

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: P331906-830

Luminaire Tested: **S123DIP-S340D1195U830-4F0-1E-UDD-D4**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331906-830  
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-S340D1195U830-4F0-1E-UDD-D4  
Description: DEFINE 3 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 340 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 1195 LUMENS PER FOOT, BATWING OPTIC  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5429.0 lumens  
Efficiency: N/A  
Efficacy: 128.7 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-Indirect

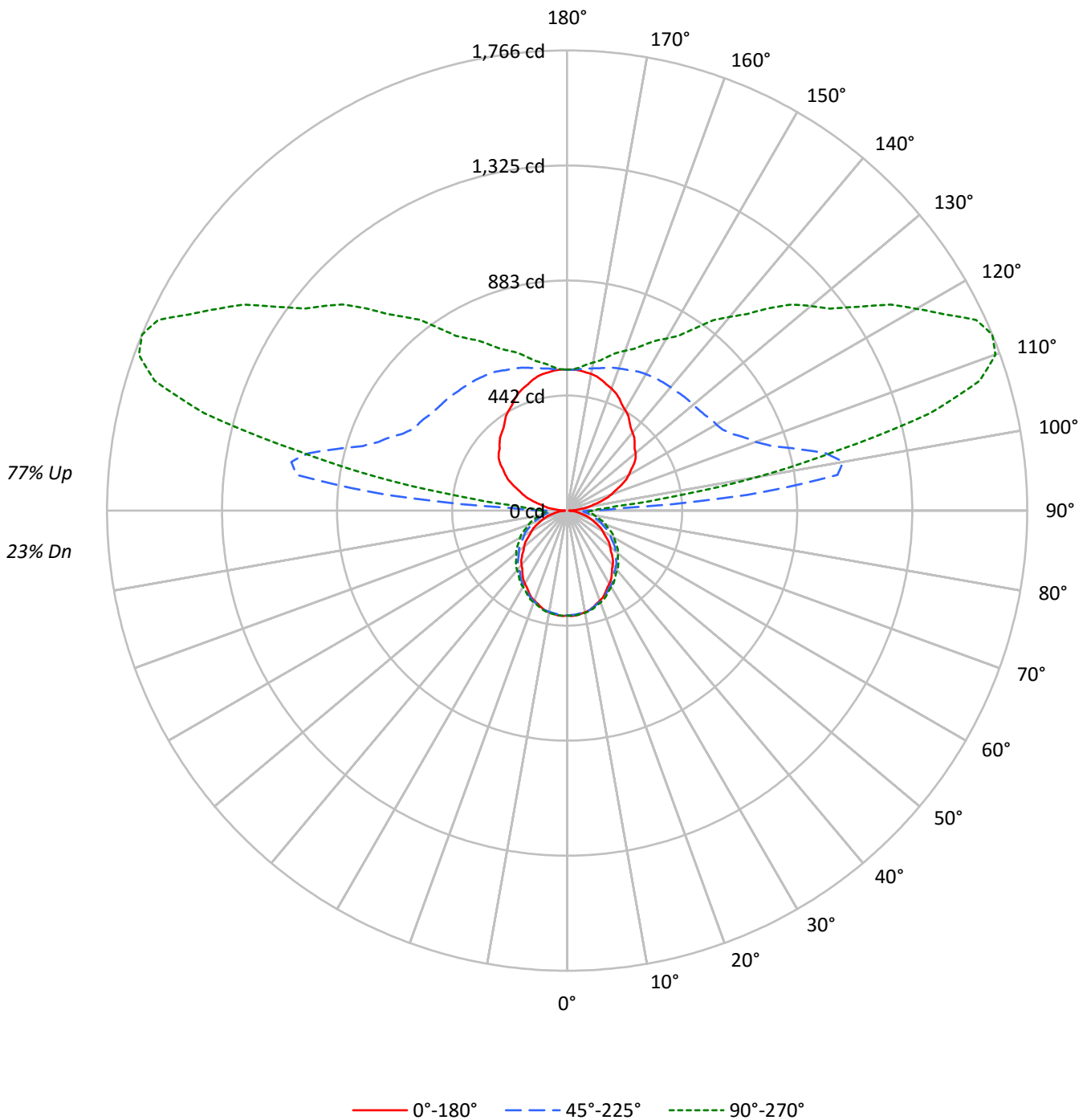
Input Watts (W): 42.2  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P331906-830

CATALOG NUMBER: S123DIP-S340D1195U830-4F0-1E-UDD-D4

### Luminous Intensity Polar Plot





TEST NUMBER: P331906-830

CATALOG NUMBER: S123DIP-S340D1195U830-4F0-1E-UDD-D4

**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	101	101	101	101	89	89	89	89	68	68	68	49	49	49	31	31	31	23
1	91	87	83	79	81	77	74	71	59	57	55	42	41	40	27	26	25	18
2	83	76	69	64	73	67	62	58	51	48	45	37	35	33	23	22	21	15
3	75	66	59	53	67	59	53	48	45	41	37	32	30	27	20	19	18	12
4	69	58	51	45	61	52	45	40	40	35	32	29	26	23	18	16	15	11
5	63	52	44	38	56	46	39	34	35	31	27	26	22	20	16	14	13	9
6	58	46	38	33	51	41	34	30	32	27	23	23	20	17	15	13	11	8
7	53	41	34	28	47	37	30	26	29	24	20	21	18	15	13	11	10	7
8	49	37	30	25	44	33	27	22	26	21	18	19	16	13	12	10	9	6
9	46	34	27	22	40	30	24	20	24	19	16	17	14	12	11	9	8	6
10	43	31	24	19	38	28	22	18	22	17	14	16	13	11	10	9	7	5

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

	0°	45°	90°
0°	4339	4339	4339
5°	4353	4230	4232
10°	4315	4133	4112
15°	4259	4022	3980
20°	4179	3896	3836
25°	4080	3751	3684
30°	3980	3620	3529
35°	3867	3481	3406
40°	3760	3356	3274
45°	3641	3235	3169
50°	3525	3116	3054
55°	3393	2993	2948
60°	3266	2869	2842
65°	3138	2736	2714
70°	2941	2586	2582
75°	2693	2416	2450
80°	2412	2249	2299
85°	2145	2133	2211



TEST NUMBER: P331906-830

CATALOG NUMBER: S123DIP-S340D1195U830-4F0-1E-UDD-D4

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	38.2	0.7
10°-20°	108.9	2.0
20°-30°	163.0	3.0
30°-40°	194.6	3.6
40°-50°	203.6	3.8
50°-60°	191.1	3.5
60°-70°	159.6	2.9
70°-80°	114.2	2.1
80°-90°	72.3	1.3
90°-100°	343.8	6.3
100°-110°	883.9	16.3
110°-120°	859.6	15.8
120°-130°	680.9	12.5
130°-140°	532.8	9.8
140°-150°	394.8	7.3
150°-160°	274.4	5.1
160°-170°	161.2	3.0
170°-180°	52.4	1.0
0°-30°	310.1	5.7
0°-40°	504.7	9.3
0°-60°	899.4	16.6
0°-90°	1245.4	22.9
90°-120°	2087.2	38.4
90°-150°	3695.6	68.1
90°-180°	4184.0	77.1
0°-180°	5429.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	403	403	403	403	403	
5°	404	403	400	403	403	38
15°	384	386	385	389	389	108
25°	347	351	353	358	358	160
35°	299	306	311	318	320	187
45°	244	255	266	274	278	188
55°	186	201	216	228	232	167
65°	129	146	165	178	183	127
75°	70	91	112	126	132	75
85°	22	44	67	81	86	23
90°	8	40	77	95	101	6
95°	42	143	693	246	188	44
105°	130	202	913	1584	1442	139
115°	227	288	697	1510	1732	224
125°	313	371	643	1162	1362	278
135°	367	437	625	951	1098	283
145°	418	478	612	773	852	262
155°	474	511	592	673	702	218
165°	518	533	567	602	612	146
175°	540	540	544	552	551	51
180°	541	541	541	541	541	



TEST NUMBER: P331906-830

CATALOG NUMBER: S123DIP-S340D1195U830-4F0-1E-UDD-D4

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	403.1	403.1	403.1	403.1	403.1	403.1	403.1	403.1	403.1	403.1	403.1
2.5°	404.9	404.7	404.4	404.3	404.0	403.6	402.9	402.3	401.7	401.1	401.7
5°	403.6	403.4	403.2	403.0	402.8	402.5	401.8	401.2	400.7	400.1	400.9
7.5°	399.6	399.7	399.7	399.7	399.8	399.5	399.0	398.4	397.8	397.3	398.2
10°	396.2	396.3	396.5	396.7	396.9	396.8	396.2	395.8	395.3	394.8	395.8
12.5°	391.9	392.2	392.5	392.8	393.0	392.9	392.7	392.3	392.0	391.6	392.6
15°	384.3	384.6	384.8	385.1	385.4	385.6	385.4	385.3	385.2	385.1	386.2
17.5°	374.7	375.2	375.8	376.4	376.9	377.2	377.2	377.1	377.1	377.1	378.0
20°	367.6	368.2	368.7	369.4	369.9	370.3	370.5	370.7	370.9	371.1	372.0
22.5°	360.2	360.8	361.4	361.9	362.6	363.0	363.3	363.5	363.8	364.1	365.2
25°	346.9	347.9	348.9	349.9	350.8	351.5	351.8	352.0	352.3	352.7	353.9
27.5°	333.6	334.7	335.8	337.0	338.1	338.9	339.5	340.2	340.8	341.4	342.5
30°	324.1	325.4	326.7	327.9	329.2	330.2	331.0	331.8	332.5	333.4	334.5
32.5°	313.6	315.0	316.4	317.8	319.2	320.5	321.5	322.5	323.6	324.5	325.8
35°	298.6	300.2	301.8	303.3	304.9	306.3	307.6	308.9	310.1	311.4	312.8
37.5°	282.9	284.6	286.3	288.1	289.8	291.5	293.0	294.6	296.2	297.7	299.4
40°	272.3	274.1	275.8	277.6	279.3	281.2	283.1	285.1	287.0	289.0	290.7
42.5°	260.7	262.9	264.9	267.1	269.3	271.4	273.4	275.4	277.5	279.5	281.3
45°	244.2	246.6	248.8	251.2	253.5	255.9	258.4	260.8	263.3	265.7	267.6
47.5°	226.9	229.5	232.1	234.9	237.5	240.3	243.0	245.8	248.5	251.4	253.4
50°	215.7	218.4	221.1	223.9	226.6	229.4	232.4	235.5	238.6	241.6	243.8
52.5°	203.7	206.6	209.4	212.4	215.3	218.4	221.7	225.1	228.4	231.7	234.0
55°	186.2	189.5	192.7	195.9	199.1	202.5	205.9	209.5	213.0	216.5	219.1
57.5°	169.2	172.5	175.9	179.3	182.6	186.2	190.0	193.9	197.7	201.6	204.2
60°	157.2	160.7	164.3	167.8	171.3	175.0	179.1	183.0	187.0	191.1	193.8
62.5°	146.0	149.6	153.2	156.7	160.3	164.3	168.5	172.8	177.0	181.3	183.9
65°	128.7	132.5	136.3	140.1	143.9	148.0	152.2	156.6	160.8	165.1	168.1
67.5°	111.1	115.2	119.2	123.2	127.2	131.5	135.8	140.3	144.6	149.0	152.1
70°	98.8	103.0	107.2	111.4	115.6	120.1	124.7	129.4	134.1	138.7	141.9
72.5°	87.6	91.8	96.0	100.2	104.3	108.9	113.7	118.6	123.4	128.3	131.5
75°	69.8	74.5	79.0	83.6	88.2	92.9	97.8	102.6	107.5	112.4	115.6
77.5°	54.4	59.0	63.6	68.2	72.9	77.7	82.6	87.5	92.4	97.4	100.8
80°	43.5	48.3	53.1	57.9	62.6	67.6	72.6	77.7	82.8	87.8	91.1
82.5°	34.0	38.8	43.7	48.5	53.4	58.4	63.6	68.7	73.9	79.1	82.4
85°	21.5	26.4	31.3	36.2	41.0	46.1	51.3	56.4	61.5	66.7	70.0
87.5°	12.2	17.4	22.7	28.3	33.6	38.9	44.5	50.1	55.8	61.5	64.6
90°	7.9	14.9	21.9	29.9	36.9	43.9	52.2	60.5	68.7	77.0	79.3
92.5°	18.9	29.8	43.4	56.2	69.7	90.5	124.1	176.1	227.2	215.3	177.1
95°	42.0	49.2	65.0	87.5	119.7	166.7	264.6	432.5	616.9	692.9	573.3
97.5°	67.9	72.4	85.2	104.8	136.3	186.5	280.0	468.5	772.5	1046.7	1119.9
100°	85.0	89.2	100.0	118.5	147.9	194.4	275.5	442.1	734.6	1075.3	1293.8
102.5°	103.0	107.8	117.4	134.7	161.2	204.0	277.1	419.1	680.0	1016.2	1300.4
105°	130.5	136.2	145.1	160.6	183.7	220.9	284.3	401.2	612.5	913.4	1230.4
107.5°	159.4	164.7	173.0	187.9	209.3	243.9	299.8	397.5	568.4	822.3	1110.2
110°	180.0	185.1	192.3	206.1	226.5	260.0	313.2	400.3	550.9	770.6	1034.8



TEST NUMBER: P331906-830

CATALOG NUMBER: S123DIP-S340D1195U830-4F0-1E-UDD-D4

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	199.3	204.1	210.9	224.4	244.5	276.9	326.4	407.3	540.3	735.2	968.7
115°	226.7	232.2	240.0	252.1	271.9	303.8	348.9	419.2	534.4	696.7	888.5
117.5°	254.4	260.1	266.4	277.2	298.7	328.1	372.6	435.5	533.6	672.7	838.8
120°	273.3	277.1	283.0	294.5	315.8	345.1	387.7	447.9	535.4	661.3	812.5
122.5°	290.0	293.5	299.3	311.3	331.5	362.3	403.9	459.6	539.9	653.4	790.4
125°	313.4	315.6	322.2	334.2	355.1	386.0	427.2	478.2	546.8	642.6	761.9
127.5°	331.6	334.8	342.8	355.0	377.9	408.6	447.9	493.6	555.1	636.0	736.3
130°	343.0	346.2	355.9	369.0	391.9	422.4	460.4	504.0	560.7	631.7	722.3
132.5°	351.4	355.5	366.3	382.0	405.0	434.4	471.3	513.6	564.6	629.1	709.0
135°	366.6	370.9	382.9	399.2	422.1	452.1	487.2	525.5	570.3	625.1	691.4
137.5°	381.0	385.5	397.3	414.7	437.4	465.1	498.3	534.4	574.0	620.6	676.2
140°	390.3	395.8	406.7	424.2	446.1	473.6	505.7	538.9	576.4	618.3	666.8
142.5°	400.8	405.3	417.1	432.7	454.6	480.2	511.1	543.2	577.9	615.1	658.3
145°	417.6	420.8	430.6	447.0	465.4	490.6	519.1	548.7	579.3	612.2	648.0
147.5°	434.3	436.3	445.9	460.1	478.2	499.5	525.7	552.1	579.3	608.0	638.2
150°	445.7	446.8	455.5	469.8	485.1	504.8	530.0	553.0	579.3	604.5	631.9
152.5°	457.1	457.3	466.1	478.5	492.1	511.0	532.6	554.8	576.6	600.1	624.9
155°	474.2	474.2	480.8	491.7	503.7	519.1	537.7	555.3	573.8	592.5	614.3
157.5°	487.8	488.6	493.9	503.5	513.8	525.7	540.5	556.3	570.1	585.7	602.5
160°	498.2	498.2	502.7	511.4	519.1	530.0	543.2	556.3	568.4	580.4	594.7
162.5°	506.1	506.1	509.6	516.7	523.5	532.6	544.0	555.4	564.9	575.1	586.7
165°	518.0	516.9	519.1	524.5	529.0	536.6	545.4	553.0	559.6	567.2	576.0
167.5°	527.0	525.7	526.7	530.9	534.0	538.8	545.2	551.3	554.3	559.4	565.7
170°	532.3	530.0	531.1	534.4	536.6	538.8	544.2	548.7	550.8	554.1	559.6
172.5°	535.7	534.4	534.6	537.1	538.4	539.7	544.2	547.8	548.2	549.7	553.5
175°	539.9	538.8	537.7	539.9	539.9	541.0	543.2	545.4	544.2	544.2	546.5
177.5°	541.9	541.0	540.1	541.0	541.0	541.0	541.9	543.6	541.9	541.0	541.9
180°	541.0	541.0	541.0	541.0	541.0	541.0	541.0	541.0	541.0	541.0	541.0



TEST NUMBER: P331906-830

CATALOG NUMBER: S123DIP-S340D1195U830-4F0-1E-UDD-D4

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	403.1	403.1	403.1	403.1	403.1	403.1	403.1	403.1
2.5°	402.3	402.9	403.6	403.8	403.8	403.7	403.6	403.5
5°	401.6	402.5	403.2	403.6	403.5	403.3	403.2	403.1
7.5°	399.3	400.2	401.1	401.6	401.5	401.3	401.2	401.1
10°	396.8	397.8	398.7	399.1	398.9	398.7	398.5	398.3
12.5°	393.4	394.4	395.2	395.6	395.4	395.2	395.0	394.8
15°	387.1	388.0	389.1	389.5	389.4	389.3	389.2	389.1
17.5°	378.8	379.8	380.6	381.0	380.8	380.7	380.6	380.4
20°	372.9	373.7	374.7	375.1	375.2	375.3	375.4	375.5
22.5°	366.3	367.4	368.5	369.1	369.0	368.9	368.9	368.8
25°	355.2	356.5	357.7	358.4	358.4	358.4	358.4	358.4
27.5°	343.6	344.7	345.8	346.4	346.5	346.6	346.6	346.7
30°	335.6	336.9	338.0	338.6	338.6	338.6	338.6	338.6
32.5°	327.1	328.3	329.5	330.3	330.5	330.7	331.0	331.2
35°	314.3	315.8	317.3	318.2	318.6	319.0	319.3	319.7
37.5°	301.0	302.7	304.4	305.4	305.7	306.0	306.3	306.6
40°	292.3	294.0	295.6	296.6	297.0	297.5	297.8	298.2
42.5°	283.1	284.9	286.7	287.9	288.5	289.0	289.5	290.1
45°	269.4	271.3	273.1	274.5	275.2	276.0	276.8	277.6
47.5°	255.5	257.7	259.8	261.1	261.6	262.3	262.9	263.5
50°	246.0	248.3	250.5	252.0	252.7	253.4	254.0	254.8
52.5°	236.4	238.7	241.0	242.6	243.5	244.3	245.1	245.9
55°	221.8	224.4	227.1	228.8	229.5	230.4	231.1	231.9
57.5°	206.9	209.5	212.2	214.0	214.9	215.8	216.8	217.6
60°	196.5	199.3	202.0	203.9	204.9	206.0	207.1	208.2
62.5°	186.6	189.4	192.1	194.0	195.0	196.0	197.0	198.0
65°	171.0	173.9	176.8	178.8	179.7	180.8	181.7	182.7
67.5°	155.3	158.5	161.7	163.8	164.6	165.4	166.3	167.0
70°	145.1	148.2	151.3	153.4	154.3	155.2	156.3	157.2
72.5°	134.6	137.8	141.0	143.2	144.1	145.1	146.1	147.0
75°	118.9	122.1	125.4	127.5	128.7	129.9	131.0	132.2
77.5°	104.2	107.5	110.9	113.0	114.0	114.9	115.7	116.7
80°	94.4	97.8	101.1	103.2	104.2	105.2	106.2	107.2
82.5°	85.7	89.0	92.4	94.4	95.5	96.4	97.4	98.4
85°	73.4	76.7	80.0	82.2	83.1	84.2	85.1	86.1
87.5°	68.1	71.6	75.1	77.8	78.5	79.6	80.9	81.6
90°	83.6	88.0	92.5	96.8	96.7	98.8	100.9	100.7
92.5°	145.5	129.7	124.4	120.7	119.7	117.3	119.3	118.2
95°	443.7	319.7	264.8	227.3	207.5	198.6	191.9	188.5
97.5°	1028.9	836.2	697.9	568.8	489.0	440.6	412.1	403.6
100°	1335.0	1249.2	1123.8	970.3	860.5	781.7	739.9	742.0
102.5°	1435.2	1435.1	1363.2	1266.5	1181.4	1119.1	1084.4	1060.2
105°	1462.0	1574.2	1597.8	1571.1	1521.6	1480.9	1446.7	1442.2
107.5°	1372.4	1552.8	1651.4	1692.1	1693.8	1680.7	1669.7	1660.6
110°	1288.2	1492.2	1632.7	1711.0	1742.5	1752.0	1750.6	1749.2





TEST NUMBER: P331906-830

CATALOG NUMBER: S123DIP-S340D1195U830-4F0-1E-UDD-D4

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	1204.4	1412.8	1569.8	1670.1	1727.0	1755.0	1764.2	1765.5
115°	1093.4	1286.4	1449.7	1570.7	1653.5	1702.5	1725.1	1731.5
117.5°	1012.2	1179.0	1325.9	1448.5	1534.9	1590.9	1623.2	1631.4
120°	969.1	1119.2	1252.8	1364.9	1452.1	1514.1	1541.1	1548.3
122.5°	934.7	1070.7	1194.7	1298.8	1376.4	1432.3	1461.9	1470.8
125°	888.7	1010.1	1117.4	1206.4	1277.1	1326.0	1354.1	1362.4
127.5°	848.2	956.6	1053.4	1134.3	1197.5	1239.3	1264.7	1272.3
130°	822.7	923.0	1013.6	1089.3	1147.9	1187.9	1211.5	1220.9
132.5°	798.8	891.3	975.6	1047.8	1103.0	1143.1	1164.1	1170.9
135°	766.6	846.1	919.1	982.6	1036.7	1070.1	1090.2	1098.4
137.5°	737.1	802.4	865.3	920.4	966.0	999.8	1016.9	1022.4
140°	719.8	777.1	831.1	879.2	921.2	952.4	970.4	969.9
142.5°	703.1	752.4	799.3	841.1	877.1	904.7	921.1	920.4
145°	683.8	720.8	756.6	788.9	816.6	840.1	849.2	851.8
147.5°	668.1	696.9	725.5	748.3	769.5	785.3	794.0	795.2
150°	657.0	682.2	705.2	726.1	742.7	755.0	761.8	762.0
152.5°	647.4	669.1	689.5	706.8	719.7	730.9	734.9	735.0
155°	632.9	650.4	666.9	680.0	689.9	698.7	700.9	701.9
157.5°	617.6	632.4	645.0	655.3	663.8	670.4	672.1	671.9
160°	608.9	620.9	631.9	639.5	647.2	653.7	653.7	652.7
162.5°	598.3	608.7	618.7	625.5	630.6	636.2	636.2	635.2
165°	584.8	591.4	599.0	604.5	608.9	613.2	612.2	612.2
167.5°	573.0	578.0	582.4	586.4	588.2	591.4	590.2	590.2
170°	565.1	568.4	572.7	575.0	576.0	578.2	577.1	577.1
172.5°	558.1	560.4	564.0	565.2	565.5	567.7	565.7	564.9
175°	548.7	549.7	552.0	552.0	552.0	553.0	552.0	550.8
177.5°	542.7	543.6	544.5	544.5	543.6	544.5	542.7	542.7
180°	541.0	541.0	541.0	541.0	541.0	541.0	541.0	541.0

(END OF REPORT)