

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: FAIL-SAFE

Report Number: P27271

Luminaire Tested: **MPBL-2-LD4-UNV-1DN-STD-40**

Test Date: 01/11/16

Test Information

Test Method: LM-79-08
Report Number: P27271
Test Lab: INNOVATION CENTER-P2
Test Date: 01/11/16
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: MPBL-2-LD4-UNV-1DN-STD-40
Description: FAILSAFE MPBL LED PATIENT BED LIGHT
Light Source: (42) 4000K NICHIA LEDS
2UT217042A8404A
Ballast/Driver: (1) OSRAM ELECTRONIC DRIVERS
OT25W

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1594.4 lumens
Efficiency: N/A
Efficacy: 91.1 lumens/watt
Spacing Criteria (0/90/45): 1.31 / 1.19 / 1.38
Luminous Opening: Rectangular w/ Sides (W: 2' x L: 0.42' x H: 0.29')
CIE Type: Direct

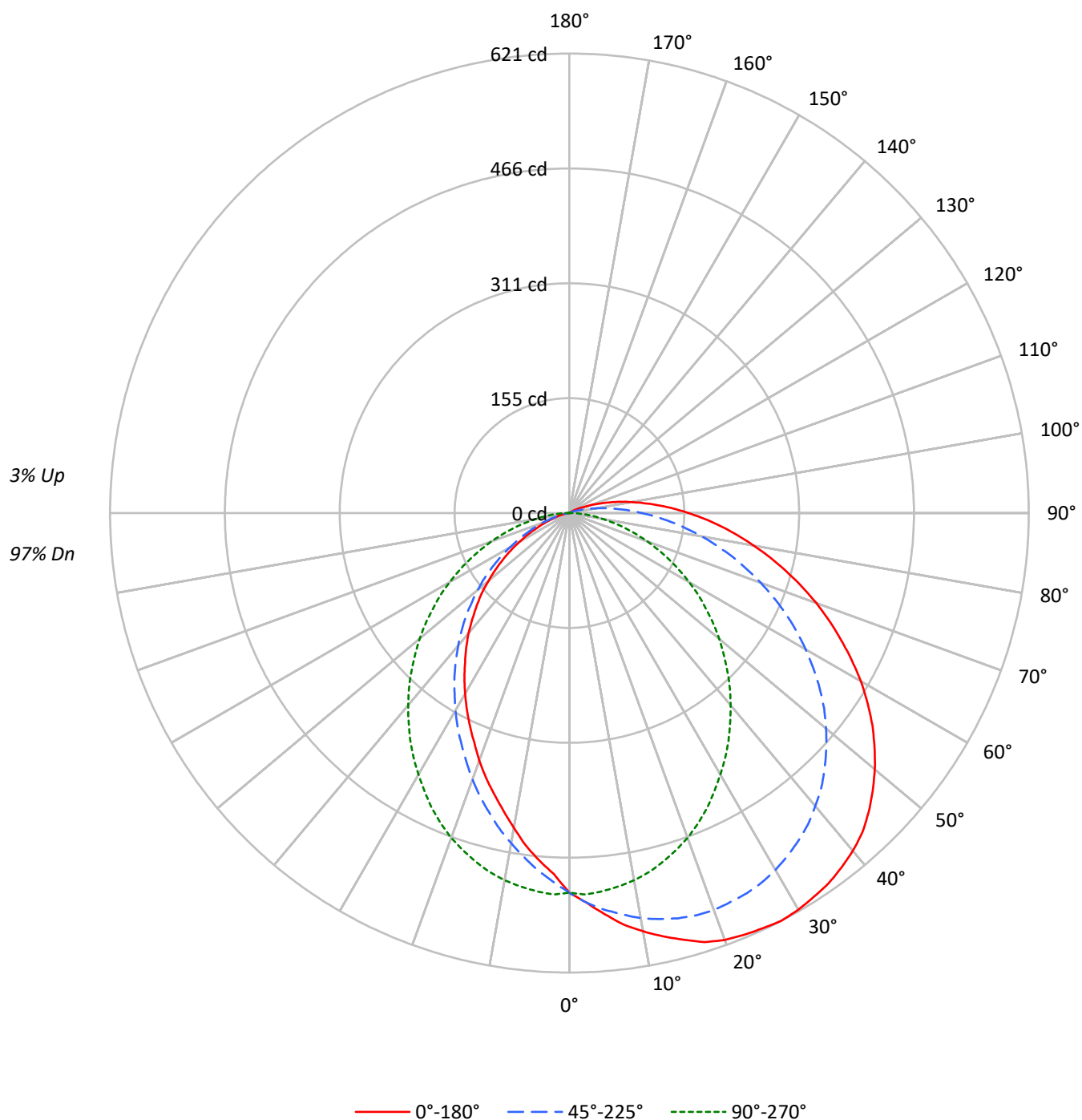
Input Watts (W): 17.5
Input Voltage (V): 120.01
Input Current (Ain): 0.14692
Voltage Rise (V): NR
Power Factor: 0.9956
Total Harmonic Distortion (THDi): 5.93%
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: 24 HR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RCR																	
0	118	118	118	118	115	115	115	115	109	109	109	104	104	104	99	99	99
1	107	101	97	92	104	99	94	90	94	90	87	89	86	84	85	83	81
2	97	88	80	74	94	86	79	73	81	76	71	78	73	69	74	70	67
3	88	77	68	61	85	75	67	61	71	65	59	68	62	58	65	60	56
4	80	68	59	52	78	66	58	51	63	56	50	61	54	49	58	53	48
5	74	61	51	45	71	59	51	44	57	49	43	54	48	43	52	46	42
6	68	55	45	39	66	53	45	38	51	44	38	49	42	37	47	41	37
7	63	49	40	34	61	48	40	34	47	39	33	45	38	33	43	37	32
8	59	45	36	30	57	44	36	30	43	35	30	41	34	29	40	34	29
9	55	41	33	27	53	41	33	27	39	32	27	38	31	27	37	31	26
10	51	38	30	25	50	37	30	25	36	29	24	35	29	24	34	28	24

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	6626	6626	6626
5°	6646	6568	5755
10°	6701	6445	5044
15°	6722	6280	4425
20°	6726	6096	3900
25°	6651	5872	3417
30°	6575	5613	2995
35°	6465	5365	2603
40°	6331	5093	2252
45°	6146	4815	1902
50°	5905	4520	1567
55°	5631	4194	1239
60°	5313	3857	911
65°	4949	3469	611
70°	4586	3020	375
75°	4186	2488	207
80°	3787	1873	90
85°	3392	1167	33



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	48.5	3.0
10°-20°	139.0	8.7
20°-30°	209.7	13.2
30°-40°	252.4	15.8
40°-50°	262.6	16.5
50°-60°	239.0	15.0
60°-70°	188.7	11.8
70°-80°	127.9	8.0
80°-90°	73.5	4.6
90°-100°	35.2	2.2
100°-110°	13.1	0.8
110°-120°	3.6	0.2
120°-130°	1.1	0.1
130°-140°	0.1	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°	397.2	24.9
0°-40°	649.7	40.7
0°-60°	1151.3	72.2
0°-90°	1541.4	96.7
90°-120°	51.8	3.3
90°-150°	53.0	3.3
90°-180°	53.0	3.3
0°-180°	1594.4	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	513	513	513	513	513	
5°	544	538	513	485	471	53
15°	597	567	488	419	393	170
25°	619	567	440	345	318	286
35°	611	540	375	271	246	383
45°	572	488	302	198	177	441
55°	500	413	225	127	110	447
65°	405	323	149	63	50	401
75°	303	228	77	18	15	321
85°	206	138	21	2	2	178
90°	161	98	2	2	2	88
95°	121	64	1	1	1	91
105°	55	17	1	1	0	60
115°	16	3	1	1	0	18
125°	3	1	1	1	0	3
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°	513	513	513	513	513	513	513	513	513	513	513
2.5°	527	526	526	526	527	527	528	528	529	528	527
5°	544	544	544	544	543	543	543	542	542	540	538
7.5°	561	561	560	559	559	558	557	556	554	551	547
10°	574	573	572	571	571	569	569	567	564	560	556
12.5°	586	586	585	583	581	580	580	577	573	568	562
15°	597	597	596	594	592	590	589	585	580	574	567
17.5°	608	607	606	604	600	598	597	592	586	579	570
20°	614	614	612	609	606	603	601	596	589	581	571
22.5°	617	617	615	612	608	606	603	597	589	580	569
25°	619	619	617	614	610	607	604	597	588	578	567
27.5°	621	620	618	614	609	606	603	595	587	575	563
30°	619	619	617	612	607	604	600	592	582	570	557
32.5°	615	616	613	609	602	599	595	586	575	563	549
35°	611	611	608	604	597	593	589	580	569	555	540
37.5°	604	604	600	596	589	585	581	570	559	545	530
40°	596	594	592	587	580	575	571	560	548	534	517
42.5°	586	583	581	575	568	563	559	548	535	520	504
45°	572	570	567	561	554	550	544	533	521	505	488
47.5°	556	554	551	546	538	534	528	516	504	488	471
50°	539	537	534	529	521	516	512	499	486	471	453
52.5°	520	518	516	510	503	497	493	481	467	451	434
55°	500	499	494	489	482	477	472	459	446	430	413
57.5°	478	476	473	467	459	454	450	438	425	409	391
60°	455	453	449	444	437	432	427	414	402	386	369
62.5°	430	429	425	420	412	407	403	391	379	363	346
65°	405	404	400	396	388	383	379	367	354	340	323
67.5°	380	378	374	370	363	358	354	343	331	316	299
70°	355	353	349	345	338	333	329	319	306	292	275
72.5°	329	327	325	321	313	309	305	294	282	268	251
75°	303	303	299	295	287	284	280	269	257	244	228
77.5°	278	277	275	269	263	259	254	244	233	220	204
80°	253	252	250	244	238	235	230	221	209	197	182
82.5°	229	228	227	221	214	212	206	197	186	174	159
85°	206	205	203	197	191	189	184	176	164	151	138
87.5°	183	183	180	175	169	167	162	154	142	130	117
90°	161	161	158	153	148	145	141	133	122	111	98
92.5°	140	140	137	132	128	125	120	113	102	92	81
95°	121	120	118	113	108	106	101	94	84	74	64
97.5°	102	102	99	96	91	88	84	77	68	59	50
100°	85	85	82	79	74	72	68	62	53	45	36
102.5°	70	69	68	65	59	57	54	48	40	33	26
105°	55	55	54	51	46	44	41	36	29	23	17
107.5°	43	42	41	39	34	32	30	26	20	15	11
110°	32	31	30	28	24	23	21	18	14	11	8



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
112.5°	23	22	21	20	17	16	15	12	10	7	5
115°	16	16	15	14	12	11	10	9	6	5	3
117.5°	11	11	11	10	8	8	7	6	4	3	2
120°	8	8	7	6	6	5	5	4	2	2	1
122.5°	5	5	4	4	3	3	3	2	1	1	1
125°	3	3	2	2	2	2	1	1	1	1	1
127.5°	1	1	1	1	1	0	0	1	1	1	1
130°	0	0	0	0	0	0	0	1	1	1	1
132.5°	0	0	0	0	0	0	0	0	0	0	0
135°	0	0	0	0	0	0	0	0	0	0	0
137.5°	0	0	0	0	0	0	0	0	0	0	0
140°	0	0	0	0	0	0	0	0	0	0	0
142.5°	0	0	0	0	0	0	0	0	0	0	0
145°	0	0	0	0	0	0	0	0	0	0	0
147.5°	0	0	0	0	0	0	0	0	0	0	0
150°	0	0	0	0	0	0	0	0	0	0	0
152.5°	0	0	0	0	0	0	0	0	0	0	0
155°	0	0	0	0	0	0	0	0	0	0	0
157.5°	0	0	0	0	0	0	0	0	0	0	0
160°	0	0	0	0	0	0	0	0	0	0	0
162.5°	0	0	0	0	0	0	0	0	0	0	0
165°	0	0	0	0	0	0	0	0	0	0	0
167.5°	0	0	0	0	0	0	0	0	0	0	0
170°	0	0	0	0	0	0	0	0	0	0	0
172.5°	0	0	0	0	0	0	0	0	0	0	0
175°	0	0	0	0	0	0	0	0	0	0	0
177.5°	0	0	0	0	0	0	0	0	0	0	0
180°	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°	513	513	513	513	513	513	513	513	513	513	513
2.5°	527	526	525	523	522	522	520	519	517	516	514
5°	536	533	531	528	527	525	522	519	516	513	509
7.5°	544	540	536	532	530	528	522	518	513	509	504
10°	552	546	541	535	532	529	522	516	510	504	498
12.5°	557	550	543	536	532	528	520	512	505	497	489
15°	560	552	543	535	530	525	516	506	497	488	479
17.5°	562	552	543	532	526	521	510	499	488	478	468
20°	562	551	539	528	521	515	503	490	478	467	455
22.5°	559	547	534	521	514	507	493	480	466	454	441
25°	555	541	527	514	506	498	483	468	453	440	425
27.5°	550	535	519	504	496	488	471	455	439	424	410
30°	543	527	510	494	484	476	458	441	424	408	393
32.5°	533	516	500	482	472	463	445	426	408	392	376
35°	523	506	488	469	459	450	429	411	392	375	359
37.5°	512	494	475	455	445	435	415	394	375	357	340
40°	500	481	461	440	429	419	398	378	358	339	322
42.5°	485	466	446	424	413	403	381	359	339	321	304
45°	470	449	428	407	396	385	363	341	321	302	285
47.5°	452	432	411	389	378	366	344	322	301	283	266
50°	434	414	393	370	359	347	325	303	283	264	247
52.5°	415	394	372	350	339	327	306	284	263	245	228
55°	394	373	351	329	318	307	285	264	243	225	209
57.5°	373	352	331	308	297	286	264	244	224	207	190
60°	350	330	309	286	275	264	243	222	204	187	171
62.5°	327	307	287	264	254	243	223	202	184	168	152
65°	305	285	264	242	232	221	201	183	165	149	133
67.5°	281	262	242	221	211	201	181	163	146	130	115
70°	257	239	220	200	190	180	161	144	127	112	97
72.5°	234	216	198	179	169	160	140	124	108	94	80
75°	211	194	176	158	148	140	121	105	90	77	64
77.5°	190	172	155	137	128	120	103	88	73	61	49
80°	168	151	134	117	109	101	85	71	57	46	36
82.5°	146	129	114	98	90	83	68	55	43	33	24
85°	125	109	95	80	72	66	53	41	30	21	13
87.5°	105	91	77	63	56	50	38	28	19	11	3
90°	86	73	60	48	42	36	26	17	8	2	1
92.5°	69	57	45	34	29	24	15	7	2	1	1
95°	53	42	32	23	18	14	7	2	1	1	1
97.5°	40	30	22	14	10	7	3	1	1	1	1
100°	28	20	13	7	5	4	2	1	1	1	1
102.5°	19	12	8	4	3	2	1	1	1	1	1
105°	12	8	5	3	2	1	1	1	1	1	1
107.5°	8	5	3	2	1	1	1	1	1	1	1
110°	5	3	2	1	1	1	1	1	1	1	1



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CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
112.5°	3	2	1	1	1	1	1	1	1	1	1
115°	2	1	1	1	1	1	1	1	1	1	1
117.5°	1	1	1	1	1	1	1	1	1	1	1
120°	1	1	1	1	1	1	1	1	1	1	1
122.5°	1	1	1	1	1	1	1	1	1	1	1
125°	1	1	1	1	1	1	1	1	1	1	1
127.5°	1	1	1	1	1	1	1	1	1	1	1
130°	1	1	1	1	1	1	1	1	1	1	2
132.5°	0	0	0	0	0	0	0	0	0	0	0
135°	0	0	0	0	0	0	0	0	0	0	0
137.5°	0	0	0	0	0	0	0	0	0	0	0
140°	0	0	0	0	0	0	0	0	0	0	0
142.5°	0	0	0	0	0	0	0	0	0	0	0
145°	0	0	0	0	0	0	0	0	0	0	0
147.5°	0	0	0	0	0	0	0	0	0	0	0
150°	0	0	0	0	0	0	0	0	0	0	0
152.5°	0	0	0	0	0	0	0	0	0	0	0
155°	0	0	0	0	0	0	0	0	0	0	0
157.5°	0	0	0	0	0	0	0	0	0	0	0
160°	0	0	0	0	0	0	0	0	0	0	0
162.5°	0	0	0	0	0	0	0	0	0	0	0
165°	0	0	0	0	0	0	0	0	0	0	0
167.5°	0	0	0	0	0	0	0	0	0	0	0
170°	0	0	0	0	0	0	0	0	0	0	0
172.5°	0	0	0	0	0	0	0	0	0	0	0
175°	0	0	0	0	0	0	0	0	0	0	0
177.5°	0	0	0	0	0	0	0	0	0	0	0
180°	0	0	0	0	0	0	0	0	0	0	0



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CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	513	513	513	513	513	513	513	513	513	513	513
2.5°	512	511	508	508	507	504	503	501	499	498	496
5°	506	503	500	498	496	492	489	487	485	482	479
7.5°	500	495	490	487	486	480	476	473	469	466	463
10°	492	485	479	476	474	467	462	458	453	449	445
12.5°	482	475	467	464	460	453	447	442	437	432	427
15°	470	462	452	449	445	438	431	425	419	413	409
17.5°	458	448	439	434	430	421	414	408	402	396	391
20°	444	433	423	418	414	404	396	390	383	377	372
22.5°	429	417	406	401	396	386	377	371	364	357	352
25°	413	400	389	384	378	368	359	352	345	339	333
27.5°	396	383	371	365	360	349	340	333	327	320	315
30°	379	365	353	347	341	331	322	315	308	302	296
32.5°	361	346	335	328	322	311	302	296	289	283	277
35°	344	328	316	309	304	293	284	277	271	265	260
37.5°	325	310	297	291	285	276	266	259	252	247	241
40°	306	291	278	272	267	256	247	240	234	228	224
42.5°	288	273	259	253	248	239	229	222	216	210	207
45°	269	254	241	235	229	219	211	204	198	192	189
47.5°	249	235	222	216	211	201	193	186	179	174	171
50°	231	217	204	198	192	183	175	168	162	157	153
52.5°	212	198	186	180	174	165	158	150	145	139	136
55°	193	180	167	162	156	147	140	132	127	122	119
57.5°	175	161	149	144	139	129	122	115	110	106	102
60°	156	143	131	126	121	112	105	98	93	89	86
62.5°	138	125	114	108	104	95	87	82	78	75	71
65°	120	108	97	92	87	79	72	67	63	60	57
67.5°	102	91	80	76	72	64	58	53	50	47	44
70°	85	75	65	61	57	50	45	40	38	35	33
72.5°	69	59	50	47	43	38	33	29	27	25	23
75°	54	45	37	34	31	26	22	19	18	17	16
77.5°	40	32	25	23	20	17	14	13	12	11	11
80°	27	21	15	13	12	10	9	8	8	7	7
82.5°	17	11	8	7	7	6	5	5	4	4	4
85°	7	5	4	4	3	3	3	2	2	2	2
87.5°	2	2	2	2	2	2	2	2	2	2	2
90°	2	2	2	2	2	2	2	2	2	2	2
92.5°	1	1	1	1	1	1	1	1	1	1	1
95°	1	1	1	1	1	1	1	1	1	1	1
97.5°	1	1	1	1	1	1	1	1	1	1	1
100°	1	1	1	1	1	1	1	1	1	1	1
102.5°	1	1	1	1	1	1	1	1	1	1	1
105°	1	1	1	1	1	1	1	1	1	1	1
107.5°	1	1	1	1	1	1	1	1	1	1	1
110°	1	1	1	1	1	1	1	1	1	1	1



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CATALOG NUMBER: MPBL-2-LD4-UNV-1DN-STD-40

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
112.5°	1	1	1	1	1	1	1	1	1	1	1
115°	1	1	1	1	1	1	1	1	1	1	1
117.5°	1	1	1	1	1	1	1	1	1	1	1
120°	1	1	1	1	1	1	1	1	1	1	1
122.5°	1	1	1	1	1	1	1	1	1	1	1
125°	1	1	1	1	1	1	1	1	1	1	1
127.5°	1	1	1	1	1	1	1	1	1	1	1
130°	1	1	1	1	1	1	1	1	1	1	1
132.5°	0	0	0	0	0	0	0	0	0	0	0
135°	0	0	0	0	0	0	0	0	0	0	0
137.5°	0	0	0	0	0	0	0	0	0	0	0
140°	0	0	0	0	0	0	0	0	0	0	0
142.5°	0	0	0	0	0	0	0	0	0	0	0
145°	0	0	0	0	0	0	0	0	0	0	0
147.5°	0	0	0	0	0	0	0	0	0	0	0
150°	0	0	0	0	0	0	0	0	0	0	0
152.5°	0	0	0	0	0	0	0	0	0	0	0
155°	0	0	0	0	0	0	0	0	0	0	0
157.5°	0	0	0	0	0	0	0	0	0	0	0
160°	0	0	0	0	0	0	0	0	0	0	0
162.5°	0	0	0	0	0	0	0	0	0	0	0
165°	0	0	0	0	0	0	0	0	0	0	0
167.5°	0	0	0	0	0	0	0	0	0	0	0
170°	0	0	0	0	0	0	0	0	0	0	0
172.5°	0	0	0	0	0	0	0	0	0	0	0
175°	0	0	0	0	0	0	0	0	0	0	0
177.5°	0	0	0	0	0	0	0	0	0	0	0
180°	0	0	0	0	0	0	0	0	0	0	0



TEST NUMBER: P27271

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CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	513	513	513	513	513	513	513	513
2.5°	494	492	492	492	490	489	489	488
5°	477	475	474	474	473	472	472	471
7.5°	460	457	456	456	454	454	453	453
10°	442	439	437	437	434	434	433	432
12.5°	423	420	418	418	415	414	413	412
15°	405	402	400	399	396	395	394	393
17.5°	386	383	382	381	379	376	376	375
20°	367	363	362	361	359	357	356	356
22.5°	348	344	343	341	340	337	337	336
25°	329	325	324	323	321	319	319	318
27.5°	311	307	306	305	303	301	301	300
30°	292	289	288	287	285	283	282	282
32.5°	274	271	269	269	267	265	264	264
35°	257	253	251	251	249	247	247	246
37.5°	238	235	234	233	232	230	229	229
40°	220	218	216	216	214	213	212	212
42.5°	202	200	199	198	197	195	195	194
45°	185	183	181	181	179	178	177	177
47.5°	167	165	164	163	161	160	160	161
50°	150	148	147	146	144	143	142	143
52.5°	132	130	129	129	127	126	125	126
55°	115	113	113	112	110	110	109	110
57.5°	99	97	97	96	95	94	93	94
60°	84	82	81	80	79	78	78	78
62.5°	69	67	66	66	65	63	63	64
65°	55	53	53	52	51	50	50	50
67.5°	43	41	40	40	39	38	38	38
70°	32	30	30	29	29	29	29	29
72.5°	23	22	22	21	21	21	21	21
75°	16	15	15	15	15	14	14	15
77.5°	11	10	10	10	10	10	10	10
80°	7	6	6	6	6	6	6	6
82.5°	4	3	3	3	3	3	3	3
85°	2	2	2	2	2	2	2	2
87.5°	2	2	2	2	2	2	2	2
90°	2	2	2	2	2	2	2	2
92.5°	1	1	1	1	1	1	1	1
95°	1	1	1	1	1	1	1	1
97.5°	1	1	1	1	1	1	1	1
100°	1	0	0	0	0	0	0	0
102.5°	1	0	0	0	0	0	0	0
105°	1	0	0	0	0	0	0	0
107.5°	1	0	0	0	0	0	0	0
110°	1	0	0	0	0	0	0	0



TEST NUMBER: P27271

CATALOG NUMBER: MPBL-2-LD4-UNV-1DN-STD-40

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
112.5°	0	0	0	0	0	0	0	0
115°	1	1	0	0	0	0	0	0
117.5°	1	1	1	0	0	0	0	0
120°	1	1	1	1	1	0	0	0
122.5°	1	1	1	1	0	0	0	0
125°	1	1	1	1	0	0	0	0
127.5°	1	1	1	1	1	1	0	0
130°	1	1	1	1	1	1	0	1
132.5°	0	0	0	0	0	0	0	0
135°	0	0	0	0	0	0	0	0
137.5°	0	0	0	0	0	0	0	0
140°	0	0	0	0	0	0	0	0
142.5°	0	0	0	0	0	0	0	0
145°	0	0	0	0	0	0	0	0
147.5°	0	0	0	0	0	0	0	0
150°	0	0	0	0	0	0	0	0
152.5°	0	0	0	0	0	0	0	0
155°	0	0	0	0	0	0	0	0
157.5°	0	0	0	0	0	0	0	0
160°	0	0	0	0	0	0	0	0
162.5°	0	0	0	0	0	0	0	0
165°	0	0	0	0	0	0	0	0
167.5°	0	0	0	0	0	0	0	0
170°	0	0	0	0	0	0	0	0
172.5°	0	0	0	0	0	0	0	0
175°	0	0	0	0	0	0	0	0
177.5°	0	0	0	0	0	0	0	0
180°	0	0	0	0	0	0	0	0

(END OF REPORT)