

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: P332005

Luminaire Tested: **S123DIP-S1000D365U835-4F0-1E-UDD-D4**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332005  
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-S1000D365U835-4F0-1E-UDD-D4  
Description: DEFINE 3 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 1000 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: 5513.4 lumens  
Efficiency: N/A  
Efficacy: 126.7 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

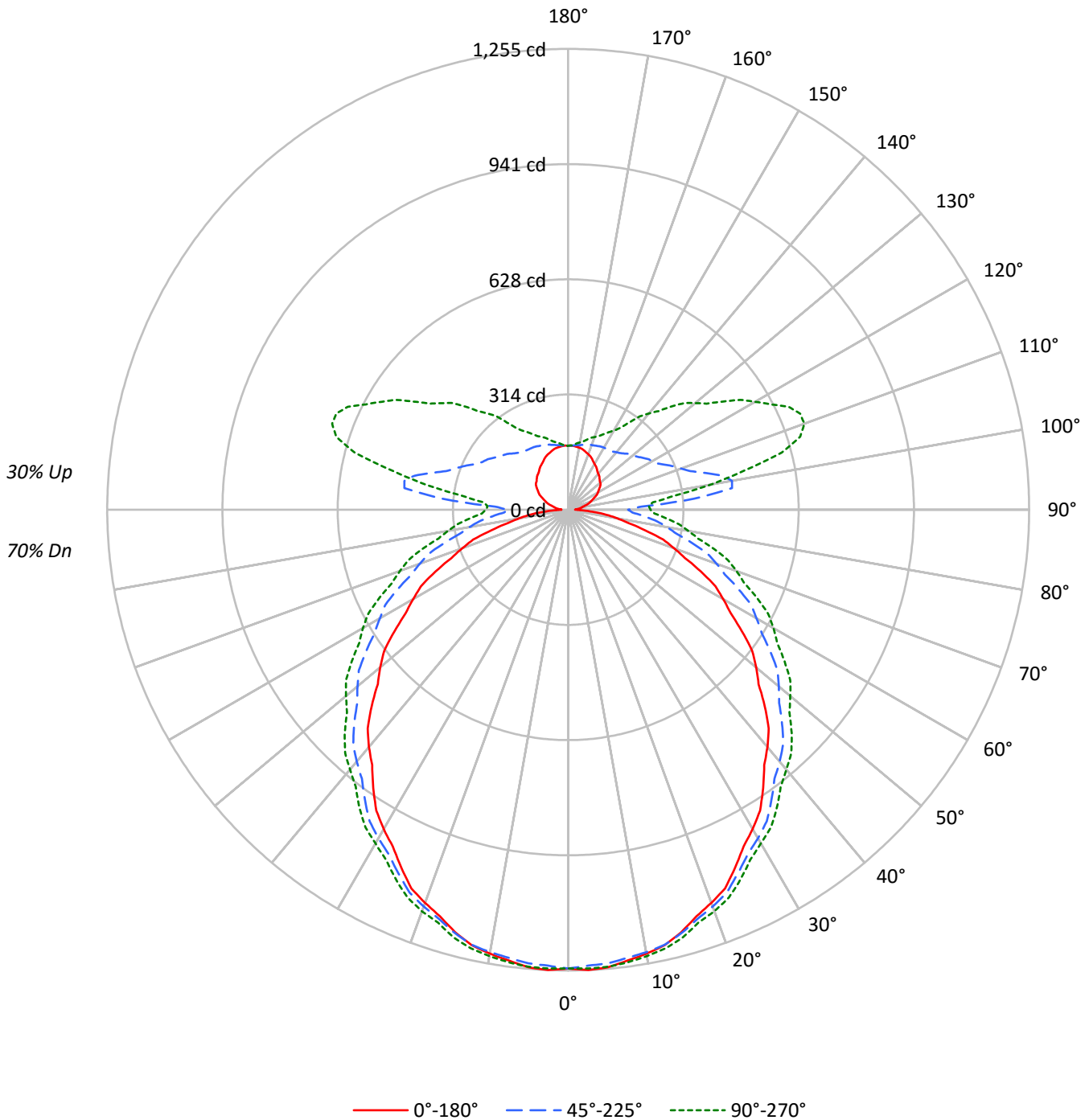
Input Watts (W): 43.5  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	0
RCR																		
0	112	112	112	112	106	106	106	106	94	94	94	84	84	84	74	74	74	70
1	101	96	91	87	95	90	86	83	81	77	75	72	69	67	63	62	60	56
2	91	83	76	70	86	78	72	67	70	65	61	62	58	55	55	52	49	46
3	83	72	64	58	78	68	61	55	61	55	50	54	50	46	48	45	41	38
4	76	64	55	48	71	60	53	46	54	48	43	48	43	39	43	39	35	32
5	69	57	48	41	65	54	46	40	48	42	37	43	38	34	38	34	31	28
6	64	51	42	36	60	48	40	35	44	37	32	39	34	29	35	30	27	24
7	59	46	37	31	56	44	36	30	39	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	36	29	24	33	27	22	30	25	21	27	22	19	17
10	48	35	27	22	45	34	26	22	31	24	20	28	22	19	25	21	17	15

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	13448	13448	13448
5°	13490	13110	13117
10°	13370	12808	12744
15°	13197	12465	12336
20°	12951	12074	11888
25°	12647	11623	11416
30°	12335	11217	10938
35°	11987	10789	10556
40°	11653	10399	10147
45°	11284	10024	9821
50°	10920	9654	9461
55°	10517	9275	9136
60°	10125	8890	8804
65°	9723	8481	8409
70°	9115	8019	8005
75°	8351	7490	7593
80°	7467	6971	7122
85°	6653	6616	6850



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	118.4	2.1
10°-20°	337.6	6.1
20°-30°	505.0	9.2
30°-40°	603.1	10.9
40°-50°	631.0	11.4
50°-60°	592.1	10.7
60°-70°	494.5	9.0
70°-80°	353.8	6.4
80°-90°	212.4	3.9
90°-100°	229.5	4.2
100°-110°	372.4	6.8
110°-120°	335.6	6.1
120°-130°	253.0	4.6
130°-140°	186.8	3.4
140°-150°	130.6	2.4
150°-160°	88.6	1.6
160°-170°	52.0	0.9
170°-180°	16.9	0.3
0°-30°	961.1	17.4
0°-40°	1564.1	28.4
0°-60°	2787.2	50.6
0°-90°	3848.0	69.8
90°-120°	937.5	17.0
90°-150°	1507.9	27.4
90°-180°	1665.0	30.2
0°-180°	5513.4	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1249	1249	1249	1249	1249	
5°	1251	1248	1240	1250	1249	119
15°	1191	1195	1194	1206	1206	335
25°	1075	1088	1093	1110	1111	495
35°	926	947	965	985	991	579
45°	757	790	823	848	860	583
55°	577	622	671	706	719	517
65°	399	452	512	551	566	394
75°	216	281	348	392	410	231
85°	67	135	207	251	267	70
90°	18	89	163	208	224	13
95°	27	108	344	236	232	25
105°	52	106	386	636	602	55
115°	79	115	290	580	662	79
125°	105	125	246	439	513	93
135°	121	143	216	342	397	93
145°	136	154	198	259	290	85
155°	153	165	191	217	226	70
165°	167	172	183	194	198	47
175°	174	174	176	178	178	17
180°	175	175	175	175	175	



TEST NUMBER: P332005

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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1249.4	1249.4	1249.4	1249.4	1249.4	1249.4	1249.4	1249.4	1249.4	1249.4	1249.4
2.5°	1254.9	1254.2	1253.4	1252.7	1252.0	1250.6	1248.7	1246.8	1244.8	1242.9	1244.8
5°	1250.8	1250.2	1249.6	1249.0	1248.4	1247.2	1245.4	1243.5	1241.7	1239.9	1242.3
7.5°	1238.5	1238.7	1238.8	1238.9	1239.0	1238.2	1236.5	1234.7	1232.9	1231.2	1234.2
10°	1227.7	1228.3	1228.9	1229.5	1230.1	1229.6	1228.1	1226.6	1225.1	1223.6	1226.6
12.5°	1214.6	1215.4	1216.3	1217.1	1218.0	1217.9	1216.9	1215.8	1214.8	1213.8	1216.6
15°	1190.9	1191.8	1192.7	1193.6	1194.5	1194.8	1194.5	1194.2	1193.9	1193.6	1196.7
17.5°	1161.0	1162.8	1164.6	1166.4	1168.2	1169.1	1169.0	1168.8	1168.7	1168.6	1171.3
20°	1139.2	1141.0	1142.8	1144.6	1146.4	1147.7	1148.3	1148.9	1149.5	1150.1	1152.8
22.5°	1116.3	1118.1	1120.0	1121.8	1123.6	1124.9	1125.8	1126.6	1127.5	1128.3	1131.7
25°	1075.2	1078.2	1081.3	1084.3	1087.3	1089.3	1090.2	1091.1	1092.0	1092.9	1096.8
27.5°	1033.8	1037.3	1040.7	1044.2	1047.6	1050.3	1052.3	1054.2	1056.1	1058.1	1061.5
30°	1004.4	1008.4	1012.3	1016.2	1020.2	1023.3	1025.8	1028.2	1030.6	1033.0	1036.7
32.5°	971.8	976.2	980.6	985.0	989.4	993.2	996.4	999.5	1002.7	1005.8	1009.7
35°	925.5	930.3	935.2	940.0	944.9	949.2	953.2	957.1	961.0	965.0	969.5
37.5°	876.5	882.0	887.4	892.8	898.3	903.4	908.3	913.1	917.9	922.8	927.9
40°	843.8	849.3	854.7	860.2	865.6	871.4	877.4	883.5	889.5	895.6	900.7
42.5°	807.9	814.6	821.2	827.9	834.5	841.0	847.3	853.6	859.9	866.2	871.8
45°	756.7	764.0	771.3	778.5	785.8	793.2	800.7	808.3	815.9	823.4	829.2
47.5°	703.1	711.3	719.6	727.8	736.0	744.5	753.1	761.8	770.4	779.1	785.5
50°	668.3	676.7	685.2	693.7	702.1	711.1	720.4	729.8	739.2	748.6	755.5
52.5°	631.2	640.2	649.2	658.1	667.1	676.7	687.1	697.4	707.7	718.1	725.3
55°	577.1	587.1	597.0	607.0	617.0	627.4	638.3	649.2	660.1	671.0	679.2
57.5°	524.3	534.7	545.1	555.5	565.9	577.1	589.0	600.9	612.8	624.7	632.9
60°	487.3	498.1	509.0	519.9	530.8	542.4	554.8	567.3	579.7	592.1	600.5
62.5°	452.4	463.5	474.7	485.8	496.9	509.1	522.2	535.3	548.4	561.6	570.0
65°	398.8	410.6	422.4	434.2	446.0	458.5	471.8	485.1	498.4	511.8	520.8
67.5°	344.3	356.9	369.4	381.9	394.4	407.5	421.0	434.6	448.1	461.7	471.6
70°	306.2	319.2	332.2	345.3	358.3	372.0	386.5	401.1	415.6	430.1	439.8
72.5°	271.4	284.4	297.4	310.4	323.4	337.4	352.4	367.4	382.4	397.4	407.3
75°	216.4	230.6	244.8	259.1	273.3	287.9	303.1	318.2	333.3	348.4	358.4
77.5°	168.5	182.8	197.2	211.5	225.8	240.6	255.9	271.1	286.4	301.6	312.1
80°	134.7	149.6	164.4	179.2	194.0	209.3	225.0	240.8	256.5	272.2	282.5
82.5°	105.3	120.4	135.5	150.5	165.6	181.1	197.1	213.0	229.0	245.0	255.3
85°	66.7	81.8	96.9	112.1	127.2	142.8	158.8	174.8	190.8	206.9	217.2
87.5°	36.3	51.5	66.8	82.0	97.2	112.6	128.3	143.9	159.5	175.2	185.4
90°	18.4	33.9	49.5	65.3	80.9	96.7	113.2	129.7	146.1	162.6	172.6
92.5°	21.0	36.5	52.8	68.9	85.3	104.8	129.2	159.6	189.7	199.4	196.1
95°	27.0	39.8	55.5	73.3	94.3	121.4	166.3	233.7	306.5	344.3	314.1
97.5°	33.8	44.8	58.5	74.4	94.1	121.4	164.3	237.8	348.5	449.7	481.4
100°	38.4	48.4	60.6	75.2	93.4	118.9	157.6	223.8	330.7	453.1	531.4
102.5°	43.2	52.6	63.5	76.9	93.2	117.1	152.9	211.0	307.4	428.2	527.5
105°	51.9	60.2	69.6	81.1	95.1	116.1	148.2	197.6	277.4	386.2	496.1
107.5°	59.7	66.9	75.2	85.5	98.0	117.4	146.5	189.1	255.3	348.3	448.5
110°	65.4	71.9	79.1	88.5	99.9	118.6	146.6	185.5	245.0	326.7	419.0



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	71.6	77.2	83.4	91.8	102.3	119.9	146.3	182.8	236.1	309.4	391.6
115°	79.2	84.3	90.0	97.2	106.8	123.6	148.0	180.4	227.3	289.5	357.9
117.5°	88.0	91.8	95.8	101.3	110.3	125.3	148.8	178.3	219.1	273.2	333.2
120°	93.1	95.7	98.9	104.0	112.2	126.8	149.5	177.8	215.0	264.6	319.6
122.5°	98.5	100.3	102.9	107.5	114.7	129.2	151.2	177.6	212.1	257.2	307.4
125°	104.8	105.5	107.6	111.5	118.2	132.2	153.3	177.6	207.6	246.4	290.6
127.5°	110.7	111.4	113.7	117.4	124.5	137.5	156.7	178.0	204.3	237.0	274.7
130°	114.3	115.1	118.0	121.9	129.0	141.4	159.2	178.6	202.4	230.7	265.0
132.5°	116.1	117.4	120.8	125.8	133.1	144.8	161.0	179.0	199.8	224.9	255.7
135°	120.8	121.9	125.4	130.4	137.6	148.6	162.9	178.2	195.7	216.3	242.6
137.5°	125.1	126.4	130.0	135.4	142.5	152.1	164.5	177.9	192.3	209.0	231.3
140°	127.2	128.9	132.5	138.1	145.2	154.5	165.6	177.1	190.1	204.4	224.1
142.5°	130.6	131.8	135.4	140.2	147.0	155.3	165.4	175.9	187.3	199.5	217.0
145°	136.0	136.8	139.6	144.6	150.3	158.3	167.5	177.0	186.9	197.5	211.3
147.5°	140.2	140.8	143.9	148.5	154.3	161.2	169.6	178.2	186.9	196.2	206.6
150°	143.8	144.2	147.0	151.6	156.5	162.9	171.0	178.5	186.9	195.1	203.9
152.5°	147.5	147.6	150.4	154.4	158.8	164.9	171.9	179.0	186.1	193.7	201.6
155°	153.0	153.0	155.1	158.7	162.6	167.5	173.5	179.2	185.2	191.2	198.2
157.5°	157.4	157.7	159.4	162.5	165.8	169.6	174.4	179.5	184.0	189.0	194.4
160°	160.8	160.8	162.2	165.0	167.5	171.0	175.3	179.5	183.4	187.3	191.9
162.5°	163.3	163.3	164.5	166.7	168.9	171.9	175.6	179.2	182.3	185.6	189.3
165°	167.1	166.8	167.5	169.3	170.7	173.2	176.0	178.5	180.6	183.1	185.9
167.5°	170.0	169.6	170.0	171.3	172.3	173.9	175.9	177.9	178.9	180.5	182.6
170°	171.7	171.0	171.4	172.4	173.2	173.9	175.6	177.0	177.8	178.8	180.6
172.5°	172.9	172.4	172.5	173.3	173.7	174.1	175.6	176.8	176.9	177.4	178.6
175°	174.2	173.9	173.5	174.2	174.2	174.6	175.3	176.0	175.6	175.6	176.3
177.5°	174.9	174.6	174.3	174.6	174.6	174.6	174.9	175.4	174.9	174.6	174.9
180°	174.6	174.6	174.6	174.6	174.6	174.6	174.6	174.6	174.6	174.6	174.6



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1249.4	1249.4	1249.4	1249.4	1249.4	1249.4	1249.4	1249.4
2.5°	1246.8	1248.7	1250.6	1251.5	1251.2	1251.0	1250.8	1250.5
5°	1244.7	1247.2	1249.6	1250.6	1250.3	1250.0	1249.7	1249.4
7.5°	1237.2	1240.3	1243.3	1244.6	1244.3	1243.9	1243.5	1243.2
10°	1229.6	1232.6	1235.7	1236.9	1236.3	1235.7	1235.1	1234.5
12.5°	1219.3	1222.1	1224.9	1226.0	1225.4	1224.8	1224.2	1223.6
15°	1199.7	1202.7	1205.7	1207.1	1206.8	1206.5	1206.2	1205.9
17.5°	1174.0	1176.8	1179.5	1180.6	1180.2	1179.8	1179.4	1178.9
20°	1155.5	1158.2	1161.0	1162.5	1162.8	1163.1	1163.4	1163.7
22.5°	1135.2	1138.6	1142.1	1143.7	1143.5	1143.4	1143.2	1143.0
25°	1100.8	1104.7	1108.6	1110.6	1110.6	1110.6	1110.6	1110.6
27.5°	1064.8	1068.2	1071.6	1073.4	1073.7	1073.9	1074.2	1074.4
30°	1040.3	1043.9	1047.5	1049.4	1049.4	1049.4	1049.4	1049.4
32.5°	1013.6	1017.4	1021.3	1023.6	1024.3	1025.0	1025.8	1026.5
35°	974.0	978.6	983.1	986.0	987.2	988.4	989.6	990.8
37.5°	933.1	938.2	943.4	946.4	947.4	948.3	949.3	950.3
40°	905.8	911.0	916.1	919.3	920.5	921.7	922.9	924.1
42.5°	877.4	883.0	888.7	892.3	894.0	895.7	897.4	899.1
45°	834.9	840.7	846.4	850.5	852.9	855.3	857.8	860.2
47.5°	792.0	798.5	804.9	809.1	811.0	812.9	814.7	816.6
50°	762.5	769.4	776.4	780.9	783.1	785.2	787.3	789.4
52.5°	732.5	739.7	746.9	751.8	754.4	757.0	759.6	762.2
55°	687.3	695.5	703.7	708.9	711.4	713.8	716.2	718.6
57.5°	641.2	649.4	657.6	663.2	666.0	668.8	671.7	674.5
60°	609.0	617.5	625.9	631.8	635.2	638.5	641.8	645.1
62.5°	578.5	587.0	595.4	601.2	604.3	607.4	610.5	613.6
65°	529.9	539.0	548.0	554.1	557.1	560.1	563.2	566.2
67.5°	481.5	491.4	501.3	507.6	510.1	512.7	515.2	517.7
70°	449.4	459.1	468.8	475.2	478.2	481.2	484.2	487.3
72.5°	417.3	427.2	437.1	443.6	446.6	449.6	452.7	455.7
75°	368.4	378.4	388.3	395.2	398.8	402.4	406.0	409.7
77.5°	322.7	333.2	343.7	350.4	353.1	355.9	358.7	361.5
80°	292.8	303.1	313.3	320.0	323.0	326.0	329.1	332.1
82.5°	265.6	275.8	286.1	292.8	295.8	298.8	301.8	304.9
85°	227.4	237.7	248.0	254.7	257.7	260.7	263.7	266.8
87.5°	195.7	206.1	216.4	223.2	226.2	229.3	232.4	235.3
90°	183.2	193.8	204.5	211.8	214.5	217.9	221.3	223.9
92.5°	194.9	198.8	206.1	210.7	212.8	214.5	217.7	219.8
95°	280.7	249.1	239.7	233.2	229.5	229.4	229.9	231.5
97.5°	460.1	406.0	369.4	333.2	310.1	297.2	290.7	290.7
100°	552.6	532.7	500.2	455.9	423.2	400.4	389.7	393.1
102.5°	578.6	586.3	570.7	544.7	519.9	502.5	494.0	488.9
105°	578.4	622.2	637.4	633.8	620.3	609.6	601.0	601.9
107.5°	540.3	605.8	644.9	662.8	665.8	663.9	662.8	662.2
110°	507.8	580.7	633.1	663.0	675.3	680.5	682.2	683.9





TEST NUMBER: P332005

CATALOG NUMBER: S123DIP-S1000D365U835-4F0-1E-UDD-D4

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	474.5	548.6	606.1	643.0	663.8	675.2	680.6	683.4
115°	430.5	499.2	558.4	601.8	630.7	648.7	658.2	662.4
117.5°	395.6	455.9	509.7	553.6	583.6	603.8	616.3	621.1
120°	376.4	431.1	480.4	520.7	550.7	572.6	583.2	587.4
122.5°	360.0	409.9	455.9	493.5	520.4	540.3	551.8	556.6
125°	337.2	382.1	422.3	454.8	479.6	497.2	508.2	512.8
127.5°	316.1	356.5	393.1	422.8	445.0	460.4	470.4	474.7
130°	302.6	340.1	374.5	402.3	422.9	437.4	446.6	451.3
132.5°	289.6	324.4	356.5	383.2	402.8	417.6	426.2	430.3
135°	271.8	302.3	330.7	354.3	373.2	385.3	393.1	397.1
137.5°	255.2	280.5	305.1	325.7	341.8	354.0	360.9	364.1
140°	245.3	267.8	289.3	307.6	322.5	333.9	341.1	342.2
142.5°	235.1	254.7	273.4	289.4	302.4	312.7	319.3	320.4
145°	225.0	239.1	252.8	264.9	274.9	283.5	287.6	289.5
147.5°	216.9	226.9	236.7	244.9	252.7	258.8	262.6	263.9
150°	212.0	220.2	227.6	234.6	240.5	245.0	247.7	248.3
152.5°	208.9	215.9	222.5	228.1	232.4	236.1	237.5	237.7
155°	204.3	209.9	215.2	219.4	222.6	225.5	226.2	226.5
157.5°	199.3	204.0	208.1	211.5	214.2	216.3	216.9	216.8
160°	196.5	200.4	203.9	206.4	208.8	211.0	211.0	210.6
162.5°	193.1	196.4	199.7	201.9	203.5	205.3	205.3	205.0
165°	188.7	190.8	193.3	195.1	196.5	197.9	197.5	197.5
167.5°	184.9	186.5	187.9	189.2	189.8	190.8	190.5	190.5
170°	182.3	183.4	184.8	185.5	185.9	186.6	186.2	186.2
172.5°	180.1	180.9	182.0	182.4	182.5	183.2	182.6	182.3
175°	177.0	177.4	178.1	178.1	178.1	178.5	178.1	177.8
177.5°	175.1	175.4	175.7	175.7	175.4	175.7	175.1	175.1
180°	174.6	174.6	174.6	174.6	174.6	174.6	174.6	174.6

(END OF REPORT)