

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: SURE-LITES

Report Number: P22452

Luminaire Tested: **LEM**

Test Date: 07/02/12

Test Information

Test Method: LM-79-08
Report Number: P22452
Test Lab: INNOVATION CENTER P2
Test Date: 07/02/12
Issue Date: 03/03/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: SURE-LITES
Catalog Number: LEM
Description: SURELITES EMERGENCY LIGHT WITH WAHCHUN OPTIC. TEST RAN AT .300mA DC.
Light Source: (1) 5000K LED
NICHIA
Ballast/Driver: (1) AGILENT DC POWER SUPPLY
AGILENT IN0011

Summary

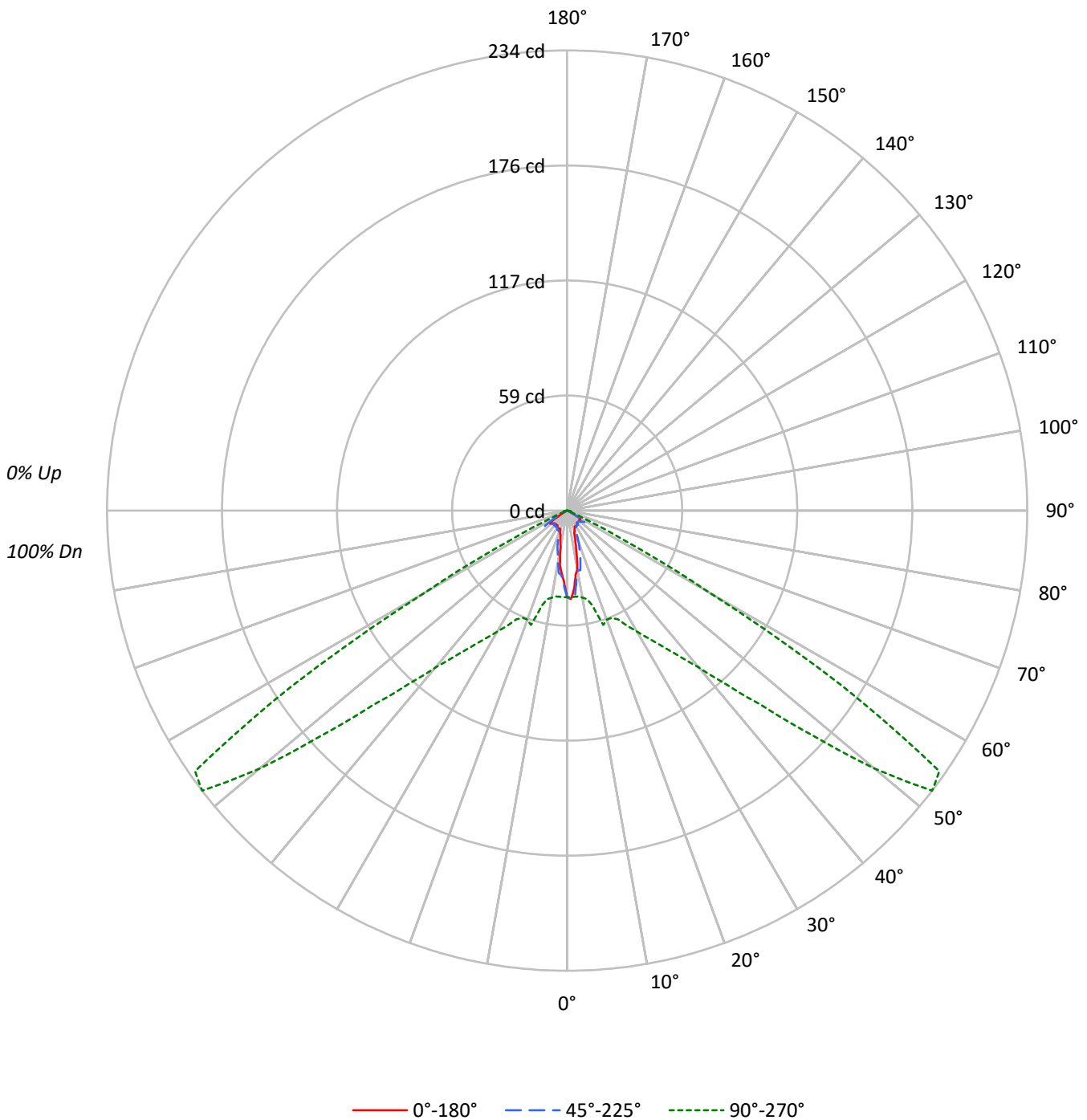
Lumens per Lamp: N/A
Luminaire Lumens: 83.3 lumens
Efficiency: N/A
Efficacy: 83.3 lumens/watt
Spacing Criteria (0/90/45): 0.37 / 3.21 / 0.55
Luminous Opening: Vertical Cylinder (Dia: 0.08' x H: 0.08')
CIE Type: Direct

Input Watts (W): 1
Input Voltage (V): NR
Input Current (A_{in}): 0.0.2996
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): DC
Stabilization Time: NR
Operation Time: 3 HR
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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	111	106	103	100	108	104	101	98	100	97	95	96	94	92	93	91	89	87
2	101	94	88	83	99	92	86	82	88	84	80	85	81	78	82	79	76	74
3	92	83	75	69	90	81	74	68	78	72	67	75	70	66	73	68	65	63
4	84	73	64	58	82	71	64	58	69	62	57	67	61	56	65	59	55	53
5	77	65	56	49	75	63	55	49	61	54	48	59	53	48	58	52	47	45
6	71	58	49	42	69	57	48	42	55	47	42	53	47	42	52	46	41	39
7	65	52	43	37	64	51	43	37	49	42	37	48	41	36	47	41	36	34
8	61	47	38	33	59	46	38	32	45	38	32	44	37	32	43	36	32	30
9	56	43	35	29	55	42	34	29	41	34	29	40	33	29	39	33	28	27
10	53	39	31	26	51	39	31	26	38	31	26	37	30	26	36	30	26	24

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	86836	86836	86836
5°	71301	78431	57041
10°	49097	73646	31095
15°	24375	76171	19805
20°	15786	84673	14351
25°	12297	83347	13663
30°	11820	93250	13134
35°	11463	106991	11463
40°	9964	129538	11210
45°	9822	171887	11050
50°	9757	248805	12196
55°	9767	282012	12208
60°	6157	103439	1231
65°	1252	11266	1252
70°	1283	2566	0
75°	0	1326	0
80°	0	2765	0
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	3.5	4.2
10°-20°	7.6	9.2
20°-30°	9.6	11.6
30°-40°	12.6	15.1
40°-50°	18.8	22.6
50°-60°	26.7	32.1
60°-70°	3.9	4.6
70°-80°	0.6	0.7
80°-90°	0.1	0.1
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
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°	20.7	24.9
0°-40°	33.3	40.0
0°-60°	78.9	94.6
0°-90°	83.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	83.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	44	44	44	44	44	
5°	40	44	44	33	32	3
15°	16	26	50	19	13	5
25°	9	10	61	11	10	4
35°	9	9	84	10	9	5
45°	8	8	140	10	9	6
55°	8	10	231	14	10	7
65°	1	1	9	1	1	2
75°	0	0	1	0	0	0
85°	0	0	0	0	0	0
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	2.5°	5°	7.5°	10°	12.5°	15°	17.5°	20°	22.5°	25°
0°	44	44	44	44	44	44	44	44	44	44	44
2.5°	45	45	45	45	45	45	45	45	45	45	45
5°	40	40	40	40	40	40	40	40	41	41	42
7.5°	33	32	33	33	32	32	33	32	33	33	33
10°	30	30	29	30	30	30	30	30	30	31	31
12.5°	22	21	22	22	22	22	22	23	24	24	24
15°	16	15	15	15	15	16	16	16	17	17	17
17.5°	12	12	12	12	12	13	13	13	13	13	14
20°	11	10	11	11	11	11	11	11	11	11	12
22.5°	10	10	10	10	10	10	10	10	10	10	10
25°	9	9	9	9	9	9	9	9	10	10	10
27.5°	9	9	9	9	9	9	9	9	9	9	9
30°	9	9	9	9	9	9	9	9	9	9	9
32.5°	9	9	9	9	9	9	9	9	9	9	9
35°	9	9	9	9	9	8	8	8	8	8	8
37.5°	8	8	8	8	8	8	8	8	8	8	8
40°	8	8	8	8	8	8	8	8	8	8	8
42.5°	8	8	8	8	8	8	8	8	8	8	8
45°	8	8	8	8	8	8	8	8	8	8	8
47.5°	8	8	8	8	8	8	8	8	8	8	8
50°	8	8	8	8	8	8	8	8	9	8	8
52.5°	8	8	8	8	8	8	9	9	9	8	8
55°	8	8	8	8	8	9	9	9	8	8	8
57.5°	8	8	8	8	8	8	8	8	8	8	8
60°	5	5	6	6	6	5	5	6	5	5	5
62.5°	2	2	2	2	2	2	2	2	2	2	2
65°	1	1	1	1	1	1	1	1	1	1	1
67.5°	1	1	1	1	1	1	1	1	1	1	1
70°	1	1	1	1	0	1	1	1	1	1	1
72.5°	0	0	0	0	0	0	0	0	0	0	0
75°	0	0	0	0	0	0	0	0	0	0	0
77.5°	0	0	0	0	0	0	0	0	0	0	0
80°	0	0	0	0	0	0	0	0	0	0	0
82.5°	0	0	0	0	0	0	0	0	0	0	0
85°	0	0	0	0	0	0	0	0	0	0	0
87.5°	0	0	0	0	0	0	0	0	0	0	0
90°	0	0	0	0	0	0	0	0	0	0	0



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CANDELA DISTRIBUTION (continued):

	27.5°	30°	32.5°	35°	37.5°	40°	42.5°	45°	47.5°	50°	52.5°
0°	44	44	44	44	44	44	44	44	44	44	44
2.5°	45	45	45	45	45	45	45	45	45	45	45
5°	42	43	43	43	44	44	44	44	45	45	45
7.5°	33	33	34	34	34	35	36	36	38	39	41
10°	31	31	31	31	31	31	31	31	32	32	32
12.5°	25	26	27	27	28	29	30	31	31	32	32
15°	18	19	20	21	22	23	24	26	28	30	31
17.5°	14	15	15	16	17	18	19	21	22	25	27
20°	12	12	13	13	13	14	16	17	19	20	22
22.5°	10	10	10	10	10	11	12	12	14	16	18
25°	10	10	10	10	10	10	10	10	11	12	14
27.5°	9	9	9	9	9	9	10	10	10	10	11
30°	9	9	9	9	9	9	9	9	10	10	10
32.5°	9	9	9	9	9	9	9	9	9	10	10
35°	8	8	8	9	9	9	9	9	9	9	9
37.5°	8	8	8	8	8	8	8	9	9	9	9
40°	8	8	8	8	8	8	8	8	9	9	9
42.5°	8	8	8	8	8	8	8	8	8	9	9
45°	7	8	8	8	8	8	8	8	8	9	9
47.5°	8	8	8	8	8	8	8	8	9	9	9
50°	8	8	8	8	8	8	8	9	9	9	9
52.5°	8	8	8	8	9	9	9	9	10	10	10
55°	8	8	8	9	9	9	10	10	11	12	12
57.5°	8	8	8	8	9	9	10	11	12	13	14
60°	6	6	6	6	6	6	7	7	8	8	9
62.5°	2	2	2	2	2	2	2	2	3	3	3
65°	1	1	1	1	1	1	1	1	1	1	1
67.5°	1	1	1	1	1	1	1	1	1	1	1
70°	1	1	1	1	1	1	1	1	1	1	1
72.5°	0	1	1	1	1	1	1	1	1	1	1
75°	1	1	1	1	1	1	1	0	1	1	1
77.5°	0	0	1	1	1	0	0	0	0	0	0
80°	0	0	0	0	1	0	0	0	0	0	0
82.5°	0	0	0	0	0	0	0	0	0	0	0
85°	0	0	0	0	0	0	0	0	0	0	0
87.5°	0	0	0	0	0	0	0	0	0	0	0
90°	0	0	0	0	0	0	0	0	0	0	0



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CANDELA DISTRIBUTION (continued):

	55°	57.5°	60°	62.5°	65°	67.5°	70°	72.5°	75°	77.5°	80°
0°	44	44	44	44	44	44	44	44	44	44	44
2.5°	45	45	44	44	44	44	44	44	44	44	44
5°	44	44	44	44	44	44	44	44	44	44	44
7.5°	41	43	43	44	44	44	44	44	44	44	44
10°	33	35	38	40	42	43	44	45	45	45	44
12.5°	32	32	32	34	37	40	43	44	46	46	46
15°	32	33	33	33	33	35	40	43	46	48	49
17.5°	30	33	35	36	37	38	40	45	50	54	57
20°	25	29	33	37	39	41	41	43	48	53	57
22.5°	20	23	26	31	35	39	40	41	44	50	56
25°	17	19	22	25	31	37	41	42	43	48	56
27.5°	12	16	19	22	26	33	39	43	44	48	56
30°	10	12	16	20	23	28	36	43	47	49	57
32.5°	10	10	12	17	21	25	32	42	49	53	59
35°	10	10	10	12	18	23	28	38	49	56	62
37.5°	9	10	10	11	13	20	25	33	47	59	67
40°	9	10	10	10	11	16	23	31	44	61	74
42.5°	9	9	10	10	11	12	20	28	40	62	82
45°	9	9	10	10	11	12	15	26	39	61	92
47.5°	9	10	10	10	11	12	13	23	39	62	100
50°	10	10	10	11	12	13	14	19	41	72	112
52.5°	10	11	12	12	13	15	17	23	39	83	124
55°	13	14	14	15	16	18	20	25	44	71	126
57.5°	15	16	17	18	19	20	22	25	36	57	83
60°	11	11	12	14	15	16	17	19	23	30	46
62.5°	3	4	5	5	6	7	8	9	10	12	15
65°	1	1	1	1	1	2	2	3	3	4	5
67.5°	1	1	1	1	1	1	1	1	1	1	2
70°	1	1	1	1	1	1	1	1	1	1	1
72.5°	1	1	1	1	1	1	1	1	1	1	1
75°	1	1	1	1	1	1	1	1	1	1	1
77.5°	1	1	0	0	0	1	1	1	1	1	1
80°	0	0	0	0	0	0	0	1	1	1	1
82.5°	0	0	0	0	0	0	0	0	0	0	0
85°	0	0	0	0	0	0	0	0	0	0	0
87.5°	0	0	0	0	0	0	0	0	0	0	0
90°	0	0	0	0	0	0	0	0	0	0	0



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CANDELA DISTRIBUTION (continued):

	82.5°	85°	87.5°	90°	92.5°	95°	97.5°	100°	102.5°	105°	107.5°
0°	44	44	44	44	44	44	44	44	44	44	44
2.5°	44	44	44	44	43	43	43	42	42	41	41
5°	44	44	44	44	43	42	42	40	39	38	38
7.5°	44	44	45	44	44	42	40	38	37	35	34
10°	44	45	45	45	44	41	39	36	34	33	32
12.5°	46	46	46	46	44	41	38	35	33	33	33
15°	49	49	50	50	48	46	42	41	40	41	41
17.5°	59	60	61	61	59	54	49	47	46	46	45
20°	59	60	60	59	56	50	45	43	43	42	40
22.5°	59	60	60	59	54	47	42	41	41	40	35
25°	60	63	62	61	56	48	42	41	41	37	32
27.5°	63	67	67	66	60	50	44	43	41	36	28
30°	66	72	73	71	64	53	47	45	41	33	26
32.5°	68	76	80	77	68	57	50	47	41	31	24
35°	71	82	87	84	73	60	54	49	39	28	21
37.5°	75	88	97	93	80	66	59	50	37	26	18
40°	82	94	108	104	90	75	65	51	34	24	14
42.5°	92	105	122	120	102	86	72	50	32	21	13
45°	110	123	140	140	121	105	83	50	31	17	13
47.5°	133	153	167	169	154	130	94	54	29	17	14
50°	161	198	205	204	203	165	112	66	30	20	17
52.5°	184	236	241	234	248	203	139	80	42	27	22
55°	171	209	226	231	212	191	143	83	52	32	28
57.5°	126	141	160	166	144	127	97	69	43	31	27
60°	61	72	81	84	73	60	46	35	24	18	16
62.5°	22	28	32	32	29	23	16	12	9	8	6
65°	7	8	9	9	8	7	4	4	3	2	2
67.5°	2	2	3	2	2	2	2	1	1	1	1
70°	1	2	2	2	2	1	1	1	1	1	1
72.5°	1	1	1	1	1	1	1	1	1	1	1
75°	1	1	1	1	1	1	1	1	1	1	1
77.5°	1	1	2	2	1	1	1	1	1	1	1
80°	1	1	2	2	2	1	1	1	1	0	0
82.5°	0	1	1	1	1	1	0	0	0	0	0
85°	0	0	0	0	0	0	0	0	0	0	0
87.5°	0	0	0	0	0	0	0	0	0	0	0
90°	0	0	0	0	0	0	0	0	0	0	0



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CANDELA DISTRIBUTION (continued):

	110°	112.5°	115°	117.5°	120°	122.5°	125°	127.5°	130°	132.5°	135°
0°	44	44	44	44	44	44	44	44	44	44	44
2.5°	41	40	40	40	39	39	39	38	38	38	38
5°	37	36	35	35	34	34	34	33	33	33	33
7.5°	33	33	32	32	32	32	32	32	32	32	32
10°	32	32	32	32	32	31	31	30	29	28	27
12.5°	33	33	33	32	31	29	27	25	24	23	22
15°	41	39	36	33	30	27	25	23	22	20	19
17.5°	42	38	34	30	26	24	22	19	17	16	15
20°	36	30	26	23	20	17	15	13	13	12	12
22.5°	30	24	21	18	14	13	12	12	11	11	11
25°	25	21	18	13	12	11	11	11	11	11	11
27.5°	23	19	13	12	11	11	11	11	11	11	11
30°	21	14	12	11	11	11	11	11	10	10	10
32.5°	17	12	11	11	11	11	10	10	10	10	10
35°	14	12	11	11	11	10	10	10	10	10	10
37.5°	12	12	11	11	11	10	10	10	10	10	10
40°	12	12	11	11	11	10	10	10	10	10	10
42.5°	12	12	11	11	11	10	10	10	10	10	9
45°	13	12	11	11	11	11	10	10	10	10	10
47.5°	13	13	12	12	11	11	11	11	10	10	10
50°	15	14	14	13	13	12	12	12	11	11	11
52.5°	20	19	18	17	16	15	15	14	14	13	12
55°	25	24	22	21	20	19	18	17	16	15	14
57.5°	24	22	20	18	17	15	14	12	11	10	9
60°	14	11	9	8	7	6	5	4	4	3	3
62.5°	5	3	2	2	1	1	1	1	1	1	1
65°	1	1	1	1	1	1	1	1	1	1	1
67.5°	1	1	1	1	1	1	1	1	1	1	1
70°	1	1	1	1	1	1	1	1	1	1	1
72.5°	1	1	1	1	1	1	1	1	0	0	1
75°	1	1	1	0	0	1	0	0	0	0	0
77.5°	1	1	0	0	0	0	0	0	0	0	0
80°	0	0	0	0	0	0	0	0	0	0	0
82.5°	0	0	0	0	0	0	0	0	0	0	0
85°	0	0	0	0	0	0	0	0	0	0	0
87.5°	0	0	0	0	0	0	0	0	0	0	0
90°	0	0	0	0	0	0	0	0	0	0	0



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CANDELA DISTRIBUTION (continued):

	137.5°	140°	142.5°	145°	147.5°	150°	152.5°	155°	157.5°	160°	162.5°
0°	44	44	44	44	44	44	44	44	44	44	44
2.5°	38	38	37	37	37	36	36	37	36	36	36
5°	33	33	33	33	33	32	32	32	32	32	32
7.5°	31	31	31	30	30	29	29	29	29	28	28
10°	26	25	24	23	23	22	21	21	21	20	20
12.5°	20	20	19	19	18	18	18	18	18	17	17
15°	18	18	17	16	16	15	15	15	15	14	14
17.5°	14	14	14	14	14	13	13	13	13	13	13
20°	12	12	12	12	12	12	12	12	12	11	11
22.5°	11	11	11	11	11	11	11	11	11	11	11
25°	11	11	11	10	10	10	10	10	11	10	10
27.5°	10	10	10	10	10	10	10	10	10	10	10
30°	10	10	10	10	10	10	10	10	10	10	10
32.5°	10	10	10	10	10	10	10	10	10	10	9
35°	10	10	10	9	9	9	9	9	9	9	9
37.5°	9	9	9	9	9	9	9	9	9	9	9
40°	9	9	9	9	9	9	9	9	9	9	9
42.5°	9	9	9	9	9	9	9	9	9	9	9
45°	9	9	9	9	9	9	9	9	10	9	9
47.5°	10	10	9	9	9	9	9	10	10	10	10
50°	11	10	10	10	10	10	9	10	10	11	11
52.5°	12	11	11	11	10	10	10	10	11	11	11
55°	13	12	11	11	10	10	10	10	9	10	10
57.5°	8	8	7	6	6	6	6	5	5	5	5
60°	3	2	2	2	2	2	2	2	2	1	1
62.5°	1	1	1	1	1	1	1	1	1	1	1
65°	1	1	1	1	1	1	1	1	1	1	1
67.5°	1	1	1	1	1	1	1	1	1	1	1
70°	1	1	1	1	1	1	1	1	1	1	1
72.5°	1	1	1	1	0	0	0	0	1	1	0
75°	0	1	0	0	0	0	0	0	0	0	0
77.5°	0	0	0	0	0	0	0	0	0	0	0
80°	0	0	0	0	0	0	0	0	0	0	0
82.5°	0	0	0	0	0	0	0	0	0	0	0
85°	0	0	0	0	0	0	0	0	0	0	0
87.5°	0	0	0	0	0	0	0	0	0	0	0
90°	0	0	0	0	0	0	0	0	0	0	0



TEST NUMBER: P22452
 CATALOG NUMBER: LEM

CANDELA DISTRIBUTION (continued):

	165°	167.5°	170°	172.5°	175°	177.5°	180°
0°	44	44	44	44	44	44	44
2.5°	36	36	36	36	36	36	36
5°	32	32	32	32	32	32	32
7.5°	28	28	28	27	28	27	28
10°	19	19	19	19	19	19	19
12.5°	17	17	17	16	16	16	16
15°	14	14	13	13	13	13	13
17.5°	13	12	12	12	12	12	12
20°	11	11	11	11	11	11	10
22.5°	11	11	10	10	10	10	10
25°	10	10	10	10	10	10	10
27.5°	10	10	10	10	10	10	10
30°	10	10	10	10	10	10	10
32.5°	9	9	9	9	9	9	9
35°	9	9	9	9	9	9	9
37.5°	9	9	9	9	9	9	9
40°	9	9	9	9	9	9	9
42.5°	9	9	9	9	9	9	9
45°	9	9	9	9	9	9	9
47.5°	10	10	9	9	9	10	10
50°	11	11	10	10	10	10	10
52.5°	11	11	11	11	11	11	11
55°	10	9	10	10	10	10	10
57.5°	4	4	4	4	4	4	4
60°	1	1	1	1	1	1	1
62.5°	1	1	1	1	1	1	1
65°	1	1	1	1	1	1	1
67.5°	1	1	1	1	1	1	1
70°	0	0	0	0	0	0	0
72.5°	0	0	0	0	0	0	0
75°	0	0	0	0	0	0	0
77.5°	0	0	0	0	0	0	0
80°	0	0	0	0	0	0	0
82.5°	0	0	0	0	0	0	0
85°	0	0	0	0	0	0	0
87.5°	0	0	0	0	0	0	0
90°	0	0	0	0	0	0	0

(END OF REPORT)