.0	161.0
167.5°	150.7	152.1	153.2	154.3	154.7	155.6	155.3	155.3
170°	148.6	149.5	150.7	151.2	151.6	152.1	151.8	151.8
172.5°	146.8	147.5	148.4	148.7	148.8	149.4	148.9	148.6
175°	144.3	144.6	145.2	145.2	145.2	145.5	145.2	145.0
177.5°	142.8	143.0	143.2	143.2	143.0	143.2	142.8	142.8
180°	142.4	142.4	142.4	142.4	142.4	142.4	142.4	142.4

(END OF REPORT)