

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: io LED

Report Number: P273400

Luminaire Tested: **0.05-03W-830-90ASYM-STD-UNV-AN-3F0**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P273400
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1708-246-12)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: 0.05-03W-830-90ASYM-STD-UNV-AN-3F0
Description: iO LIGHTING SERIES 2.0 LINEAR LED LUMINAIRE. 90 DEGREE ASYMMETRIC OPTIC.
STANDARD OUTPUT
Light Source: 3000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 314.8 lumens
Efficiency: N/A
Efficacy: 38.4 lumens/watt
Spacing Criteria (0/90/45): 1.03 / 0.97 / 1.19
Luminous Opening: Rectangular (W 2.92' x L: 0.21' x H: 0')
CIE Type: Direct

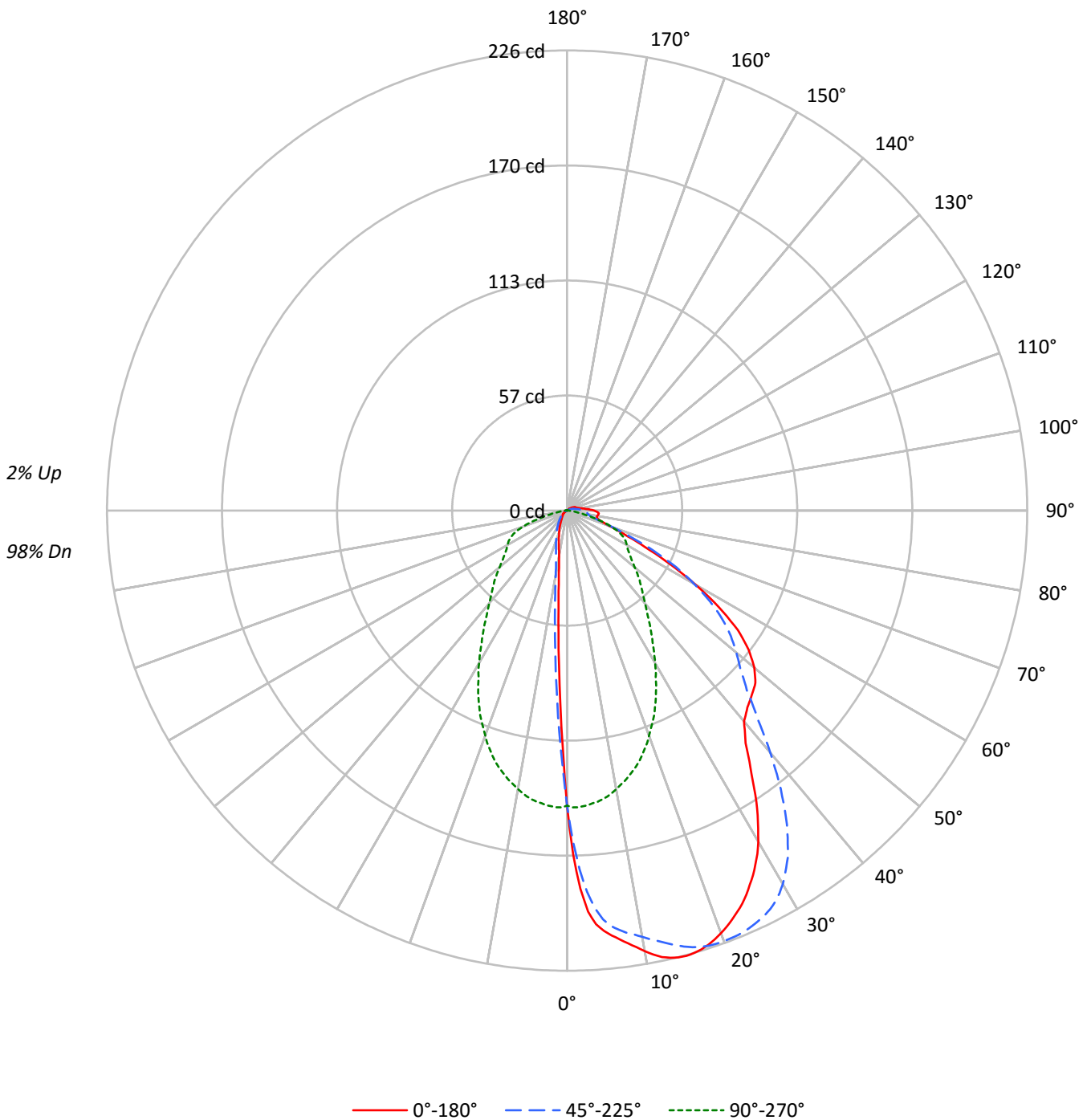
Input Watts (W): 8.2
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	50	30	10	0		
RCR																										
0	119	119	119	119	116	116	116	116	110	110	110	105	105	105	100	100	100	98								
1	109	105	101	98	106	103	99	96	98	95	93	94	91	89	90	88	86	84								
2	100	93	87	82	98	91	85	80	87	82	78	84	80	76	80	77	74	72								
3	92	83	75	69	90	81	74	68	78	72	67	75	70	65	72	68	64	62								
4	85	74	66	59	83	72	65	59	70	63	58	67	61	57	65	60	56	54								
5	78	66	58	52	76	65	57	51	63	56	51	61	55	50	59	53	49	47								
6	73	60	52	45	71	59	51	45	57	50	45	55	49	44	53	48	44	42								
7	67	55	46	40	66	54	46	40	52	45	40	50	44	39	49	43	39	37								
8	63	50	42	36	61	49	41	36	48	41	36	46	40	35	45	39	35	33								
9	59	46	38	33	57	45	38	33	44	37	32	43	37	32	42	36	32	30								
10	55	42	35	30	54	42	35	30	41	34	29	40	34	29	39	33	29	27								

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	2567	2567	2567
5°	3684	2566	870
10°	3954	2498	408
15°	4152	2388	286
20°	4164	2217	219
25°	4069	2011	166
30°	3841	1769	125
35°	3415	1548	97
40°	3124	1376	83
45°	3212	1278	78
50°	3307	1191	72
55°	3163	1155	59
60°	2586	1201	35
65°	1760	1270	42
70°	1129	1202	52
75°	1068	862	62
80°	1530	561	92
85°	3171	386	183



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	12.6	4.0
10°-20°	34.7	11.0
20°-30°	52.5	16.7
30°-40°	60.3	19.2
40°-50°	57.9	18.4
50°-60°	48.4	15.4
60°-70°	26.2	8.3
70°-80°	9.6	3.1
80°-90°	5.7	1.8
90°-100°	3.3	1.1
100°-110°	1.7	0.6
110°-120°	1.1	0.3
120°-130°	0.5	0.2
130°-140°	0.2	0.1
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	99.8	31.7
0°-40°	160.1	50.9
0°-60°	266.4	84.6
0°-90°	307.9	97.8
90°-120°	6.1	2.0
90°-150°	6.9	2.2
90°-180°	7.0	2.2
0°-180°	314.8	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	145	145	145	145	145	
5°	207	202	144	68	49	20
15°	226	222	130	21	16	64
25°	208	222	103	12	8	95
35°	158	188	72	7	4	99
45°	128	125	51	4	3	99
55°	102	93	37	2	2	89
65°	42	47	30	1	1	43
75°	16	13	13	1	1	18
85°	16	10	2	1	1	12
90°	13	8	0	0	1	7
95°	9	6	0	0	1	7
105°	5	3	0	0	0	6
115°	4	2	0	0	0	4
125°	2	0	0	0	0	2
135°	0	0	0	0	0	0
145°	0	0	0	0	0	0
155°	0	0	0	0	0	0
165°	0	0	0	0	0	0
175°	0	0	0	0	0	0
180°	0	0	0	0	0	0



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	144.9	144.9	144.9	144.9	144.9	144.9	144.9	144.9	144.9	144.9	144.9
1°	169.0	168.5	169.0	166.4	166.6	167.4	167.4	165.9	166.7	163.1	162.4
2°	185.9	185.6	185.6	183.3	183.3	184.0	183.7	181.8	181.8	178.0	176.4
3°	197.3	196.8	196.7	194.9	194.9	195.3	194.9	193.4	192.7	189.4	187.5
4°	203.7	203.6	203.1	201.8	201.8	202.2	201.8	200.8	200.3	197.5	195.8
5°	207.2	207.2	206.5	205.7	205.7	206.0	205.5	205.0	204.3	202.7	201.5
6°	209.8	209.5	209.3	208.2	208.2	208.4	208.1	207.6	207.0	206.0	205.1
7°	212.2	211.9	211.5	210.5	210.7	210.5	210.1	209.5	209.1	208.2	207.4
8°	214.6	214.3	214.1	212.9	212.9	212.7	212.4	211.5	211.2	210.1	209.3
9°	217.1	216.7	216.5	215.3	215.3	215.2	214.6	214.0	213.1	211.9	210.8
10°	219.8	219.5	219.3	218.1	217.9	217.6	217.1	216.4	215.2	214.0	212.6
11°	222.1	222.1	221.4	220.5	220.2	220.0	219.5	218.8	217.4	215.9	214.5
12°	224.2	224.2	223.5	222.6	222.3	222.1	221.6	220.9	219.3	218.1	216.2
13°	225.4	225.4	224.9	224.0	224.0	223.8	223.3	222.8	221.2	220.0	218.1
14°	226.2	226.2	225.7	224.9	225.0	224.9	224.5	224.2	222.8	221.7	220.0
15°	226.4	226.6	225.9	225.2	225.5	225.4	225.2	224.9	224.2	223.1	221.7
16°	226.1	226.4	225.7	225.0	225.5	225.4	225.4	225.0	224.9	224.2	223.1
17°	225.4	225.7	225.2	224.5	225.2	225.0	225.0	225.0	225.2	224.7	224.0
18°	224.2	224.7	224.3	223.8	224.5	224.7	224.7	224.5	225.2	225.0	224.7
19°	222.8	223.3	223.1	222.8	223.5	223.8	223.8	224.0	224.9	225.0	225.0
20°	220.9	221.6	221.4	221.2	222.3	222.4	222.8	223.1	224.3	224.7	225.0
21°	218.8	219.7	219.7	219.5	220.5	221.0	221.6	222.1	223.5	224.2	224.9
22°	216.5	217.4	217.4	217.4	218.6	219.3	219.8	221.0	222.6	223.8	224.7
23°	214.0	214.8	214.8	215.0	216.4	217.2	217.9	219.3	221.4	223.1	224.2
24°	211.4	212.1	212.2	212.4	214.0	214.8	215.5	217.2	219.8	222.1	223.3
25°	208.2	209.1	209.1	209.5	211.2	212.1	212.9	215.0	217.9	220.5	222.4
26°	204.6	205.7	206.0	206.3	208.1	208.9	210.0	212.2	215.7	218.5	221.2
27°	201.0	202.0	202.5	202.5	204.8	205.7	206.9	209.3	213.3	216.2	219.7
28°	197.0	198.0	198.0	198.9	201.0	202.0	203.2	206.0	210.1	213.4	217.6
29°	192.7	193.7	193.7	194.8	196.8	198.0	199.3	202.4	206.2	210.3	215.0
30°	187.8	188.9	189.0	189.9	192.2	193.4	194.8	198.2	202.0	206.7	211.9
32.5°	173.7	174.9	174.9	176.8	178.5	180.6	181.6	185.4	190.4	195.6	201.8
35°	157.9	159.1	159.0	160.0	162.8	164.0	166.0	170.0	175.2	181.6	188.2
37.5°	143.9	144.6	144.3	145.1	147.0	148.9	150.5	153.6	158.8	165.5	172.3
40°	135.1	135.3	134.9	134.7	135.6	136.3	137.2	139.1	142.9	148.6	155.1
42.5°	131.1	130.6	130.1	129.5	129.0	129.0	128.7	129.0	130.4	133.7	138.4
45°	128.2	128.0	127.3	126.6	125.6	125.2	124.5	123.1	122.3	123.0	124.9
47.5°	125.4	124.9	124.2	123.5	122.3	121.8	120.6	118.5	116.9	115.9	115.4
50°	120.0	119.3	118.7	118.1	117.1	116.6	115.4	113.5	111.9	110.0	108.4
52.5°	112.4	111.6	111.2	110.7	109.7	109.0	107.9	106.5	105.2	103.8	101.4
55°	102.4	101.9	101.5	101.7	100.5	100.1	99.5	97.7	96.5	95.1	93.2
57.5°	88.4	88.0	88.2	89.1	88.9	89.1	89.1	88.2	87.2	85.4	83.2
60°	73.0	72.6	73.0	73.9	74.0	74.5	75.1	75.8	75.9	74.5	72.1
62.5°	57.1	56.6	56.7	57.3	57.3	57.9	58.6	59.8	61.1	61.2	60.5
65°	42.0	41.5	41.5	41.7	41.5	42.0	42.4	42.7	44.1	46.0	47.0



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
67.5°	30.1	29.7	29.7	29.7	29.7	29.9	29.7	30.1	30.8	32.0	33.4
70°	21.8	21.6	21.6	21.6	21.4	21.6	21.8	21.8	22.1	22.7	23.3
72.5°	17.6	17.5	17.5	17.3	17.0	17.0	16.8	16.6	16.4	16.6	17.0
75°	15.6	15.6	15.4	15.2	14.9	14.7	14.4	14.0	13.7	13.3	13.1
77.5°	14.9	14.9	14.7	14.4	14.0	13.7	13.5	12.8	12.3	11.8	11.2
80°	15.0	14.9	14.7	14.4	13.8	13.7	13.3	12.6	11.9	11.1	10.4
82.5°	15.4	15.4	15.2	14.7	14.2	13.8	13.5	12.8	11.9	11.1	10.0
85°	15.6	15.4	15.2	14.7	14.2	13.8	13.3	12.5	11.6	10.7	9.7
87.5°	14.7	14.5	14.4	13.8	13.1	13.0	12.5	11.6	10.9	9.9	9.0
90°	13.3	13.0	12.8	12.3	11.8	11.4	11.1	10.2	9.5	8.8	8.0
92.5°	11.2	11.1	10.9	10.4	10.0	9.7	9.3	8.6	8.1	7.6	7.1
95°	9.3	9.2	9.0	8.6	8.3	8.1	7.8	7.3	6.9	6.4	6.1
97.5°	7.8	7.6	7.4	7.3	6.9	6.7	6.6	6.2	5.9	5.5	5.2
100°	6.6	6.6	6.4	6.2	5.9	5.7	5.5	5.4	5.0	4.7	4.5
102.5°	5.7	5.7	5.5	5.4	5.2	5.0	4.8	4.7	4.3	4.0	3.8
105°	5.2	5.0	5.0	4.8	4.7	4.5	4.3	4.0	3.6	3.5	3.1
107.5°	4.8	4.7	4.7	4.5	4.2	4.2	4.0	3.6	3.3	2.9	2.8
110°	4.5	4.5	4.3	4.2	4.0	3.8	3.6	3.5	2.9	2.6	2.2
112.5°	4.3	4.3	4.2	4.0	3.8	3.6	3.5	3.1	2.8	2.4	1.9
115°	4.2	4.0	4.0	3.8	3.5	3.3	3.1	2.8	2.4	1.9	1.6
117.5°	3.6	3.6	3.6	3.3	3.1	2.9	2.8	2.4	2.1	1.6	1.2
120°	3.3	3.1	3.1	2.9	2.6	2.4	2.4	2.1	1.6	1.2	0.9
122.5°	2.8	2.6	2.6	2.4	2.2	2.1	1.9	1.6	1.2	0.9	0.7
125°	2.1	2.1	2.1	1.9	1.7	1.6	1.4	1.2	0.9	0.7	0.3
127.5°	1.7	1.6	1.6	1.4	1.2	1.2	1.0	0.9	0.5	0.3	0.3
130°	1.2	1.2	1.0	1.0	0.9	0.7	0.5	0.3	0.3	0.3	0.3
132.5°	0.7	0.7	0.7	0.5	0.3	0.3	0.3	0.3	0.3	0.3	0.3
135°	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
137.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
140°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
142.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
145°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
147.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
150°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
152.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
155°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
157.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
160°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
162.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
165°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
167.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
180°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	144.9	144.9	144.9	144.9	144.9	144.9	144.9	144.9	144.9	144.9	144.9
1°	161.4	157.6	156.2	155.1	153.9	152.2	151.2	150.0	147.7	145.8	143.6
2°	174.2	169.3	166.9	164.1	162.4	159.6	157.0	153.8	149.8	145.8	141.3
3°	184.7	179.5	175.9	172.1	170.0	166.6	162.2	157.4	151.5	145.5	138.7
4°	193.0	187.8	183.7	179.2	176.8	173.0	167.3	160.9	152.9	145.1	136.3
5°	199.1	194.4	190.3	185.4	182.8	178.8	171.9	163.6	154.3	144.3	133.5
6°	203.2	199.1	195.3	190.8	188.2	184.0	176.2	166.7	155.7	143.7	130.6
7°	206.0	202.5	199.3	195.3	192.5	188.7	180.2	169.7	156.7	142.9	127.6
8°	208.1	205.0	202.2	198.7	196.3	192.5	183.9	172.4	157.7	141.8	124.7
9°	209.5	206.5	204.3	201.2	199.1	195.8	187.0	174.5	158.3	140.4	121.2
10°	211.2	207.9	205.8	203.2	201.3	198.6	189.9	176.8	159.0	138.9	117.8
11°	212.9	209.3	207.2	204.8	203.1	200.6	192.3	178.7	159.5	137.3	114.2
12°	214.5	210.7	208.6	206.2	204.6	202.2	194.4	180.6	160.0	135.8	110.7
13°	216.4	211.9	209.8	207.6	205.8	203.6	196.3	182.3	160.3	134.0	107.1
14°	217.9	213.8	211.0	208.6	207.0	204.8	197.9	184.0	160.5	132.1	103.4
15°	219.5	215.3	212.2	209.5	207.9	205.7	199.3	185.2	160.7	130.2	99.6
16°	221.0	216.9	213.4	210.3	208.9	206.7	200.5	186.5	160.7	128.2	95.8
17°	222.6	218.6	214.6	211.4	210.0	207.9	201.5	187.7	160.5	125.7	91.8
18°	224.0	220.0	216.4	212.6	211.2	208.9	202.5	188.7	160.2	123.1	88.2
19°	224.7	221.2	217.6	214.0	212.1	210.0	203.6	189.7	159.6	120.6	84.2
20°	225.0	222.3	218.8	215.0	212.7	210.7	204.4	190.6	159.0	117.6	80.3
21°	225.2	223.1	219.7	216.0	213.8	211.5	205.3	191.3	158.3	114.7	76.6
22°	225.4	223.6	220.9	217.2	214.6	212.4	206.2	192.3	157.9	111.9	73.0
23°	225.0	223.8	221.4	217.9	215.7	213.1	207.0	193.2	157.2	109.3	69.4
24°	224.5	224.0	222.1	218.8	216.7	214.0	207.9	193.9	156.4	106.0	65.9
25°	224.2	224.0	222.3	219.3	217.6	215.0	208.4	194.4	155.3	102.9	62.6
26°	223.5	223.8	222.6	220.2	218.3	215.7	209.1	194.8	153.9	99.6	59.3
27°	222.4	223.3	222.9	221.0	219.1	216.7	210.0	195.1	152.4	96.2	56.4
28°	221.2	222.8	223.1	221.7	220.0	217.6	211.0	195.8	150.8	92.7	53.4
29°	219.7	221.9	222.8	222.3	221.0	218.8	211.9	196.7	149.1	89.8	50.9
30°	217.4	220.7	222.4	222.6	221.7	219.7	212.7	197.0	147.5	86.5	48.6
32.5°	209.5	215.9	220.0	223.1	223.3	221.9	215.3	198.2	142.9	78.5	43.2
35°	197.3	207.0	215.0	221.4	223.1	224.0	218.6	199.6	138.0	71.6	38.2
37.5°	183.2	193.7	205.8	216.4	220.5	223.1	221.2	200.8	132.1	65.0	34.9
40°	165.9	177.6	192.0	207.4	213.4	219.7	222.3	201.2	125.9	59.5	32.0
42.5°	147.9	159.8	175.0	193.2	202.4	211.7	220.7	199.9	118.5	54.8	29.7
45°	131.3	141.5	156.4	176.4	187.3	199.6	215.5	196.1	111.0	51.0	28.0
47.5°	117.6	124.4	137.2	157.2	169.2	184.4	208.1	190.9	103.1	47.2	26.5
50°	107.9	110.9	119.5	136.6	148.2	164.7	196.8	185.4	96.0	43.2	24.6
52.5°	100.0	100.1	104.3	116.2	126.8	142.7	180.9	177.6	90.3	40.0	22.7
55°	91.3	90.1	91.5	98.8	106.0	119.0	159.6	168.1	86.0	37.4	20.6
57.5°	81.8	79.6	79.6	83.2	87.7	97.4	132.8	153.9	82.2	35.3	18.9
60°	70.6	68.0	67.1	69.0	71.6	78.2	107.8	134.6	77.8	33.9	17.5
62.5°	58.5	56.0	55.2	55.9	57.1	61.7	83.2	111.0	72.0	32.3	16.1
65°	46.5	44.5	43.2	43.6	44.1	47.7	62.3	85.4	63.6	30.3	14.9



TEST NUMBER: P273400

CATALOG NUMBER: 0.05-03W-830-90ASYM-STD-UNV-AN-3F0

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
67.5°	34.6	34.2	33.6	33.7	34.4	35.8	45.8	61.9	52.2	27.5	13.3
70°	24.6	25.4	25.8	25.9	26.1	27.0	32.9	43.1	38.9	23.2	11.6
72.5°	17.5	18.3	19.4	19.9	20.1	20.4	23.7	29.4	27.5	18.0	9.2
75°	13.3	13.7	14.4	15.4	15.4	15.7	17.3	19.9	18.7	12.6	6.9
77.5°	10.9	10.9	11.2	11.9	12.1	12.3	13.0	13.8	12.3	8.5	4.7
80°	9.9	9.5	9.3	9.5	9.7	9.7	9.9	9.5	8.1	5.5	2.9
82.5°	9.2	8.6	8.1	8.0	7.8	7.6	7.4	6.6	5.4	3.3	1.6
85°	8.8	8.0	7.3	6.7	6.6	6.2	5.7	4.7	3.5	1.9	0.9
87.5°	8.1	7.3	6.6	5.9	5.5	5.2	4.3	3.3	2.1	1.0	0.3
90°	7.3	6.6	5.9	5.0	4.7	4.3	3.5	2.2	1.2	0.3	0.3
92.5°	6.4	5.9	5.2	4.5	4.0	3.6	2.6	1.6	0.7	0.3	0.3
95°	5.5	5.2	4.5	3.8	3.5	2.9	2.1	1.0	0.3	0.3	0.3
97.5°	4.8	4.5	3.8	3.1	2.8	2.4	1.4	0.5	0.3	0.3	0.3
100°	4.2	3.8	3.3	2.6	2.2	1.7	0.9	0.3	0.3	0.3	0.3
102.5°	3.5	3.1	2.6	1.9	1.6	1.2	0.5	0.3	0.3	0.3	0.3
105°	2.8	2.4	2.1	1.4	1.0	0.7	0.3	0.3	0.3	0.3	0.3
107.5°	2.4	1.9	1.6	1.0	0.7	0.5	0.3	0.3	0.3	0.3	0.3
110°	1.9	1.6	1.0	0.7	0.3	0.3	0.3	0.3	0.3	0.3	0.3
112.5°	1.6	1.0	0.7	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
115°	1.2	0.7	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
117.5°	0.9	0.5	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
120°	0.5	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
122.5°	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
125°	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
127.5°	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
130°	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
132.5°	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
135°	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
137.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
140°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
142.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
145°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
147.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
150°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
152.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
155°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
157.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
160°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
162.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
165°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
167.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P273400

CATALOG NUMBER: 0.05-03W-830-90ASYM-STD-UNV-AN-3F0

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
180°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P273400

CATALOG NUMBER: 0.05-03W-830-90ASYM-STD-UNV-AN-3F0

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	144.9	144.9	144.9	144.9	144.9	144.9	144.9	144.9	144.9	144.9	144.9
1°	140.6	137.9	135.4	134.4	133.0	131.5	130.9	127.3	125.7	124.5	123.1
2°	136.3	131.6	127.3	126.3	123.0	119.5	117.4	112.3	109.1	106.9	104.3
3°	132.0	125.1	119.2	117.1	112.9	107.8	104.1	97.9	93.6	90.5	87.0
4°	127.1	118.5	110.9	107.8	103.1	96.5	91.7	84.8	79.6	75.9	72.1
5°	122.5	112.1	102.7	98.9	93.6	86.0	80.3	73.2	67.6	63.8	59.8
6°	117.6	105.5	94.8	90.3	84.8	76.3	70.2	63.0	57.4	53.6	50.0
7°	112.6	98.9	87.3	82.3	76.6	67.8	61.2	54.5	49.1	45.7	41.9
8°	107.8	92.7	80.3	75.1	69.2	60.2	53.8	47.4	42.0	38.7	36.0
9°	102.7	86.7	73.3	68.0	62.3	53.3	47.2	41.0	36.7	33.9	31.3
10°	97.7	80.8	67.1	61.7	56.2	47.6	41.5	36.3	32.3	29.9	27.8
11°	92.9	75.2	61.4	55.9	50.7	42.2	37.0	32.3	28.9	26.8	25.1
12°	88.0	69.9	56.2	50.9	45.7	38.1	33.2	29.2	26.3	24.6	23.0
13°	83.4	64.9	51.4	46.4	41.3	34.4	30.1	26.6	24.2	22.7	21.3
14°	78.7	59.8	47.2	41.9	37.7	31.5	27.7	24.6	22.5	21.1	19.9
15°	74.4	55.5	42.9	38.4	34.6	28.9	25.6	22.8	21.1	19.7	18.7
16°	70.0	51.4	39.4	35.5	31.8	26.8	23.7	21.4	19.9	18.5	17.6
17°	65.7	47.7	36.5	32.7	29.4	24.9	22.3	20.2	18.7	17.5	16.6
18°	61.9	44.3	33.7	30.3	27.3	23.3	20.9	19.0	17.6	16.6	15.6
19°	58.1	41.0	31.3	28.2	25.6	22.1	19.9	18.2	16.8	15.6	14.7
20°	54.5	38.2	29.2	26.5	24.0	20.9	18.9	17.1	15.7	14.7	13.8
21°	51.2	35.6	27.5	24.9	22.7	19.9	18.0	16.3	14.9	13.8	13.1
22°	48.1	33.4	25.9	23.5	21.6	19.0	17.1	15.4	14.2	13.1	12.5
23°	45.0	31.5	24.6	22.3	20.6	18.0	16.3	14.5	13.5	12.6	11.9
24°	42.0	29.7	23.3	21.3	19.7	17.3	15.4	13.8	12.8	11.9	11.2
25°	39.6	28.2	22.1	20.4	18.7	16.4	14.7	13.3	12.3	11.4	10.7
26°	37.5	26.6	21.1	19.5	18.0	15.6	14.0	12.6	11.8	10.9	10.2
27°	35.5	25.4	20.2	18.7	17.1	14.9	13.3	12.1	11.2	10.4	9.7
28°	33.7	24.2	19.4	17.8	16.4	14.4	12.8	11.6	10.7	9.9	9.2
29°	32.0	23.2	18.7	17.1	15.7	13.7	12.3	11.1	10.2	9.3	8.6
30°	30.4	22.1	17.8	16.4	15.0	13.1	11.8	10.6	9.7	8.8	8.0
32.5°	27.3	20.1	16.3	14.9	13.7	11.9	10.7	9.5	8.5	7.6	7.1
35°	24.7	18.3	14.7	13.5	12.5	10.9	9.5	8.5	7.4	6.7	6.2
37.5°	22.7	16.8	13.5	12.3	11.4	9.9	8.6	7.4	6.6	5.9	5.4
40°	20.8	15.6	12.5	11.4	10.4	9.0	7.6	6.6	5.7	5.2	4.7
42.5°	19.5	14.5	11.4	10.6	9.7	8.1	6.9	5.9	5.0	4.5	4.0
45°	18.5	13.7	10.7	9.7	8.8	7.4	6.2	5.2	4.5	4.0	3.5
47.5°	17.5	12.8	10.0	9.0	8.1	6.7	5.5	4.7	4.0	3.5	3.1
50°	16.4	11.9	9.3	8.3	7.4	6.1	5.0	4.2	3.5	2.9	2.6
52.5°	15.2	11.1	8.5	7.6	6.7	5.5	4.5	3.6	2.9	2.6	2.4
55°	14.0	10.2	7.8	6.9	6.2	5.0	4.0	3.1	2.4	2.2	2.1
57.5°	12.5	9.2	6.9	6.2	5.5	4.5	3.3	2.6	2.1	1.9	1.9
60°	11.2	8.1	6.1	5.5	5.0	3.8	2.8	2.1	1.7	1.6	1.6
62.5°	10.0	7.1	5.4	4.8	4.3	3.3	2.2	1.7	1.6	1.4	1.2
65°	8.8	6.1	4.7	4.2	3.6	2.6	1.7	1.4	1.2	1.0	1.0



TEST NUMBER: P273400

CATALOG NUMBER: 0.05-03W-830-90ASYM-STD-UNV-AN-3F0

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
67.5°	7.6	5.0	3.8	3.3	2.9	1.9	1.4	1.0	0.9	0.9	0.9
70°	6.2	4.2	2.9	2.6	2.1	1.4	1.0	0.9	0.9	0.9	0.9
72.5°	4.8	3.1	2.2	1.9	1.4	1.0	0.9	0.9	0.9	0.9	0.9
75°	3.5	2.2	1.4	1.2	0.9	0.7	0.7	0.7	0.9	0.9	0.9
77.5°	2.4	1.6	0.9	0.7	0.7	0.7	0.7	0.7	0.9	0.9	0.9
80°	1.6	0.9	0.5	0.7	0.7	0.7	0.7	0.7	0.7	0.9	0.9
82.5°	0.9	0.5	0.5	0.5	0.5	0.7	0.7	0.7	0.7	0.7	0.7
85°	0.3	0.5	0.5	0.5	0.5	0.5	0.7	0.7	0.7	0.7	0.7
87.5°	0.3	0.3	0.5	0.5	0.5	0.5	0.5	0.5	0.7	0.7	0.7
90°	0.3	0.3	0.3	0.5	0.5	0.5	0.5	0.5	0.5	0.7	0.7
92.5°	0.3	0.3	0.3	0.3	0.3	0.5	0.5	0.5	0.5	0.5	0.5
95°	0.3	0.3	0.3	0.3	0.3	0.3	0.5	0.5	0.5	0.5	0.5
97.5°	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.5	0.5	0.5	0.5
100°	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.5	0.5
102.5°	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
105°	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
107.5°	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
110°	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
112.5°	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
115°	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
117.5°	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
120°	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
122.5°	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
125°	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
127.5°	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
130°	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
132.5°	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
135°	0.3	0.3	0.3	0.5	0.3	0.5	0.5	0.5	0.3	0.3	0.3
137.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
140°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
142.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
145°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
147.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
150°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
152.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
155°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
157.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
160°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
162.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
165°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
167.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P273400

CATALOG NUMBER: 0.05-03W-830-90ASYM-STD-UNV-AN-3F0

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
180°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P273400

CATALOG NUMBER: 0.05-03W-830-90ASYM-STD-UNV-AN-3F0

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	144.9	144.9	144.9	144.9	144.9	144.9	144.9	144.9
1°	124.9	122.3	121.6	117.8	118.0	116.9	117.4	117.4
2°	104.8	101.7	100.5	96.9	96.5	95.1	95.3	95.1
3°	86.7	83.4	82.0	78.5	77.8	76.4	76.4	76.3
4°	71.1	67.8	66.2	63.5	62.6	61.2	61.1	60.5
5°	58.5	55.3	53.8	51.7	50.7	49.5	49.3	48.9
6°	48.3	45.7	44.1	42.2	41.2	40.1	40.1	39.8
7°	40.3	38.1	36.8	35.5	34.6	33.7	33.6	33.4
8°	34.4	32.0	31.5	30.4	29.7	29.1	28.9	28.5
9°	30.1	28.0	27.7	26.8	26.1	25.6	25.4	25.3
10°	26.6	25.1	24.7	24.0	23.5	23.0	23.0	22.7
11°	23.9	22.8	22.5	22.0	21.4	21.1	21.1	20.9
12°	22.0	21.1	20.8	20.4	19.9	19.5	19.5	19.4
13°	20.4	19.5	19.4	19.0	18.5	18.2	18.2	18.0
14°	19.0	18.3	18.0	17.8	17.3	17.1	17.0	16.8
15°	18.0	17.1	17.0	16.6	16.1	15.9	15.7	15.6
16°	16.8	16.1	15.7	15.4	15.0	14.9	14.7	14.7
17°	15.7	15.0	14.9	14.7	14.2	14.0	13.8	13.8
18°	14.9	14.2	14.0	13.8	13.3	13.1	13.1	13.0
19°	14.0	13.5	13.1	13.0	12.6	12.5	12.3	12.3
20°	13.3	12.8	12.5	12.3	11.9	11.8	11.8	11.6
21°	12.6	12.1	11.8	11.6	11.2	11.1	11.1	10.9
22°	11.9	11.4	11.2	11.1	10.7	10.6	10.4	10.4
23°	11.4	10.9	10.6	10.4	10.0	9.9	9.7	9.7
24°	10.7	10.2	10.0	9.9	9.5	9.2	9.2	9.0
25°	10.2	9.7	9.3	9.2	8.8	8.6	8.5	8.5
26°	9.7	9.0	8.8	8.6	8.3	8.1	8.0	8.0
27°	9.0	8.5	8.3	8.1	7.8	7.6	7.4	7.4
28°	8.5	8.0	7.8	7.6	7.3	7.1	7.1	6.9
29°	8.0	7.4	7.3	7.1	6.9	6.7	6.6	6.6
30°	7.4	7.1	6.9	6.7	6.6	6.2	6.2	6.1
32.5°	6.6	6.1	5.9	5.9	5.5	5.4	5.4	5.2
35°	5.7	5.2	5.0	5.0	4.8	4.7	4.7	4.5
37.5°	4.8	4.5	4.5	4.3	4.2	4.2	4.0	4.2
40°	4.3	4.0	3.8	3.8	3.6	3.6	3.6	3.6
42.5°	3.6	3.5	3.5	3.3	3.3	3.3	3.3	3.3
45°	3.3	3.1	3.1	3.1	3.1	3.1	3.1	3.1
47.5°	2.9	2.8	2.8	2.8	2.8	2.8	2.8	2.8
50°	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
52.5°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
55°	2.1	2.1	1.9	1.9	1.9	1.9	1.9	1.9
57.5°	1.7	1.7	1.6	1.6	1.6	1.6	1.4	1.4
60°	1.4	1.2	1.2	1.2	1.0	1.0	1.0	1.0
62.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
65°	0.9	0.9	1.0	1.0	1.0	1.0	1.0	1.0



TEST NUMBER: P273400

CATALOG NUMBER: 0.05-03W-830-90ASYM-STD-UNV-AN-3F0

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
67.5°	0.9	0.9	0.9	0.9	1.0	1.0	1.0	1.0
70°	0.9	0.9	1.0	1.0	1.0	1.0	1.0	1.0
72.5°	0.9	0.9	0.9	0.9	1.0	1.0	1.0	1.0
75°	0.9	0.9	0.9	0.9	0.9	1.0	0.9	0.9
77.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
80°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
82.5°	0.7	0.9	0.9	0.9	0.9	0.9	0.9	0.9
85°	0.7	0.7	0.7	0.9	0.9	0.9	0.9	0.9
87.5°	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
90°	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
92.5°	0.5	0.7	0.7	0.7	0.7	0.7	0.7	0.7
95°	0.5	0.5	0.5	0.5	0.5	0.7	0.7	0.7
97.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
100°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
102.5°	0.3	0.5	0.5	0.5	0.5	0.5	0.5	0.5
105°	0.3	0.3	0.3	0.3	0.5	0.5	0.5	0.5
107.5°	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
110°	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
112.5°	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
115°	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
117.5°	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
120°	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
122.5°	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
125°	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
127.5°	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
130°	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
132.5°	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
135°	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
137.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
140°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
142.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
145°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
147.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
150°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
152.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
155°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
157.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
160°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
162.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
165°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
167.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P273400

CATALOG NUMBER: 0.05-03W-830-90ASYM-STD-UNV-AN-3F0

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
180°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)