

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: P331897-935

Luminaire Tested: **S123DIP-S340D1025U935-4F0-1E-UDD-D4**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331897-935  
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-S340D1025U935-4F0-1E-UDD-D4  
Description: DEFINE 3 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 340 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 1025 LUMENS PER FOOT, BATWING OPTIC  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4435.0 lumens  
Efficiency: N/A  
Efficacy: 118.9 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-Indirect

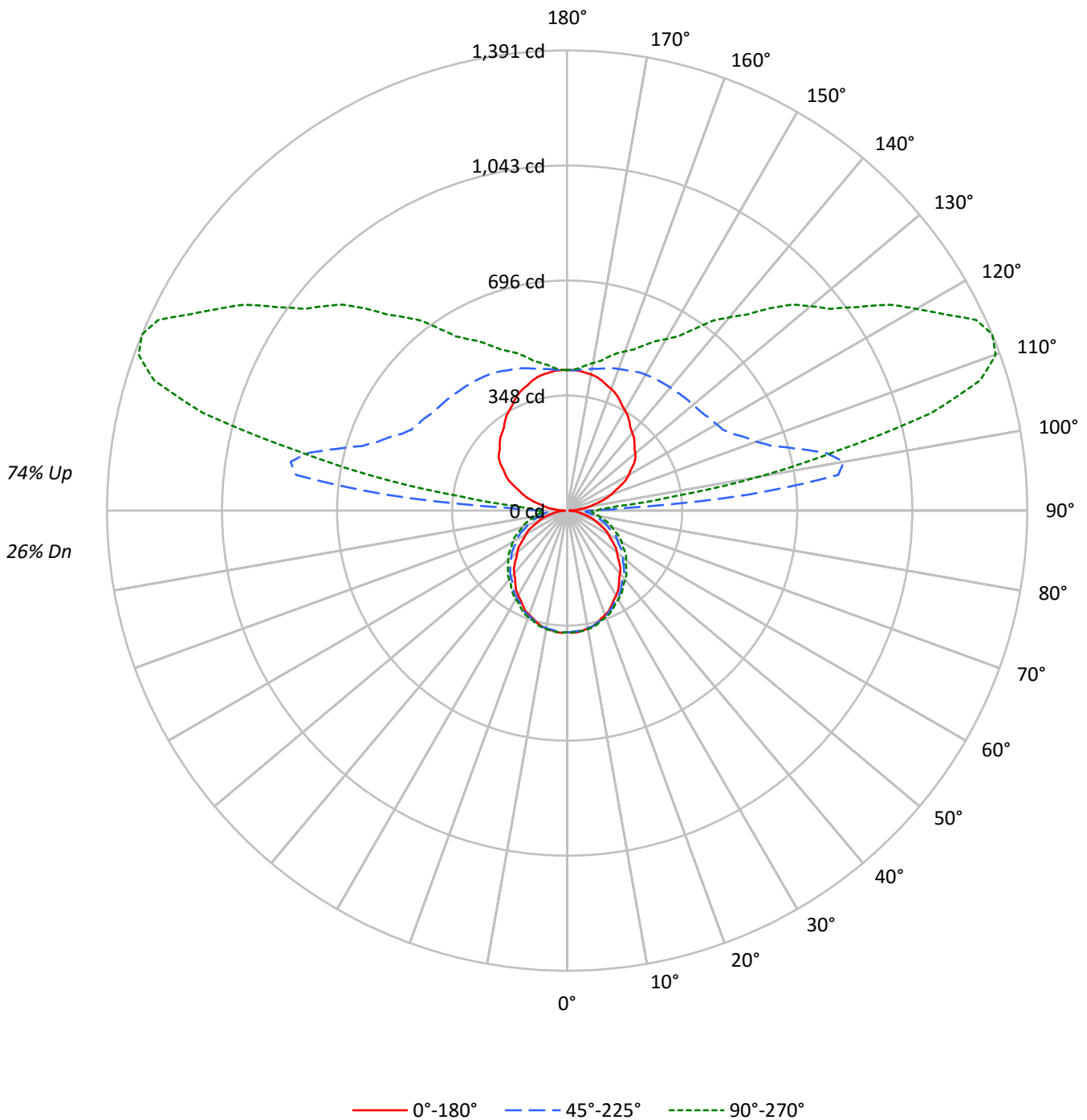
Input Watts (W): 37.3  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P331897-935

CATALOG NUMBER: S123DIP-S340D1025U935-4F0-1E-UDD-D4

### 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	101	101	101	101	90	90	90	90	70	70	70	51	51	51	34	34	34	26
1	92	87	83	80	82	78	75	72	60	58	56	44	42	41	29	28	27	20
2	83	76	70	65	74	68	63	58	52	49	46	38	36	34	25	24	23	17
3	76	66	59	54	67	59	53	48	46	42	38	34	31	28	22	20	19	14
4	69	59	51	45	61	52	46	41	41	36	32	30	27	24	20	18	16	12
5	63	52	44	38	56	47	40	35	36	31	28	27	23	21	18	16	14	10
6	58	46	39	33	52	42	35	30	32	27	24	24	21	18	16	14	12	9
7	54	42	34	29	48	37	31	26	29	24	21	22	18	16	14	12	11	8
8	50	38	30	25	44	34	27	23	27	22	18	20	16	14	13	11	10	7
9	46	34	27	22	41	31	24	20	24	19	16	18	15	12	12	10	9	6
10	43	31	24	20	38	28	22	18	22	18	14	17	13	11	11	9	8	6

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

	0°	45°	90°
0°	3963	3963	3963
5°	3977	3865	3866
10°	3941	3776	3757
15°	3890	3674	3636
20°	3818	3559	3504
25°	3728	3427	3365
30°	3637	3307	3224
35°	3533	3181	3112
40°	3435	3065	2991
45°	3327	2955	2895
50°	3219	2846	2789
55°	3100	2734	2693
60°	2984	2620	2596
65°	2865	2499	2479
70°	2685	2362	2359
75°	2462	2208	2239
80°	2201	2054	2100
85°	1955	1950	2018



TEST NUMBER: P331897-935

CATALOG NUMBER: S123DIP-S340D1025U935-4F0-1E-UDD-D4

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	34.9	0.8
10°-20°	99.5	2.2
20°-30°	148.9	3.4
30°-40°	177.8	4.0
40°-50°	186.0	4.2
50°-60°	174.5	3.9
60°-70°	145.8	3.3
70°-80°	104.3	2.4
80°-90°	65.5	1.5
90°-100°	275.3	6.2
100°-110°	697.7	15.7
110°-120°	677.3	15.3
120°-130°	535.9	12.1
130°-140°	418.8	9.4
140°-150°	310.0	7.0
150°-160°	215.3	4.9
160°-170°	126.5	2.9
170°-180°	41.2	0.9
0°-30°	283.3	6.4
0°-40°	461.0	10.4
0°-60°	821.6	18.5
0°-90°	1137.1	25.6
90°-120°	1650.3	37.2
90°-150°	2915.0	65.7
90°-180°	3298.0	74.4
0°-180°	4435.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	368	368	368	368	368	
5°	369	368	366	368	368	35
15°	351	352	352	356	355	99
25°	317	321	322	327	327	146
35°	273	279	284	290	292	171
45°	223	233	243	250	254	172
55°	170	183	198	208	212	152
65°	118	133	151	162	167	116
75°	64	83	103	116	121	68
85°	20	40	61	74	79	21
90°	7	35	67	83	88	6
95°	34	115	549	200	156	35
105°	103	161	721	1249	1138	109
115°	178	227	550	1189	1364	176
125°	246	291	506	915	1072	218
135°	288	343	491	748	864	222
145°	328	375	480	607	669	205
155°	372	401	465	529	551	171
165°	406	418	445	472	480	115
175°	424	424	427	433	432	40
180°	425	425	425	425	425	



TEST NUMBER: P331897-935

CATALOG NUMBER: S123DIP-S340D1025U935-4F0-1E-UDD-D4

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	368.2	368.2	368.2	368.2	368.2	368.2	368.2	368.2	368.2	368.2	368.2
2.5°	369.9	369.7	369.5	369.3	369.0	368.7	368.1	367.5	367.0	366.4	367.0
5°	368.7	368.5	368.3	368.2	368.0	367.6	367.0	366.5	366.0	365.5	366.2
7.5°	365.1	365.2	365.2	365.2	365.2	365.0	364.5	363.9	363.4	362.9	363.8
10°	361.9	362.1	362.2	362.4	362.6	362.5	362.0	361.5	361.1	360.7	361.5
12.5°	358.0	358.3	358.5	358.8	359.0	359.0	358.7	358.3	358.1	357.7	358.6
15°	351.0	351.3	351.5	351.8	352.1	352.2	352.1	352.0	351.9	351.8	352.8
17.5°	342.2	342.8	343.3	343.8	344.3	344.6	344.6	344.5	344.5	344.5	345.3
20°	335.8	336.3	336.8	337.4	337.9	338.3	338.5	338.6	338.8	339.0	339.8
22.5°	329.1	329.6	330.1	330.6	331.2	331.6	331.8	332.1	332.3	332.6	333.6
25°	316.9	317.8	318.7	319.6	320.5	321.1	321.3	321.6	321.8	322.2	323.3
27.5°	304.7	305.7	306.8	307.8	308.8	309.6	310.1	310.7	311.3	311.9	312.9
30°	296.1	297.2	298.4	299.5	300.7	301.6	302.4	303.1	303.8	304.5	305.6
32.5°	286.5	287.7	289.0	290.3	291.6	292.7	293.7	294.6	295.6	296.4	297.6
35°	272.8	274.2	275.7	277.1	278.5	279.8	280.9	282.1	283.3	284.5	285.8
37.5°	258.4	259.9	261.6	263.2	264.8	266.3	267.7	269.1	270.6	272.0	273.5
40°	248.7	250.4	251.9	253.6	255.1	256.8	258.6	260.5	262.2	264.0	265.5
42.5°	238.2	240.1	242.0	244.0	246.0	247.9	249.8	251.6	253.5	255.3	257.0
45°	223.1	225.2	227.3	229.5	231.6	233.8	236.0	238.2	240.5	242.7	244.4
47.5°	207.2	209.7	212.1	214.6	217.0	219.5	222.0	224.5	227.0	229.6	231.5
50°	197.0	199.5	202.0	204.5	207.0	209.6	212.3	215.2	217.9	220.7	222.7
52.5°	186.1	188.7	191.3	194.0	196.7	199.5	202.5	205.6	208.6	211.6	213.8
55°	170.1	173.1	176.0	178.9	181.8	184.9	188.1	191.4	194.6	197.8	200.2
57.5°	154.5	157.6	160.7	163.8	166.8	170.1	173.6	177.1	180.6	184.2	186.6
60°	143.6	146.8	150.1	153.3	156.4	159.9	163.6	167.2	170.8	174.5	177.0
62.5°	133.4	136.6	139.9	143.2	146.5	150.1	153.9	157.8	161.7	165.6	168.0
65°	117.5	121.1	124.5	127.9	131.5	135.2	139.1	143.0	146.9	150.8	153.5
67.5°	101.5	105.2	108.9	112.5	116.2	120.1	124.1	128.1	132.1	136.1	139.0
70°	90.2	94.1	97.9	101.8	105.6	109.7	113.9	118.2	122.5	126.7	129.7
72.5°	80.0	83.9	87.6	91.5	95.3	99.4	103.8	108.3	112.7	117.2	120.1
75°	63.8	68.0	72.2	76.4	80.6	84.9	89.4	93.8	98.2	102.7	105.6
77.5°	49.7	53.9	58.1	62.3	66.6	70.9	75.4	79.9	84.4	88.9	92.0
80°	39.7	44.1	48.5	52.9	57.2	61.7	66.3	70.9	75.6	80.2	83.3
82.5°	31.1	35.5	40.0	44.3	48.8	53.4	58.1	62.8	67.5	72.2	75.3
85°	19.6	24.1	28.6	33.1	37.5	42.1	46.8	51.5	56.2	61.0	64.0
87.5°	11.0	15.8	20.6	25.6	30.3	35.1	40.2	45.3	50.4	55.4	58.3
90°	7.0	13.0	19.1	26.1	32.1	38.3	45.5	52.6	59.7	66.8	69.0
92.5°	15.6	24.6	35.8	46.5	57.6	74.6	101.5	142.9	183.7	175.0	145.4
95°	33.7	39.7	52.6	70.7	96.5	134.0	211.4	343.8	489.1	549.3	455.9
97.5°	53.8	57.8	68.3	84.2	109.3	149.2	223.2	371.8	610.9	826.6	884.5
100°	67.2	70.9	79.8	94.7	118.1	155.2	219.4	350.7	580.8	848.8	1020.7
102.5°	81.4	85.4	93.3	107.3	128.4	162.5	220.4	332.4	537.7	802.2	1025.5
105°	102.9	107.6	114.9	127.3	145.9	175.5	225.8	318.1	484.3	721.1	970.3
107.5°	125.4	129.8	136.6	148.6	165.7	193.2	237.5	314.8	449.4	649.2	875.6
110°	141.6	145.9	151.7	162.8	179.0	205.6	247.9	316.8	435.5	608.4	816.1



TEST NUMBER: P331897-935

CATALOG NUMBER: S123DIP-S340D1025U935-4F0-1E-UDD-D4

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	156.8	160.7	166.3	177.0	193.0	218.7	258.0	322.0	426.8	580.3	763.9
115°	178.2	182.7	188.9	198.5	214.3	239.6	275.5	331.1	422.0	549.8	700.6
117.5°	199.9	204.6	209.5	218.1	235.1	258.4	293.7	343.5	420.9	530.5	661.2
120°	214.7	217.7	222.5	231.5	248.3	271.5	305.4	353.0	422.1	521.3	640.2
122.5°	227.8	230.6	235.1	244.7	260.5	284.9	318.0	362.1	425.5	514.9	622.8
125°	246.2	247.9	253.0	262.4	278.8	303.3	336.0	376.3	430.5	506.2	599.9
127.5°	260.4	262.9	269.1	278.7	296.7	320.9	352.1	388.2	436.8	500.7	579.6
130°	269.3	271.8	279.5	289.7	307.6	331.7	361.9	396.3	441.1	497.0	568.3
132.5°	275.9	279.1	287.6	299.9	318.0	341.1	370.2	403.6	443.9	494.7	557.7
135°	287.8	291.2	300.6	313.4	331.3	355.0	382.6	412.8	448.2	491.3	543.5
137.5°	299.1	302.6	311.9	325.5	343.4	365.1	391.2	419.7	450.8	487.4	531.3
140°	306.3	310.6	319.3	333.0	350.2	371.8	397.0	423.0	452.5	485.4	523.7
142.5°	314.6	318.1	327.4	339.7	356.8	376.9	401.1	426.3	453.6	482.8	516.9
145°	327.9	330.4	337.9	350.8	365.3	385.0	407.3	430.6	454.6	480.4	508.7
147.5°	340.9	342.4	350.0	361.1	375.2	392.1	412.5	433.3	454.6	477.2	500.9
150°	349.8	350.7	357.5	368.7	380.7	396.2	415.9	434.0	454.6	474.4	495.8
152.5°	358.7	358.9	365.8	375.6	386.2	401.1	418.0	435.4	452.5	471.0	490.4
155°	372.1	372.1	377.3	385.9	395.4	407.3	422.0	435.8	450.3	464.9	482.2
157.5°	382.8	383.5	387.6	395.2	403.2	412.5	424.2	436.6	447.5	459.6	472.9
160°	391.1	391.1	394.5	401.3	407.3	415.9	426.3	436.6	446.1	455.5	466.7
162.5°	397.3	397.3	400.0	405.4	410.8	418.0	427.0	435.9	443.3	451.3	460.5
165°	406.5	405.6	407.3	411.6	415.1	421.1	428.0	434.0	439.2	445.2	452.0
167.5°	413.5	412.5	413.4	416.6	419.0	422.8	427.8	432.7	435.1	439.0	444.0
170°	417.7	415.9	416.8	419.4	421.1	422.8	427.1	430.6	432.3	434.9	439.2
172.5°	420.4	419.4	419.6	421.5	422.5	423.5	427.1	429.9	430.2	431.4	434.4
175°	423.7	422.8	422.0	423.7	423.7	424.6	426.3	428.0	427.1	427.1	428.9
177.5°	425.2	424.6	423.9	424.6	424.6	424.6	425.2	426.6	425.2	424.6	425.2
180°	424.6	424.6	424.6	424.6	424.6	424.6	424.6	424.6	424.6	424.6	424.6



TEST NUMBER: P331897-935

CATALOG NUMBER: S123DIP-S340D1025U935-4F0-1E-UDD-D4

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	368.2	368.2	368.2	368.2	368.2	368.2	368.2	368.2
2.5°	367.5	368.1	368.7	368.9	368.9	368.8	368.7	368.6
5°	366.9	367.6	368.3	368.7	368.6	368.4	368.3	368.2
7.5°	364.7	365.6	366.4	366.9	366.8	366.6	366.5	366.4
10°	362.5	363.3	364.2	364.5	364.4	364.2	364.0	363.9
12.5°	359.4	360.2	361.0	361.4	361.2	361.0	360.8	360.7
15°	353.6	354.5	355.4	355.8	355.7	355.6	355.5	355.4
17.5°	346.0	346.9	347.7	348.0	347.8	347.8	347.7	347.5
20°	340.6	341.4	342.2	342.7	342.8	342.9	342.9	343.0
22.5°	334.6	335.6	336.7	337.2	337.1	337.0	337.0	336.9
25°	324.4	325.6	326.7	327.4	327.4	327.4	327.4	327.4
27.5°	313.8	314.9	315.9	316.4	316.5	316.6	316.6	316.7
30°	306.6	307.7	308.8	309.3	309.3	309.3	309.3	309.3
32.5°	298.8	299.9	301.0	301.7	302.0	302.1	302.4	302.6
35°	287.1	288.4	289.8	290.7	291.0	291.4	291.7	292.1
37.5°	275.0	276.6	278.1	279.0	279.2	279.6	279.8	280.1
40°	267.0	268.5	270.0	271.0	271.3	271.7	272.1	272.4
42.5°	258.6	260.3	261.9	263.0	263.6	264.0	264.5	265.0
45°	246.1	247.8	249.5	250.7	251.4	252.1	252.9	253.6
47.5°	233.4	235.4	237.3	238.5	239.0	239.6	240.1	240.7
50°	224.7	226.8	228.9	230.2	230.8	231.4	232.0	232.7
52.5°	215.9	218.0	220.2	221.6	222.4	223.2	223.9	224.6
55°	202.6	205.0	207.4	209.0	209.7	210.4	211.1	211.8
57.5°	189.0	191.4	193.8	195.4	196.3	197.2	198.0	198.8
60°	179.5	182.0	184.5	186.2	187.2	188.2	189.2	190.2
62.5°	170.5	173.0	175.5	177.2	178.1	179.0	179.9	180.9
65°	156.2	158.9	161.5	163.3	164.2	165.1	166.0	166.9
67.5°	141.9	144.8	147.7	149.6	150.3	151.1	151.9	152.6
70°	132.5	135.3	138.2	140.1	140.9	141.8	142.8	143.6
72.5°	123.0	125.9	128.8	130.8	131.6	132.5	133.5	134.3
75°	108.6	111.5	114.5	116.5	117.5	118.6	119.7	120.8
77.5°	95.1	98.2	101.3	103.2	104.1	105.0	105.7	106.6
80°	86.3	89.4	92.4	94.3	95.2	96.1	97.0	97.9
82.5°	78.3	81.3	84.4	86.3	87.2	88.1	88.9	89.9
85°	67.1	70.1	73.1	75.1	75.9	76.9	77.7	78.6
87.5°	61.5	64.7	67.8	70.2	70.9	72.0	73.0	73.8
90°	72.8	76.8	80.7	84.4	84.4	86.1	87.9	87.9
92.5°	121.1	109.1	105.3	102.7	102.0	100.2	101.9	101.2
95°	354.6	257.7	214.9	185.8	170.4	163.5	158.4	155.8
97.5°	813.4	662.5	554.3	453.3	390.8	353.0	330.7	324.2
100°	1053.3	986.3	888.4	768.0	682.2	620.3	587.6	589.4
102.5°	1131.7	1132.0	1075.9	1000.2	933.6	884.8	857.6	838.8
105°	1152.4	1240.8	1259.6	1238.9	1200.1	1168.3	1141.6	1138.2
107.5°	1081.6	1223.6	1301.2	1333.4	1334.9	1324.6	1316.2	1309.1
110°	1015.2	1175.7	1286.2	1348.0	1372.7	1380.4	1379.3	1378.3





TEST NUMBER: P331897-935

CATALOG NUMBER: S123DIP-S340D1025U935-4F0-1E-UDD-D4

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	949.3	1113.0	1236.7	1315.5	1360.3	1382.4	1389.7	1390.9
115°	861.8	1013.5	1141.9	1237.0	1302.2	1340.7	1358.7	1363.7
117.5°	797.5	928.8	1044.3	1140.8	1208.7	1252.8	1278.2	1284.7
120°	763.5	881.6	986.8	1074.9	1143.4	1192.1	1213.4	1219.2
122.5°	736.3	843.3	940.9	1022.8	1083.7	1127.7	1151.0	1158.1
125°	699.8	795.4	879.8	949.8	1005.4	1043.8	1065.9	1072.5
127.5°	667.6	752.9	829.1	892.9	942.5	975.4	995.4	1001.5
130°	647.3	726.3	797.7	857.2	903.4	934.8	953.4	960.8
132.5°	628.4	701.2	767.6	824.4	867.8	899.4	915.9	921.4
135°	602.8	665.4	722.8	772.8	815.5	841.6	857.6	864.0
137.5°	579.3	630.7	680.3	723.7	759.5	786.1	799.6	804.0
140°	565.5	610.6	653.2	691.1	724.2	748.7	762.9	762.5
142.5°	552.2	591.1	628.0	661.0	689.2	711.0	723.8	723.4
145°	536.8	565.9	594.2	619.6	641.4	659.9	667.1	669.2
147.5°	524.3	547.1	569.5	587.5	604.1	616.6	623.5	624.5
150°	515.7	535.5	553.5	569.9	583.0	592.6	598.0	598.1
152.5°	508.1	525.1	541.1	554.7	564.9	573.7	576.8	576.9
155°	496.7	510.5	523.4	533.7	541.5	548.3	550.0	550.9
157.5°	484.7	496.2	506.2	514.3	521.0	526.2	527.5	527.4
160°	477.9	487.3	495.8	501.9	507.9	513.1	513.1	512.2
162.5°	469.6	477.7	485.6	490.9	494.9	499.3	499.3	498.4
165°	458.9	464.1	470.1	474.4	477.9	481.3	480.4	480.4
167.5°	449.6	453.6	457.0	460.1	461.7	464.1	463.2	463.2
170°	443.5	446.1	449.4	451.2	452.0	453.7	452.9	452.9
172.5°	438.0	439.9	442.6	443.7	443.8	445.6	444.0	443.3
175°	430.6	431.4	433.2	433.2	433.2	434.0	433.2	432.3
177.5°	425.9	426.6	427.3	427.3	426.6	427.3	425.9	425.9
180°	424.6	424.6	424.6	424.6	424.6	424.6	424.6	424.6

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