

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: P273412

Luminaire Tested: **0.05-03W-840-90ASYM-STD-UNV-AN-3F0**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P273412
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-840-90ASYM-STD-UNV-AN-3F0
Description: iO LIGHTING SERIES 2.0 LINEAR LED LUMINAIRE. 90 DEGREE ASYMMETRIC OPTIC.
STANDARD OUTPUT
Light Source: 4000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 333.9 lumens
Efficiency: N/A
Efficacy: 40.7 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

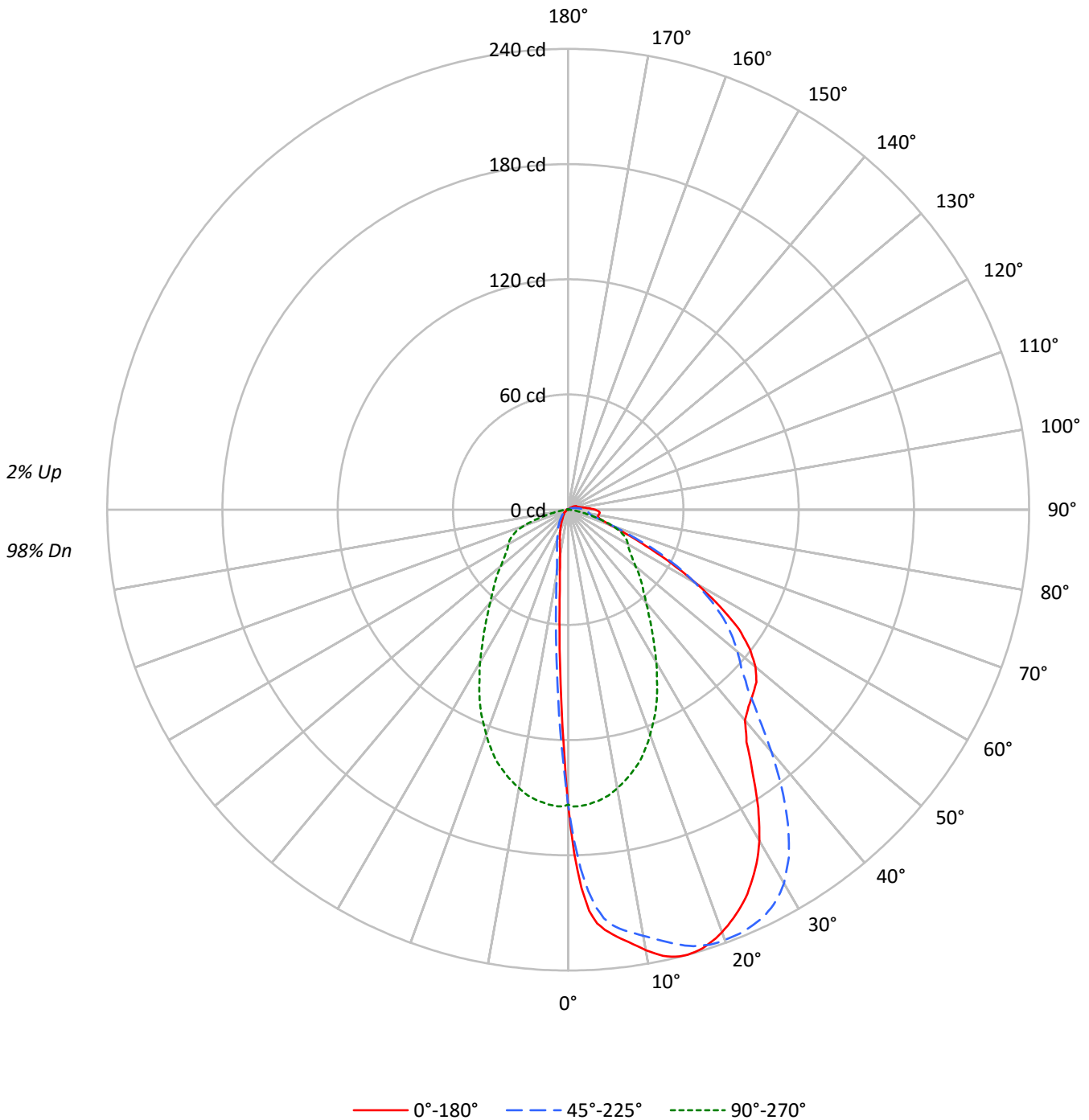
Input Watts (W): 8.2
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P273412

CATALOG NUMBER: 0.05-03W-840-90ASYM-STD-UNV-AN-3F0

Luminous Intensity Polar Plot





TEST NUMBER: P273412

CATALOG NUMBER: 0.05-03W-840-90ASYM-STD-UNV-AN-3F0

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	50	30	10	0																			
RCR																																														
0	119	119	119	119	115	115	115	115	110	110	110	105	105	105	100	100	100	98									98																			
1	109	105	101	98	106	103	99	96	98	95	92	94	91	89	90	88	86	84									84																			
2	100	93	87	82	98	91	85	80	87	82	78	84	80	76	80	77	74	72									72																			
3	92	83	75	69	90	81	74	68	78	72	67	75	70	65	72	68	64	62									62																			
4	85	74	66	59	83	72	65	59	70	63	58	67	61	57	65	60	56	54									54																			
5	78	66	58	52	76	65	57	51	63	56	51	61	55	50	59	53	49	47									47																			
6	73	60	52	45	71	59	51	45	57	50	45	55	49	44	53	48	44	42									42																			
7	67	55	46	40	66	54	46	40	52	45	40	50	44	39	49	43	39	37									37																			
8	63	50	42	36	61	49	41	36	48	41	36	46	40	35	45	39	35	33									33																			
9	59	46	38	33	57	45	38	33	44	37	32	43	37	32	42	36	32	30									30																			
10	55	42	35	30	54	42	35	30	41	34	29	40	34	29	39	33	29	27									27																			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	2721	2721	2721
5°	3905	2719	923
10°	4191	2648	432
15°	4401	2533	303
20°	4413	2351	232
25°	4314	2132	176
30°	4073	1876	131
35°	3620	1641	104
40°	3311	1459	90
45°	3405	1355	83
50°	3505	1262	77
55°	3351	1223	62
60°	2742	1272	39
65°	1869	1345	46
70°	1196	1274	57
75°	1129	917	62
80°	1632	602	92
85°	3354	406	183



TEST NUMBER: P273412

CATALOG NUMBER: 0.05-03W-840-90ASYM-STD-UNV-AN-3F0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	13.3	4.0
10°-20°	36.8	11.0
20°-30°	55.6	16.7
30°-40°	63.9	19.1
40°-50°	61.4	18.4
50°-60°	51.3	15.4
60°-70°	27.8	8.3
70°-80°	10.2	3.0
80°-90°	6.0	1.8
90°-100°	3.6	1.1
100°-110°	1.9	0.6
110°-120°	1.2	0.4
120°-130°	0.6	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°	105.8	31.7
0°-40°	169.7	50.8
0°-60°	282.4	84.6
0°-90°	326.4	97.8
90°-120°	6.7	2.0
90°-150°	7.5	2.2
90°-180°	8.0	2.4
0°-180°	333.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	154	154	154	154	154	
5°	220	214	153	72	52	21
15°	240	235	138	22	16	67
25°	221	236	109	13	9	101
35°	167	200	76	8	5	105
45°	136	132	54	5	3	105
55°	108	99	40	3	2	95
65°	45	50	32	1	1	46
75°	16	14	13	1	1	19
85°	16	10	2	1	1	13
90°	14	8	0	1	1	8
95°	10	6	0	1	1	8
105°	6	3	0	0	1	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



TEST NUMBER: P273412

CATALOG NUMBER: 0.05-03W-840-90ASYM-STD-UNV-AN-3F0

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	153.6	153.6	153.6	153.6	153.6	153.6	153.6	153.6	153.6	153.6	153.6
1°	179.1	178.6	179.1	176.4	176.6	177.5	177.5	175.8	176.7	172.9	172.2
2°	197.1	196.7	196.7	194.3	194.3	195.1	194.7	192.7	192.7	188.7	187.0
3°	209.2	208.6	208.5	206.6	206.6	207.0	206.6	205.0	204.2	200.8	198.7
4°	216.0	215.8	215.2	214.0	214.0	214.3	214.0	212.9	212.3	209.4	207.5
5°	219.6	219.6	218.9	218.0	218.0	218.4	217.8	217.3	216.5	214.9	213.6
6°	222.4	222.0	221.8	220.7	220.7	220.9	220.6	220.0	219.5	218.4	217.4
7°	225.0	224.6	224.2	223.1	223.3	223.1	222.8	222.0	221.7	220.7	219.8
8°	227.5	227.2	227.0	225.7	225.7	225.5	225.1	224.2	223.9	222.8	221.8
9°	230.1	229.7	229.5	228.3	228.3	228.1	227.5	226.8	225.9	224.6	223.5
10°	233.0	232.7	232.5	231.2	231.0	230.6	230.1	229.4	228.1	226.8	225.3
11°	235.4	235.4	234.7	233.8	233.4	233.2	232.7	231.9	230.5	228.8	227.3
12°	237.6	237.6	236.9	236.0	235.6	235.4	234.9	234.1	232.5	231.2	229.2
13°	238.9	238.9	238.3	237.4	237.4	237.2	236.7	236.1	234.5	233.2	231.2
14°	239.8	239.8	239.3	238.3	238.5	238.3	238.0	237.6	236.1	235.0	233.2
15°	240.0	240.2	239.4	238.7	239.1	238.9	238.7	238.3	237.6	236.5	235.0
16°	239.6	240.0	239.3	238.5	239.1	238.9	238.9	238.5	238.3	237.6	236.5
17°	238.9	239.3	238.7	238.0	238.7	238.5	238.5	238.5	238.7	238.2	237.4
18°	237.6	238.2	237.8	237.2	238.0	238.2	238.2	238.0	238.7	238.5	238.2
19°	236.1	236.7	236.5	236.1	236.9	237.2	237.2	237.4	238.3	238.5	238.5
20°	234.1	234.9	234.7	234.5	235.6	235.8	236.1	236.5	237.8	238.2	238.5
21°	231.9	232.8	232.8	232.7	233.8	234.3	234.9	235.4	236.9	237.6	238.3
22°	229.5	230.5	230.5	230.5	231.7	232.5	233.0	234.3	236.0	237.2	238.2
23°	226.8	227.7	227.7	227.9	229.4	230.3	231.0	232.5	234.7	236.5	237.6
24°	224.0	224.8	225.0	225.1	226.8	227.7	228.4	230.3	233.0	235.4	236.7
25°	220.7	221.7	221.7	222.0	223.9	224.8	225.7	227.9	231.0	233.8	235.8
26°	216.9	218.0	218.4	218.7	220.6	221.5	222.6	225.0	228.6	231.6	234.5
27°	213.0	214.1	214.7	214.7	217.1	218.0	219.3	221.8	226.1	229.2	232.8
28°	208.8	209.9	209.9	210.8	213.0	214.1	215.4	218.4	222.8	226.2	230.6
29°	204.2	205.3	205.3	206.4	208.6	209.9	211.2	214.5	218.5	222.9	227.9
30°	199.1	200.2	200.4	201.3	203.7	205.0	206.4	210.1	214.1	219.1	224.6
32.5°	184.1	185.4	185.4	187.4	189.2	191.4	192.5	196.5	201.9	207.4	214.0
35°	167.4	168.7	168.5	169.6	172.5	173.8	176.0	180.2	185.7	192.5	199.5
37.5°	152.5	153.3	152.9	153.8	155.8	157.9	159.5	162.8	168.3	175.5	182.6
40°	143.2	143.4	143.0	142.8	143.7	144.5	145.4	147.4	151.4	157.5	164.5
42.5°	139.0	138.4	137.9	137.3	136.8	136.8	136.4	136.8	138.2	141.7	146.7
45°	135.9	135.7	134.9	134.2	133.1	132.7	132.0	130.5	129.6	130.4	132.4
47.5°	132.9	132.4	131.6	130.9	129.6	129.1	127.8	125.6	123.9	122.8	122.3
50°	127.2	126.5	125.8	125.2	124.1	123.6	122.3	120.3	118.6	116.6	115.0
52.5°	119.2	118.3	117.9	117.3	116.2	115.5	114.4	112.9	111.5	110.0	107.4
55°	108.5	108.0	107.6	107.8	106.5	106.2	105.4	103.6	102.3	100.8	98.8
57.5°	93.7	93.3	93.5	94.4	94.2	94.4	94.4	93.5	92.4	90.6	88.2
60°	77.4	77.0	77.4	78.3	78.5	79.0	79.6	80.3	80.5	79.0	76.5
62.5°	60.5	60.0	60.1	60.7	60.7	61.4	62.2	63.4	64.7	64.9	64.2
65°	44.6	44.0	44.0	44.2	44.0	44.6	44.9	45.3	46.8	48.8	49.9



TEST NUMBER: P273412

CATALOG NUMBER: 0.05-03W-840-90ASYM-STD-UNV-AN-3F0

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
67.5°	31.9	31.5	31.5	31.5	31.5	31.7	31.5	31.9	32.6	33.9	35.4
70°	23.1	22.9	22.9	22.9	22.7	22.9	23.1	23.1	23.5	24.0	24.8
72.5°	18.7	18.5	18.5	18.3	18.0	18.0	17.8	17.6	17.4	17.6	18.0
75°	16.5	16.5	16.3	16.1	15.8	15.6	15.2	14.9	14.5	14.1	13.9
77.5°	15.8	15.8	15.6	15.2	14.9	14.5	14.3	13.6	13.0	12.5	11.9
80°	16.0	15.8	15.6	15.2	14.7	14.5	14.1	13.4	12.7	11.7	11.0
82.5°	16.3	16.3	16.1	15.6	15.0	14.7	14.3	13.6	12.7	11.7	10.6
85°	16.5	16.3	16.1	15.6	15.0	14.7	14.1	13.2	12.3	11.4	10.3
87.5°	15.6	15.4	15.2	14.7	13.9	13.8	13.2	12.3	11.6	10.5	9.5
90°	14.1	13.8	13.6	13.0	12.5	12.1	11.7	10.8	10.1	9.4	8.4
92.5°	11.9	11.7	11.6	11.0	10.6	10.3	9.9	9.2	8.6	8.1	7.5
95°	9.9	9.7	9.5	9.2	8.8	8.6	8.3	7.7	7.3	6.8	6.4
97.5°	8.3	8.1	7.9	7.7	7.3	7.2	7.0	6.6	6.2	5.9	5.5
100°	7.0	7.0	6.8	6.6	6.2	6.1	5.9	5.7	5.3	5.0	4.8
102.5°	6.1	6.1	5.9	5.7	5.5	5.3	5.1	5.0	4.6	4.2	4.0
105°	5.5	5.3	5.3	5.1	5.0	4.8	4.6	4.2	3.9	3.7	3.3
107.5°	5.1	5.0	5.0	4.8	4.4	4.4	4.2	3.9	3.5	3.1	2.9
110°	4.8	4.8	4.6	4.4	4.2	4.0	3.9	3.7	3.1	2.8	2.4
112.5°	4.6	4.6	4.4	4.2	4.0	3.9	3.7	3.3	2.9	2.6	2.0
115°	4.4	4.2	4.2	4.0	3.7	3.5	3.3	2.9	2.6	2.0	1.7
117.5°	3.9	3.9	3.9	3.5	3.3	3.1	2.9	2.6	2.2	1.7	1.3
120°	3.5	3.3	3.3	3.1	2.8	2.6	2.6	2.2	1.7	1.3	0.9
122.5°	2.9	2.8	2.8	2.6	2.4	2.2	2.0	1.7	1.3	0.9	0.7
125°	2.2	2.2	2.2	2.0	1.8	1.7	1.5	1.3	0.9	0.7	0.4
127.5°	1.8	1.7	1.7	1.5	1.3	1.3	1.1	0.9	0.6	0.4	0.4
130°	1.3	1.3	1.1	1.1	0.9	0.7	0.6	0.4	0.4	0.4	0.4
132.5°	0.7	0.7	0.7	0.6	0.4	0.4	0.4	0.4	0.4	0.4	0.4
135°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
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: P273412

CATALOG NUMBER: 0.05-03W-840-90ASYM-STD-UNV-AN-3F0

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



TEST NUMBER: P273412

CATALOG NUMBER: 0.05-03W-840-90ASYM-STD-UNV-AN-3F0

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	153.6	153.6	153.6	153.6	153.6	153.6	153.6	153.6	153.6	153.6	153.6
1°	171.1	167.0	165.6	164.5	163.2	161.3	160.2	159.0	156.6	154.6	152.2
2°	184.6	179.5	176.9	174.0	172.2	169.2	166.5	163.0	158.8	154.6	149.8
3°	195.8	190.3	186.5	182.4	180.2	176.6	172.0	166.8	160.6	154.2	147.0
4°	204.6	199.1	194.7	189.9	187.4	183.3	177.3	170.5	162.1	153.8	144.5
5°	211.0	206.1	201.7	196.5	193.8	189.6	182.2	173.4	163.5	152.9	141.5
6°	215.4	211.0	207.0	202.2	199.5	195.1	186.8	176.7	165.0	152.4	138.4
7°	218.4	214.7	211.2	207.0	204.1	200.0	191.0	179.9	166.1	151.4	135.3
8°	220.6	217.3	214.3	210.7	208.1	204.1	194.9	182.8	167.2	150.3	132.2
9°	222.0	218.9	216.5	213.2	211.0	207.5	198.2	185.0	167.8	148.9	128.5
10°	223.9	220.4	218.2	215.4	213.4	210.5	201.3	187.4	168.5	147.2	124.9
11°	225.7	221.8	219.6	217.1	215.2	212.7	203.9	189.4	169.0	145.6	121.0
12°	227.3	223.3	221.1	218.5	216.9	214.3	206.1	191.4	169.6	143.9	117.3
13°	229.4	224.6	222.4	220.0	218.2	215.8	208.1	193.2	170.0	142.1	113.5
14°	231.0	226.6	223.7	221.1	219.5	217.1	209.7	195.1	170.1	140.1	109.6
15°	232.7	228.3	225.0	222.0	220.4	218.0	211.2	196.4	170.3	138.1	105.6
16°	234.3	229.9	226.2	222.9	221.5	219.1	212.5	197.6	170.3	135.9	101.6
17°	236.0	231.7	227.5	224.0	222.6	220.4	213.6	198.9	170.1	133.3	97.4
18°	237.4	233.2	229.4	225.3	223.9	221.5	214.7	200.0	169.8	130.5	93.5
19°	238.2	234.5	230.6	226.8	224.8	222.6	215.8	201.1	169.2	127.8	89.3
20°	238.5	235.6	231.9	227.9	225.5	223.3	216.7	202.0	168.5	124.7	85.1
21°	238.7	236.5	232.8	229.0	226.6	224.2	217.6	202.8	167.8	121.6	81.2
22°	238.9	237.1	234.1	230.3	227.5	225.1	218.5	203.9	167.4	118.6	77.4
23°	238.5	237.2	234.7	231.0	228.6	225.9	219.5	204.8	166.7	115.9	73.5
24°	238.0	237.4	235.4	231.9	229.7	226.8	220.4	205.5	165.7	112.4	69.9
25°	237.6	237.4	235.6	232.5	230.6	227.9	220.9	206.1	164.6	109.1	66.4
26°	236.9	237.2	236.0	233.4	231.4	228.6	221.7	206.4	163.2	105.6	62.9
27°	235.8	236.7	236.3	234.3	232.3	229.7	222.6	206.8	161.5	101.9	59.8
28°	234.5	236.1	236.5	235.0	233.2	230.6	223.7	207.5	159.9	98.3	56.7
29°	232.8	235.2	236.1	235.6	234.3	231.9	224.6	208.5	158.0	95.2	53.9
30°	230.5	233.9	235.8	236.0	235.0	232.8	225.5	208.8	156.4	91.7	51.5
32.5°	222.0	228.8	233.2	236.5	236.7	235.2	228.3	210.1	151.4	83.2	45.8
35°	209.2	219.5	227.9	234.7	236.5	237.4	231.7	211.6	146.3	75.9	40.5
37.5°	194.2	205.3	218.2	229.4	233.8	236.5	234.5	212.9	140.1	68.9	37.0
40°	175.8	188.3	203.5	219.8	226.2	232.8	235.6	213.2	133.5	63.1	33.9
42.5°	156.8	169.4	185.5	204.8	214.5	224.4	233.9	211.9	125.6	58.1	31.5
45°	139.2	150.0	165.7	187.0	198.6	211.6	228.4	207.9	117.7	54.1	29.7
47.5°	124.7	131.8	145.4	166.7	179.3	195.4	220.6	202.4	109.3	50.1	28.1
50°	114.4	117.5	126.7	144.8	157.1	174.5	208.6	196.5	101.8	45.8	26.0
52.5°	106.0	106.2	110.6	123.2	134.4	151.3	191.8	188.3	95.7	42.4	24.0
55°	96.8	95.5	97.0	104.7	112.4	126.1	169.2	178.2	91.1	39.6	21.8
57.5°	86.7	84.3	84.3	88.2	93.0	103.2	140.8	163.2	87.1	37.4	20.0
60°	74.8	72.1	71.1	73.2	75.9	82.9	114.2	142.6	82.5	35.9	18.5
62.5°	62.0	59.4	58.5	59.2	60.5	65.5	88.2	117.7	76.3	34.3	17.1
65°	49.3	47.1	45.8	46.2	46.8	50.6	66.0	90.6	67.5	32.1	15.8



TEST NUMBER: P273412

CATALOG NUMBER: 0.05-03W-840-90ASYM-STD-UNV-AN-3F0

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
67.5°	36.7	36.3	35.6	35.8	36.5	38.0	48.6	65.6	55.4	29.2	14.1
70°	26.0	27.0	27.3	27.5	27.7	28.6	34.8	45.7	41.3	24.6	12.3
72.5°	18.5	19.4	20.5	21.1	21.3	21.6	25.1	31.2	29.2	19.1	9.7
75°	14.1	14.5	15.2	16.3	16.3	16.7	18.3	21.1	19.8	13.4	7.3
77.5°	11.6	11.6	11.9	12.7	12.8	13.0	13.8	14.7	13.0	9.0	5.0
80°	10.5	10.1	9.9	10.1	10.3	10.3	10.5	10.1	8.6	5.9	3.1
82.5°	9.7	9.2	8.6	8.4	8.3	8.1	7.9	7.0	5.7	3.5	1.7
85°	9.4	8.4	7.7	7.2	7.0	6.6	6.1	5.0	3.7	2.0	0.9
87.5°	8.6	7.7	7.0	6.2	5.9	5.5	4.6	3.5	2.2	1.1	0.4
90°	7.7	7.0	6.2	5.3	5.0	4.6	3.7	2.4	1.3	0.4	0.4
92.5°	6.8	6.2	5.5	4.8	4.2	3.9	2.8	1.7	0.7	0.4	0.4
95°	5.9	5.5	4.8	4.0	3.7	3.1	2.2	1.1	0.4	0.4	0.4
97.5°	5.1	4.8	4.0	3.3	2.9	2.6	1.5	0.6	0.4	0.4	0.4
100°	4.4	4.0	3.5	2.8	2.4	1.8	0.9	0.4	0.4	0.4	0.4
102.5°	3.7	3.3	2.8	2.0	1.7	1.3	0.6	0.4	0.4	0.4	0.4
105°	2.9	2.6	2.2	1.5	1.1	0.7	0.4	0.4	0.4	0.4	0.4
107.5°	2.6	2.0	1.7	1.1	0.7	0.6	0.4	0.4	0.4	0.4	0.4
110°	2.0	1.7	1.1	0.7	0.4	0.4	0.4	0.4	0.4	0.4	0.4
112.5°	1.7	1.1	0.7	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
115°	1.3	0.7	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
117.5°	0.9	0.6	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
120°	0.6	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
122.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
125°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
127.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
130°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
132.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
135°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
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: P273412

CATALOG NUMBER: 0.05-03W-840-90ASYM-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: P273412

CATALOG NUMBER: 0.05-03W-840-90ASYM-STD-UNV-AN-3F0

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	153.6	153.6	153.6	153.6	153.6	153.6	153.6	153.6	153.6	153.6	153.6
1°	149.1	146.1	143.6	142.5	141.0	139.3	138.8	134.9	133.3	132.0	130.5
2°	144.5	139.5	134.9	133.8	130.4	126.7	124.5	119.0	115.7	113.3	110.6
3°	139.9	132.6	126.3	124.1	119.7	114.2	110.4	103.8	99.2	95.9	92.2
4°	134.8	125.6	117.5	114.2	109.3	102.3	97.2	89.8	84.3	80.5	76.5
5°	129.8	118.8	108.9	104.9	99.2	91.1	85.1	77.6	71.7	67.7	63.4
6°	124.7	111.8	100.5	95.7	89.8	80.9	74.4	66.7	60.9	56.8	53.0
7°	119.4	104.9	92.6	87.3	81.2	71.9	64.9	57.8	52.1	48.4	44.4
8°	114.2	98.3	85.1	79.6	73.3	63.8	57.0	50.2	44.6	41.1	38.1
9°	108.9	91.9	77.7	72.1	66.0	56.5	50.1	43.5	38.9	35.9	33.2
10°	103.6	85.6	71.1	65.5	59.6	50.4	44.0	38.5	34.3	31.7	29.5
11°	98.5	79.8	65.1	59.2	53.7	44.7	39.2	34.3	30.6	28.4	26.6
12°	93.3	74.1	59.6	53.9	48.4	40.3	35.2	31.0	27.9	26.0	24.4
13°	88.4	68.8	54.5	49.1	43.8	36.5	31.9	28.2	25.7	24.0	22.6
14°	83.4	63.4	50.1	44.4	40.0	33.4	29.3	26.0	23.8	22.4	21.1
15°	78.8	58.9	45.5	40.7	36.7	30.6	27.1	24.2	22.4	20.9	19.8
16°	74.3	54.5	41.8	37.6	33.7	28.4	25.1	22.7	21.1	19.6	18.7
17°	69.7	50.6	38.7	34.7	31.2	26.4	23.7	21.5	19.8	18.5	17.6
18°	65.6	46.9	35.8	32.1	29.0	24.8	22.2	20.2	18.7	17.6	16.5
19°	61.6	43.5	33.2	29.9	27.1	23.5	21.1	19.3	17.8	16.5	15.6
20°	57.8	40.5	31.0	28.1	25.5	22.2	20.0	18.2	16.7	15.6	14.7
21°	54.3	37.8	29.2	26.4	24.0	21.1	19.1	17.2	15.8	14.7	13.9
22°	51.0	35.4	27.5	24.9	22.9	20.2	18.2	16.3	15.0	13.9	13.2
23°	47.7	33.4	26.0	23.7	21.8	19.1	17.2	15.4	14.3	13.4	12.7
24°	44.6	31.5	24.8	22.6	20.9	18.3	16.3	14.7	13.6	12.7	11.9
25°	42.0	29.9	23.5	21.6	19.8	17.4	15.6	14.1	13.0	12.1	11.4
26°	39.8	28.2	22.4	20.7	19.1	16.5	14.9	13.4	12.5	11.6	10.8
27°	37.6	27.0	21.5	19.8	18.2	15.8	14.1	12.8	11.9	11.0	10.3
28°	35.8	25.7	20.5	18.9	17.4	15.2	13.6	12.3	11.4	10.5	9.7
29°	33.9	24.6	19.8	18.2	16.7	14.5	13.0	11.7	10.8	9.9	9.2
30°	32.3	23.5	18.9	17.4	16.0	13.9	12.5	11.2	10.3	9.4	8.4
32.5°	29.0	21.3	17.2	15.8	14.5	12.7	11.4	10.1	9.0	8.1	7.5
35°	26.2	19.4	15.6	14.3	13.2	11.6	10.1	9.0	7.9	7.2	6.6
37.5°	24.0	17.8	14.3	13.0	12.1	10.5	9.2	7.9	7.0	6.2	5.7
40°	22.0	16.5	13.2	12.1	11.0	9.5	8.1	7.0	6.1	5.5	5.0
42.5°	20.7	15.4	12.1	11.2	10.3	8.6	7.3	6.2	5.3	4.8	4.2
45°	19.6	14.5	11.4	10.3	9.4	7.9	6.6	5.5	4.8	4.2	3.7
47.5°	18.5	13.6	10.6	9.5	8.6	7.2	5.9	5.0	4.2	3.7	3.3
50°	17.4	12.7	9.9	8.8	7.9	6.4	5.3	4.4	3.7	3.1	2.8
52.5°	16.1	11.7	9.0	8.1	7.2	5.9	4.8	3.9	3.1	2.8	2.6
55°	14.9	10.8	8.3	7.3	6.6	5.3	4.2	3.3	2.6	2.4	2.2
57.5°	13.2	9.7	7.3	6.6	5.9	4.8	3.5	2.8	2.2	2.0	2.0
60°	11.9	8.6	6.4	5.9	5.3	4.0	2.9	2.2	1.8	1.7	1.7
62.5°	10.6	7.5	5.7	5.1	4.6	3.5	2.4	1.8	1.7	1.5	1.3
65°	9.4	6.4	5.0	4.4	3.9	2.8	1.8	1.5	1.3	1.1	1.1



TEST NUMBER: P273412

CATALOG NUMBER: 0.05-03W-840-90ASYM-STD-UNV-AN-3F0

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
67.5°	8.1	5.3	4.0	3.5	3.1	2.0	1.5	1.1	0.9	0.9	0.9
70°	6.6	4.4	3.1	2.8	2.2	1.5	1.1	0.9	0.9	0.9	0.9
72.5°	5.1	3.3	2.4	2.0	1.5	1.1	0.9	0.9	0.9	0.9	0.9
75°	3.7	2.4	1.5	1.3	0.9	0.7	0.7	0.7	0.9	0.9	0.9
77.5°	2.6	1.7	0.9	0.7	0.7	0.7	0.7	0.7	0.9	0.9	0.9
80°	1.7	0.9	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.9	0.9
82.5°	0.9	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.7
85°	0.4	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0.7
87.5°	0.4	0.4	0.6	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.7
90°	0.4	0.4	0.4	0.6	0.6	0.6	0.6	0.6	0.6	0.7	0.7
92.5°	0.4	0.4	0.4	0.4	0.4	0.6	0.6	0.6	0.6	0.6	0.6
95°	0.4	0.4	0.4	0.4	0.4	0.4	0.6	0.6	0.6	0.6	0.6
97.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.6	0.6	0.6	0.6
100°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.6	0.6
102.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
105°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
107.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
110°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
112.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
115°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
117.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
120°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
122.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
125°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
127.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
130°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
132.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
135°	0.4	0.4	0.4	0.6	0.4	0.6	0.6	0.6	0.4	0.4	0.4
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: P273412

CATALOG NUMBER: 0.05-03W-840-90ASYM-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: P273412

CATALOG NUMBER: 0.05-03W-840-90ASYM-STD-UNV-AN-3F0

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	153.6	153.6	153.6	153.6	153.6	153.6	153.6	153.6
1°	132.4	129.6	128.9	124.9	125.0	123.9	124.5	124.5
2°	111.1	107.8	106.5	102.7	102.3	100.8	101.0	100.8
3°	91.9	88.4	86.9	83.2	82.5	81.0	81.0	80.9
4°	75.4	71.9	70.2	67.3	66.4	64.9	64.7	64.2
5°	62.0	58.7	57.0	54.8	53.7	52.4	52.3	51.9
6°	51.2	48.4	46.8	44.7	43.6	42.5	42.5	42.2
7°	42.7	40.3	39.1	37.6	36.7	35.8	35.6	35.4
8°	36.5	33.9	33.4	32.3	31.5	30.8	30.6	30.3
9°	31.9	29.7	29.3	28.4	27.7	27.1	27.0	26.8
10°	28.2	26.6	26.2	25.5	24.9	24.4	24.4	24.0
11°	25.3	24.2	23.8	23.3	22.7	22.4	22.4	22.2
12°	23.3	22.4	22.0	21.6	21.1	20.7	20.7	20.5
13°	21.6	20.7	20.5	20.2	19.6	19.3	19.3	19.1
14°	20.2	19.4	19.1	18.9	18.3	18.2	18.0	17.8
15°	19.1	18.2	18.0	17.6	17.1	16.9	16.7	16.5
16°	17.8	17.1	16.7	16.3	16.0	15.8	15.6	15.6
17°	16.7	16.0	15.8	15.6	15.0	14.9	14.7	14.7
18°	15.8	15.0	14.9	14.7	14.1	13.9	13.9	13.8
19°	14.9	14.3	13.9	13.8	13.4	13.2	13.0	13.0
20°	14.1	13.6	13.2	13.0	12.7	12.5	12.5	12.3
21°	13.4	12.8	12.5	12.3	11.9	11.7	11.7	11.6
22°	12.7	12.1	11.9	11.7	11.4	11.2	11.0	11.0
23°	12.1	11.6	11.2	11.0	10.6	10.5	10.3	10.3
24°	11.4	10.8	10.6	10.5	10.1	9.7	9.7	9.5
25°	10.8	10.3	9.9	9.7	9.4	9.2	9.0	9.0
26°	10.3	9.5	9.4	9.2	8.8	8.6	8.4	8.4
27°	9.5	9.0	8.8	8.6	8.3	8.1	7.9	7.9
28°	9.0	8.4	8.3	8.1	7.7	7.5	7.5	7.3
29°	8.4	7.9	7.7	7.5	7.3	7.2	7.0	7.0
30°	7.9	7.5	7.3	7.2	7.0	6.6	6.6	6.4
32.5°	7.0	6.4	6.2	6.2	5.9	5.7	5.7	5.5
35°	6.1	5.5	5.3	5.3	5.1	5.0	5.0	4.8
37.5°	5.1	4.8	4.8	4.6	4.4	4.4	4.2	4.4
40°	4.6	4.2	4.0	4.0	3.9	3.9	3.9	3.9
42.5°	3.9	3.7	3.7	3.5	3.5	3.5	3.5	3.5
45°	3.5	3.3	3.3	3.3	3.3	3.3	3.3	3.3
47.5°	3.1	2.9	2.9	2.9	2.9	2.9	2.9	2.9
50°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
52.5°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
55°	2.2	2.2	2.0	2.0	2.0	2.0	2.0	2.0
57.5°	1.8	1.8	1.7	1.7	1.7	1.7	1.5	1.5
60°	1.5	1.3	1.3	1.3	1.1	1.1	1.1	1.1
62.5°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
65°	0.9	0.9	1.1	1.1	1.1	1.1	1.1	1.1



TEST NUMBER: P273412

CATALOG NUMBER: 0.05-03W-840-90ASYM-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	1.1	1.1	1.1	1.1
70°	0.9	0.9	1.1	1.1	1.1	1.1	1.1	1.1
72.5°	0.9	0.9	0.9	0.9	1.1	1.1	1.1	1.1
75°	0.9	0.9	0.9	0.9	0.9	1.1	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°	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.7
95°	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.7
97.5°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
100°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
102.5°	0.4	0.6	0.6	0.6	0.6	0.6	0.6	0.6
105°	0.4	0.4	0.4	0.4	0.6	0.6	0.6	0.6
107.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
110°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
112.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
115°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
117.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
120°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
122.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
125°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
127.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
130°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
132.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
135°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
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: P273412

CATALOG NUMBER: 0.05-03W-840-90ASYM-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)