

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: P332005-830

Luminaire Tested: **S123DIP-S1000D365U830-4F0-1E-UDD-D4**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332005-830  
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-S1000D365U830-4F0-1E-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: 5196.6 lumens  
Efficiency: N/A  
Efficacy: 119.5 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

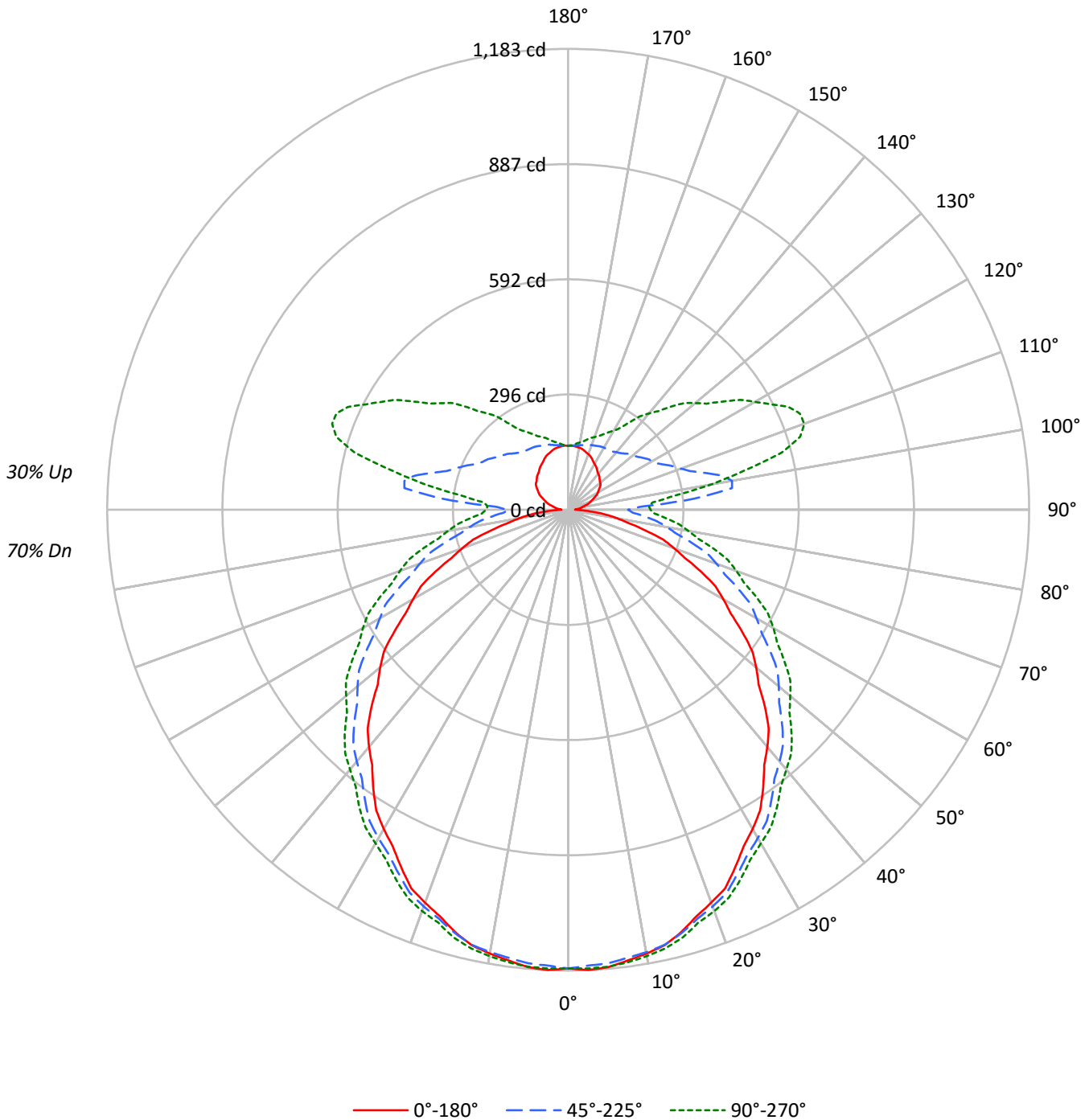
Input Watts (W): 43.5  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	12676	12676	12676
5°	12715	12357	12363
10°	12602	12072	12012
15°	12439	11748	11627
20°	12206	11380	11204
25°	11920	10955	10760
30°	11627	10572	10310
35°	11297	10169	9950
40°	10983	9801	9564
45°	10635	9448	9257
50°	10293	9100	8917
55°	9912	8741	8611
60°	9543	8380	8298
65°	9165	7994	7927
70°	8591	7558	7545
75°	7872	7060	7157
80°	7040	6572	6712
85°	6274	6235	6458



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	111.6	2.1
10°-20°	318.2	6.1
20°-30°	476.0	9.2
30°-40°	568.4	10.9
40°-50°	594.7	11.4
50°-60°	558.1	10.7
60°-70°	466.1	9.0
70°-80°	333.5	6.4
80°-90°	200.2	3.9
90°-100°	216.3	4.2
100°-110°	351.0	6.8
110°-120°	316.3	6.1
120°-130°	238.4	4.6
130°-140°	176.1	3.4
140°-150°	123.1	2.4
150°-160°	83.5	1.6
160°-170°	49.0	0.9
170°-180°	16.0	0.3
0°-30°	905.9	17.4
0°-40°	1474.3	28.4
0°-60°	2627.1	50.6
0°-90°	3626.9	69.8
90°-120°	883.6	17.0
90°-150°	1421.3	27.4
90°-180°	1570.0	30.2
0°-180°	5196.6	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1178	1178	1178	1178	1178	
5°	1179	1176	1169	1178	1178	112
15°	1122	1126	1125	1137	1137	316
25°	1013	1026	1030	1046	1047	467
35°	872	893	910	928	934	545
45°	713	744	776	800	811	550
55°	544	586	632	666	677	487
65°	376	426	482	519	534	371
75°	204	264	328	369	386	218
85°	63	127	195	237	252	66
90°	17	84	153	196	211	12
95°	25	102	324	223	218	23
105°	49	100	364	599	567	51
115°	75	109	273	547	624	74
125°	99	118	232	413	483	88
135°	114	135	204	323	374	88
145°	128	145	186	244	273	80
155°	144	156	180	205	214	66
165°	158	162	173	183	186	44
175°	164	164	166	168	168	16
180°	165	165	165	165	165	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1177.6	1177.6	1177.6	1177.6	1177.6	1177.6	1177.6	1177.6	1177.6	1177.6	1177.6
2.5°	1182.8	1182.1	1181.4	1180.7	1180.1	1178.7	1177.0	1175.2	1173.3	1171.5	1173.3
5°	1178.9	1178.4	1177.8	1177.2	1176.7	1175.5	1173.8	1172.1	1170.4	1168.7	1170.9
7.5°	1167.3	1167.5	1167.6	1167.7	1167.8	1167.1	1165.5	1163.8	1162.1	1160.5	1163.3
10°	1157.2	1157.7	1158.3	1158.9	1159.4	1159.0	1157.5	1156.1	1154.7	1153.3	1156.1
12.5°	1144.8	1145.6	1146.4	1147.2	1148.0	1147.9	1147.0	1145.9	1145.0	1144.1	1146.7
15°	1122.5	1123.3	1124.2	1125.0	1125.9	1126.1	1125.9	1125.6	1125.3	1125.0	1127.9
17.5°	1094.3	1096.0	1097.7	1099.4	1101.1	1101.9	1101.8	1101.6	1101.5	1101.5	1104.0
20°	1073.7	1075.4	1077.1	1078.8	1080.5	1081.8	1082.3	1082.9	1083.5	1084.0	1086.6
22.5°	1052.2	1053.9	1055.6	1057.3	1059.0	1060.3	1061.1	1061.9	1062.7	1063.5	1066.7
25°	1013.4	1016.2	1019.2	1022.0	1024.8	1026.7	1027.6	1028.4	1029.3	1030.1	1033.8
27.5°	974.4	977.7	980.9	984.2	987.4	990.0	991.8	993.6	995.4	997.3	1000.5
30°	946.7	950.5	954.1	957.8	961.6	964.5	966.9	969.1	971.4	973.6	977.1
32.5°	916.0	920.1	924.3	928.4	932.6	936.1	939.1	942.1	945.1	948.0	951.7
35°	872.3	876.8	881.5	886.0	890.6	894.7	898.4	902.1	905.8	909.6	913.8
37.5°	826.1	831.3	836.4	841.5	846.7	851.5	856.1	860.6	865.2	869.8	874.6
40°	795.3	800.5	805.6	810.8	815.9	821.3	827.0	832.7	838.4	844.1	848.9
42.5°	761.5	767.8	774.0	780.3	786.6	792.7	798.6	804.6	810.5	816.4	821.7
45°	713.2	720.1	727.0	733.8	740.6	747.6	754.7	761.9	769.0	776.1	781.6
47.5°	662.7	670.4	678.3	686.0	693.7	701.7	709.8	718.0	726.1	734.3	740.4
50°	629.9	637.8	645.8	653.8	661.8	670.2	679.0	687.9	696.7	705.6	712.1
52.5°	594.9	603.4	611.9	620.3	628.8	637.8	647.6	657.3	667.0	676.8	683.6
55°	543.9	553.4	562.7	572.1	581.5	591.4	601.6	611.9	622.2	632.4	640.2
57.5°	494.2	504.0	513.8	523.6	533.4	543.9	555.2	566.4	577.6	588.8	596.5
60°	459.3	469.5	479.8	490.0	500.3	511.2	522.9	534.7	546.4	558.1	566.0
62.5°	426.4	436.9	447.4	457.9	468.3	479.8	492.2	504.5	516.9	529.3	537.2
65°	375.9	387.0	398.1	409.3	420.4	432.2	444.7	457.2	469.8	482.4	490.9
67.5°	324.5	336.4	348.2	360.0	371.7	384.1	396.8	409.6	422.4	435.2	444.5
70°	288.6	300.9	313.1	325.5	337.7	350.6	364.3	378.1	391.7	405.4	414.5
72.5°	255.8	268.1	280.3	292.6	304.8	318.0	332.2	346.3	360.4	374.6	383.9
75°	204.0	217.4	230.7	244.2	257.6	271.4	285.7	299.9	314.1	328.4	337.8
77.5°	158.8	172.3	185.9	199.3	212.8	226.8	241.2	255.5	269.9	284.3	294.2
80°	127.0	141.0	155.0	168.9	182.9	197.3	212.1	227.0	241.8	256.6	266.3
82.5°	99.2	113.5	127.7	141.9	156.1	170.7	185.8	200.8	215.8	230.9	240.6
85°	62.9	77.1	91.3	105.7	119.9	134.6	149.7	164.8	179.8	195.0	204.7
87.5°	34.2	48.5	63.0	77.3	91.6	106.1	120.9	135.6	150.3	165.1	174.7
90°	17.3	32.0	46.7	61.5	76.3	91.1	106.7	122.2	137.7	153.3	162.7
92.5°	19.8	34.4	49.8	64.9	80.4	98.8	121.8	150.4	178.8	187.9	184.8
95°	25.4	37.5	52.3	69.1	88.9	114.4	156.7	220.3	288.9	324.5	296.1
97.5°	31.9	42.2	55.1	70.1	88.7	114.4	154.9	224.1	328.5	423.9	453.7
100°	36.2	45.6	57.1	70.9	88.0	112.1	148.5	210.9	311.7	427.1	500.9
102.5°	40.7	49.6	59.9	72.5	87.8	110.4	144.1	198.9	289.7	403.6	497.2
105°	48.9	56.7	65.6	76.4	89.6	109.4	139.7	186.2	261.5	364.0	467.6
107.5°	56.3	63.1	70.9	80.6	92.4	110.7	138.1	178.2	240.6	328.3	422.7
110°	61.6	67.8	74.6	83.4	94.2	111.8	138.2	174.8	230.9	307.9	394.9



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	67.5	72.8	78.6	86.5	96.4	113.0	137.9	172.3	222.5	291.6	369.1
115°	74.6	79.5	84.8	91.6	100.7	116.5	139.5	170.0	214.2	272.9	337.3
117.5°	82.9	86.5	90.3	95.5	104.0	118.1	140.3	168.1	206.5	257.5	314.1
120°	87.8	90.2	93.2	98.0	105.8	119.5	140.9	167.6	202.6	249.4	301.2
122.5°	92.8	94.5	97.0	101.3	108.1	121.8	142.5	167.4	199.9	242.4	289.7
125°	98.8	99.4	101.4	105.1	111.4	124.6	144.5	167.4	195.7	232.2	273.9
127.5°	104.3	105.0	107.2	110.7	117.3	129.6	147.7	167.8	192.6	223.4	258.9
130°	107.7	108.5	111.2	114.9	121.6	133.3	150.1	168.3	190.8	217.4	249.8
132.5°	109.4	110.7	113.9	118.6	125.5	136.5	151.7	168.7	188.3	212.0	241.0
135°	113.9	114.9	118.2	122.9	129.7	140.1	153.5	168.0	184.5	203.9	228.7
137.5°	117.9	119.1	122.5	127.6	134.3	143.4	155.0	167.7	181.3	197.0	218.0
140°	119.9	121.5	124.9	130.2	136.9	145.6	156.1	166.9	179.2	192.7	211.2
142.5°	123.1	124.2	127.6	132.1	138.6	146.4	155.9	165.8	176.5	188.0	204.5
145°	128.2	128.9	131.6	136.3	141.7	149.2	157.9	166.8	176.2	186.2	199.2
147.5°	132.1	132.7	135.6	140.0	145.4	151.9	159.9	168.0	176.2	184.9	194.7
150°	135.5	135.9	138.6	142.9	147.5	153.5	161.2	168.2	176.2	183.9	192.2
152.5°	139.0	139.1	141.8	145.5	149.7	155.4	162.0	168.7	175.4	182.6	190.0
155°	144.2	144.2	146.2	149.6	153.3	157.9	163.5	168.9	174.6	180.2	186.8
157.5°	148.4	148.6	150.2	153.2	156.3	159.9	164.4	169.2	173.4	178.1	183.2
160°	151.6	151.6	152.9	155.5	157.9	161.2	165.2	169.2	172.9	176.5	180.9
162.5°	153.9	153.9	155.0	157.1	159.2	162.0	165.5	168.9	171.8	174.9	178.4
165°	157.5	157.2	157.9	159.6	160.9	163.2	165.9	168.2	170.2	172.6	175.2
167.5°	160.2	159.9	160.2	161.5	162.4	163.9	165.8	167.7	168.6	170.1	172.1
170°	161.8	161.2	161.6	162.5	163.2	163.9	165.5	166.8	167.6	168.5	170.2
172.5°	163.0	162.5	162.6	163.3	163.7	164.1	165.5	166.6	166.7	167.2	168.3
175°	164.2	163.9	163.5	164.2	164.2	164.6	165.2	165.9	165.5	165.5	166.2
177.5°	164.9	164.6	164.3	164.6	164.6	164.6	164.9	165.3	164.9	164.6	164.9
180°	164.6	164.6	164.6	164.6	164.6	164.6	164.6	164.6	164.6	164.6	164.6



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1177.6	1177.6	1177.6	1177.6	1177.6	1177.6	1177.6	1177.6
2.5°	1175.2	1177.0	1178.7	1179.6	1179.3	1179.1	1178.9	1178.6
5°	1173.2	1175.5	1177.8	1178.7	1178.5	1178.2	1177.9	1177.6
7.5°	1166.1	1169.0	1171.9	1173.1	1172.8	1172.4	1172.1	1171.8
10°	1159.0	1161.8	1164.7	1165.8	1165.3	1164.7	1164.1	1163.6
12.5°	1149.2	1151.9	1154.5	1155.6	1155.0	1154.4	1153.9	1153.3
15°	1130.8	1133.6	1136.4	1137.7	1137.5	1137.2	1136.9	1136.6
17.5°	1106.5	1109.2	1111.7	1112.8	1112.4	1112.0	1111.6	1111.2
20°	1089.1	1091.7	1094.3	1095.7	1096.0	1096.3	1096.6	1096.8
22.5°	1070.0	1073.2	1076.5	1078.0	1077.8	1077.7	1077.5	1077.3
25°	1037.6	1041.2	1044.9	1046.8	1046.8	1046.8	1046.8	1046.8
27.5°	1003.6	1006.8	1010.0	1011.7	1012.0	1012.2	1012.5	1012.7
30°	980.5	983.9	987.3	989.1	989.1	989.1	989.1	989.1
32.5°	955.4	958.9	962.6	964.8	965.4	966.1	966.9	967.5
35°	918.0	922.4	926.6	929.3	930.5	931.6	932.7	933.9
37.5°	879.5	884.3	889.2	892.0	893.0	893.8	894.8	895.7
40°	853.8	858.7	863.5	866.5	867.6	868.7	869.9	871.0
42.5°	827.0	832.3	837.6	841.0	842.6	844.2	845.8	847.4
45°	786.9	792.4	797.8	801.6	803.9	806.2	808.5	810.8
47.5°	746.5	752.6	758.7	762.6	764.4	766.2	767.9	769.7
50°	718.7	725.2	731.8	736.0	738.1	740.1	742.1	744.0
52.5°	690.4	697.2	704.0	708.6	711.1	713.5	716.0	718.4
55°	647.8	655.5	663.3	668.2	670.5	672.8	675.0	677.3
57.5°	604.4	612.1	619.8	625.1	627.7	630.4	633.1	635.7
60°	574.0	582.0	589.9	595.5	598.7	601.8	604.9	608.0
62.5°	545.3	553.3	561.2	566.7	569.6	572.5	575.4	578.3
65°	499.5	508.0	516.5	522.3	525.1	527.9	530.8	533.7
67.5°	453.8	463.2	472.5	478.4	480.8	483.2	485.6	488.0
70°	423.6	432.7	441.9	447.9	450.7	453.6	456.4	459.3
72.5°	393.3	402.7	412.0	418.1	420.9	423.8	426.7	429.5
75°	347.2	356.7	366.0	372.5	375.9	379.3	382.7	386.2
77.5°	304.2	314.1	324.0	330.3	332.8	335.5	338.1	340.7
80°	276.0	285.7	295.3	301.6	304.4	307.3	310.2	313.0
82.5°	250.3	260.0	269.7	276.0	278.8	281.6	284.5	287.4
85°	214.3	224.0	233.8	240.1	242.9	245.7	248.5	251.5
87.5°	184.5	194.3	204.0	210.4	213.2	216.1	219.0	221.8
90°	172.7	182.7	192.7	199.6	202.2	205.4	208.6	211.0
92.5°	183.7	187.4	194.3	198.6	200.6	202.2	205.2	207.2
95°	264.6	234.8	225.9	219.8	216.3	216.2	216.7	218.2
97.5°	433.7	382.7	348.2	314.1	292.3	280.1	274.0	274.0
100°	520.8	502.1	471.5	429.7	398.9	377.4	367.3	370.5
102.5°	545.4	552.6	537.9	513.4	490.0	473.6	465.6	460.8
105°	545.2	586.4	600.8	597.4	584.7	574.6	566.5	567.3
107.5°	509.3	571.0	607.8	624.7	627.5	625.8	624.7	624.2
110°	478.6	547.3	596.7	624.9	636.5	641.4	643.0	644.6





TEST NUMBER: P332005-830

CATALOG NUMBER: S123DIP-S1000D365U830-4F0-1E-UDD-D4

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	447.2	517.1	571.3	606.1	625.7	636.4	641.5	644.1
115°	405.8	470.5	526.3	567.2	594.5	611.4	620.4	624.3
117.5°	372.9	429.7	480.4	521.8	550.1	569.1	580.9	585.4
120°	354.8	406.3	452.8	490.8	519.1	539.7	549.7	553.6
122.5°	339.3	386.3	429.7	465.1	490.5	509.3	520.1	524.6
125°	317.8	360.1	398.0	428.7	452.0	468.6	479.0	483.3
127.5°	297.9	336.0	370.5	398.5	419.4	433.9	443.4	447.4
130°	285.2	320.6	353.0	379.2	398.6	412.3	420.9	425.4
132.5°	273.0	305.8	336.0	361.2	379.7	393.6	401.7	405.6
135°	256.2	284.9	311.7	333.9	351.8	363.2	370.5	374.3
137.5°	240.5	264.4	287.6	307.0	322.2	333.7	340.2	343.2
140°	231.2	252.4	272.7	289.9	304.0	314.7	321.5	322.5
142.5°	221.6	240.1	257.7	272.8	285.0	294.7	301.0	302.0
145°	212.1	225.4	238.3	249.7	259.1	267.2	271.1	272.9
147.5°	204.4	213.9	223.1	230.8	238.2	243.9	247.5	248.7
150°	199.8	207.5	214.5	221.1	226.7	230.9	233.5	234.0
152.5°	196.9	203.5	209.7	215.0	219.0	222.5	223.9	224.0
155°	192.6	197.8	202.8	206.8	209.8	212.5	213.2	213.5
157.5°	187.8	192.3	196.1	199.3	201.9	203.9	204.4	204.3
160°	185.2	188.9	192.2	194.5	196.8	198.9	198.9	198.5
162.5°	182.0	185.1	188.2	190.3	191.8	193.5	193.5	193.2
165°	177.9	179.8	182.2	183.9	185.2	186.5	186.2	186.2
167.5°	174.3	175.8	177.1	178.3	178.9	179.8	179.6	179.6
170°	171.8	172.9	174.2	174.8	175.2	175.9	175.5	175.5
172.5°	169.8	170.5	171.5	171.9	172.0	172.7	172.1	171.8
175°	166.8	167.2	167.9	167.9	167.9	168.2	167.9	167.6
177.5°	165.0	165.3	165.6	165.6	165.3	165.6	165.0	165.0
180°	164.6	164.6	164.6	164.6	164.6	164.6	164.6	164.6

(END OF REPORT)