

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: P27270

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

Test Date: 01/11/16

Test Information

Test Method: LM-79-08
Report Number: P27270
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-HI-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: 1953.8 lumens
Efficiency: N/A
Efficacy: 86.4 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

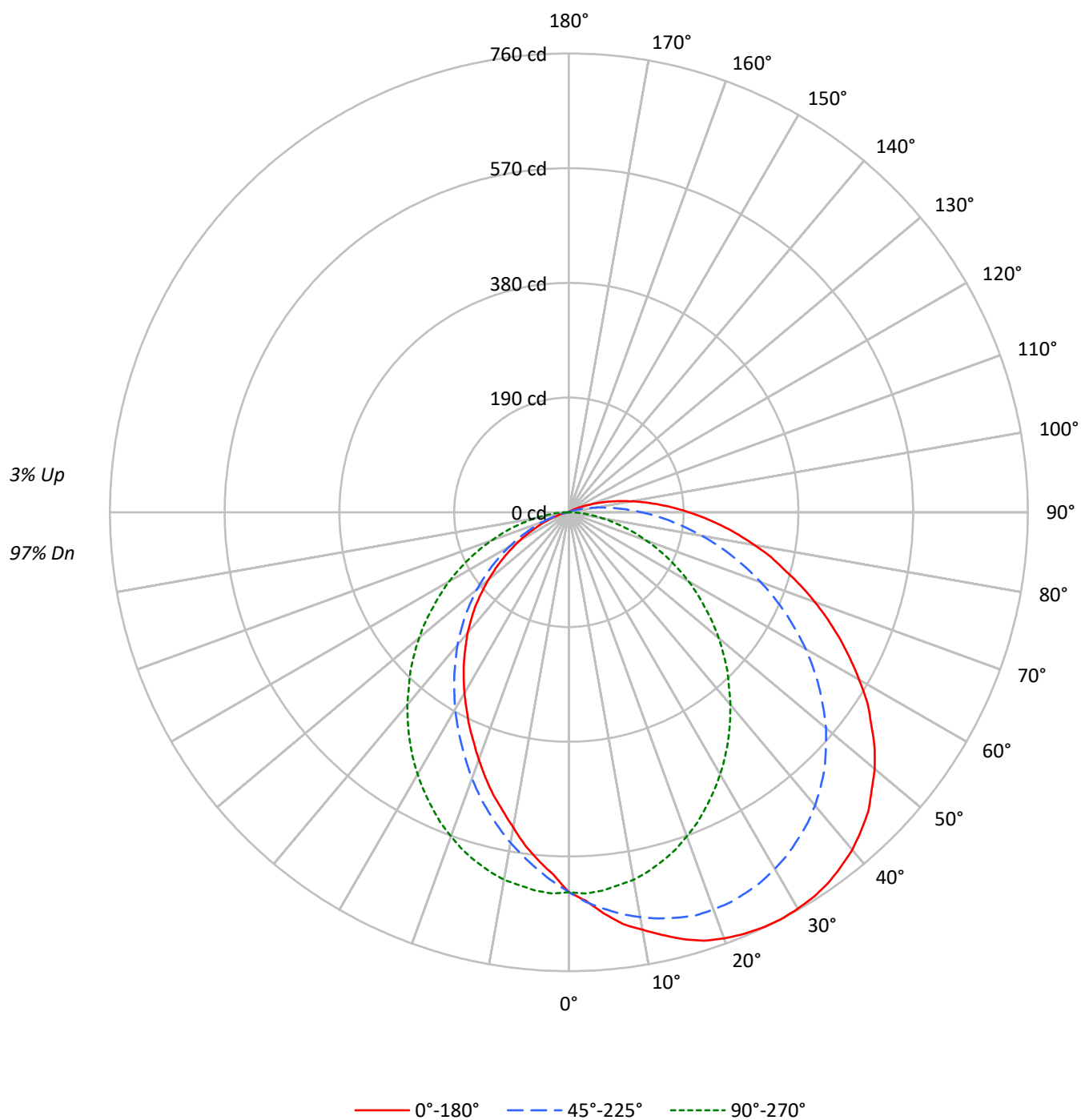
Input Watts (W): 22.6
Input Voltage (V): 120.13
Input Current (Ain): 0.18911
Voltage Rise (V): NR
Power Factor: 0.9977
Total Harmonic Distortion (THDi): 5.36%
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: 24 HR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	54	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°	8125	8125	8125
5°	8149	8053	7074
10°	8196	7902	6188
15°	8243	7696	5450
20°	8227	7453	4776
25°	8155	7179	4190
30°	8052	6892	3675
35°	7926	6581	3206
40°	7754	6250	2772
45°	7532	5915	2342
50°	7242	5547	1906
55°	6881	5125	1498
60°	6480	4723	1109
65°	6049	4237	745
70°	5594	3667	439
75°	5112	3038	235
80°	4670	2280	105
85°	4182	1500	49



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	59.5	3.0
10°-20°	170.3	8.7
20°-30°	257.0	13.2
30°-40°	309.4	15.8
40°-50°	321.8	16.5
50°-60°	292.8	15.0
60°-70°	231.2	11.8
70°-80°	156.8	8.0
80°-90°	90.2	4.6
90°-100°	43.1	2.2
100°-110°	15.9	0.8
110°-120°	4.5	0.2
120°-130°	1.4	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°	486.7	24.9
0°-40°	796.1	40.7
0°-60°	1410.6	72.2
0°-90°	1888.8	96.7
90°-120°	63.5	3.2
90°-150°	65.0	3.3
90°-180°	65.0	3.3
0°-180°	1953.8	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	629	629	629	629	629	
5°	667	659	629	594	579	65
15°	732	695	598	514	484	208
25°	759	695	538	422	390	351
35°	749	661	460	331	303	469
45°	701	599	371	243	218	540
55°	611	506	275	155	133	547
65°	495	396	182	77	61	490
75°	370	280	94	22	17	393
85°	254	170	27	3	3	219
90°	199	121	2	2	2	109
95°	149	78	1	1	1	113
105°	68	21	1	1	0	74
115°	20	4	2	1	0	22
125°	3	1	2	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°	629	629	629	629	629	629	629	629	629	629	629
2.5°	644	644	646	645	646	646	647	647	648	647	646
5°	667	667	667	666	666	666	665	665	664	662	659
7.5°	688	687	687	686	685	684	683	681	678	675	671
10°	702	702	702	701	699	699	697	695	691	686	681
12.5°	717	717	717	715	713	711	710	706	702	696	689
15°	732	732	731	729	726	724	722	717	711	704	695
17.5°	744	743	743	740	736	733	731	725	718	709	700
20°	751	751	750	747	742	740	737	730	721	712	700
22.5°	756	756	754	750	746	742	739	732	722	711	699
25°	759	758	756	752	746	743	740	731	720	708	695
27.5°	760	759	757	752	746	743	738	729	718	705	690
30°	758	758	755	751	744	739	736	725	712	699	682
32.5°	755	753	751	746	739	734	730	719	705	690	673
35°	749	748	744	739	731	726	721	710	696	679	661
37.5°	740	739	736	730	722	717	712	699	685	668	649
40°	730	729	725	719	710	705	699	687	672	654	634
42.5°	716	715	711	704	695	690	684	671	655	637	617
45°	701	699	696	689	680	674	667	654	638	619	599
47.5°	680	680	677	670	660	655	648	634	619	599	577
50°	661	659	656	649	639	633	627	613	596	577	556
52.5°	638	636	632	626	616	610	604	589	573	553	531
55°	611	611	607	600	590	585	578	563	548	527	506
57.5°	586	584	580	573	563	557	552	537	521	501	480
60°	555	556	552	546	535	529	524	509	493	473	453
62.5°	525	525	522	516	506	501	495	480	465	445	424
65°	495	494	492	486	476	470	465	451	435	416	396
67.5°	464	464	461	455	445	439	436	420	405	387	367
70°	433	433	429	424	414	410	403	390	376	358	338
72.5°	402	401	398	393	384	380	374	360	346	328	309
75°	370	370	367	362	354	349	343	329	316	299	280
77.5°	343	342	337	332	322	319	313	300	287	270	252
80°	312	311	307	301	294	289	283	270	257	241	223
82.5°	283	282	278	272	264	260	255	242	229	213	196
85°	254	253	249	242	234	231	225	214	202	187	170
87.5°	226	225	220	215	207	203	198	187	174	161	144
90°	199	198	194	189	181	177	172	161	149	136	121
92.5°	173	173	168	163	156	152	147	137	125	113	98
95°	149	148	144	139	132	129	124	115	103	92	78
97.5°	126	125	122	117	110	107	104	93	84	73	60
100°	105	104	101	97	90	87	84	74	65	56	45
102.5°	86	85	82	78	73	69	66	58	50	41	31
105°	68	68	65	62	57	53	51	43	36	29	21
107.5°	52	52	50	47	43	39	37	31	25	19	14
110°	39	38	36	34	30	28	26	21	17	13	9



TEST NUMBER: P27270

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

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
112.5°	28	27	26	24	22	20	18	15	12	9	6
115°	20	20	18	17	15	14	13	10	8	6	4
117.5°	14	13	13	12	10	9	8	7	5	3	2
120°	9	9	8	8	7	6	5	4	3	2	1
122.5°	6	6	5	5	4	3	3	2	1	1	1
125°	3	3	3	2	2	2	1	1	1	1	1
127.5°	1	1	1	1	1	1	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°	629	629	629	629	629	629	629	629	629	629	629
2.5°	645	643	642	641	640	639	637	635	634	632	630
5°	656	653	651	647	645	644	640	635	632	629	625
7.5°	666	661	657	651	649	646	640	634	629	623	617
10°	675	669	662	655	651	648	640	632	625	618	609
12.5°	682	674	665	656	652	647	637	628	619	609	599
15°	686	677	666	655	649	643	632	620	610	598	587
17.5°	688	677	664	652	645	638	625	611	599	586	572
20°	688	675	661	646	639	631	616	601	586	571	557
22.5°	684	670	655	639	630	622	605	588	572	556	540
25°	680	663	646	628	620	611	592	573	556	538	522
27.5°	673	655	637	618	608	598	578	558	538	520	502
30°	664	645	625	605	594	584	562	541	521	501	481
32.5°	654	633	613	590	579	568	546	523	501	481	460
35°	642	620	598	575	563	551	527	503	481	460	438
37.5°	628	605	582	558	545	533	508	483	460	438	416
40°	613	589	565	539	527	514	488	462	439	416	394
42.5°	594	570	545	519	506	493	466	440	416	392	371
45°	576	551	525	499	486	472	445	418	394	371	349
47.5°	555	529	503	476	463	449	421	395	370	347	326
50°	532	507	480	453	439	425	398	371	347	324	302
52.5°	508	482	455	428	415	402	373	347	323	300	279
55°	483	457	431	403	390	376	348	322	298	275	256
57.5°	456	431	405	377	363	351	323	297	274	252	232
60°	429	404	379	351	337	324	298	273	250	229	208
62.5°	402	376	352	324	312	298	272	247	226	205	185
65°	374	349	325	298	284	272	247	223	202	182	163
67.5°	344	322	297	271	258	246	222	198	178	159	141
70°	316	294	270	244	233	221	197	174	155	136	121
72.5°	287	266	243	219	206	195	172	152	132	115	99
75°	259	239	216	193	182	170	148	129	110	94	80
77.5°	232	212	190	168	157	147	125	107	89	74	62
80°	204	185	165	143	133	123	103	85	70	56	45
82.5°	178	158	140	120	110	101	83	67	52	40	30
85°	152	134	116	98	89	81	64	50	36	27	17
87.5°	128	111	94	76	69	61	47	34	23	13	5
90°	105	90	74	59	51	44	32	21	10	2	2
92.5°	84	70	55	41	35	29	18	9	2	2	1
95°	65	52	39	28	23	17	8	3	1	1	2
97.5°	49	37	26	17	13	9	4	2	1	1	2
100°	34	25	16	9	7	5	2	1	1	1	1
102.5°	23	15	9	5	4	3	1	2	1	1	2
105°	14	10	6	3	2	2	1	1	1	1	1
107.5°	9	6	3	2	1	1	1	1	1	1	1
110°	6	4	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°	4	2	1	1	1	1	1	1	1	1	2
115°	2	1	1	1	1	1	2	2	2	2	2
117.5°	1	1	1	1	1	2	2	2	2	2	2
120°	1	1	1	1	1	2	2	2	2	2	2
122.5°	1	1	1	1	1	1	2	2	2	2	2
125°	1	1	1	1	1	1	2	2	2	2	2
127.5°	1	1	1	1	1	1	2	2	2	2	2
130°	1	1	1	1	2	1	2	2	2	2	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



TEST NUMBER: P27270

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

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	629	629	629	629	629	629	629	629	629	629	629
2.5°	628	626	623	622	620	618	616	613	612	610	607
5°	620	617	613	610	608	604	600	597	594	591	587
7.5°	611	606	600	598	594	589	583	579	575	571	567
10°	601	594	587	584	580	573	566	561	556	551	545
12.5°	590	581	572	568	563	556	547	541	535	529	523
15°	576	566	556	551	546	537	527	521	514	507	501
17.5°	560	549	537	532	526	517	507	499	492	485	479
20°	544	530	518	512	506	495	485	477	469	462	455
22.5°	525	511	498	491	485	474	462	454	445	439	432
25°	505	490	477	469	463	451	440	431	422	415	409
27.5°	485	469	454	447	441	428	417	408	399	393	387
30°	463	447	432	425	418	406	394	385	377	370	364
32.5°	442	425	409	402	394	383	372	361	353	347	342
35°	420	402	386	379	372	360	349	339	331	325	319
37.5°	397	379	364	356	349	337	326	316	308	303	297
40°	375	357	342	334	327	315	304	294	287	280	276
42.5°	352	333	318	311	303	291	281	271	264	257	253
45°	329	311	296	288	281	270	259	249	243	236	231
47.5°	307	288	273	266	258	246	236	228	220	213	209
50°	284	266	250	242	236	224	214	206	199	192	187
52.5°	261	242	227	221	213	202	192	184	177	171	166
55°	237	219	204	198	191	180	170	162	155	148	145
57.5°	214	196	182	175	168	158	148	141	134	129	125
60°	192	174	160	153	147	137	128	120	114	109	105
62.5°	169	152	139	132	126	116	107	100	95	91	87
65°	147	130	118	112	107	96	88	82	77	73	69
67.5°	125	111	98	92	88	78	71	65	61	56	54
70°	105	90	79	73	69	61	55	49	46	42	39
72.5°	85	72	61	56	53	45	40	36	32	30	28
75°	66	56	45	41	38	32	27	24	22	21	20
77.5°	49	40	32	28	26	20	18	16	15	14	13
80°	34	26	20	16	14	12	11	10	9	9	8
82.5°	21	14	10	9	8	7	6	6	5	5	4
85°	9	6	5	4	4	4	3	3	3	3	3
87.5°	3	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	2	2	2	2	2	2	2	2	2	2
95°	2	1	1	1	1	1	1	1	1	1	1
97.5°	2	1	1	1	1	1	1	1	1	1	1
100°	1	1	1	1	1	1	1	1	1	1	1
102.5°	2	1	1	1	1	1	1	1	1	1	1
105°	2	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



TEST NUMBER: P27270

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

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
112.5°	2	1	1	1	1	1	1	1	1	1	1
115°	2	2	2	2	1	1	1	1	1	1	1
117.5°	2	2	2	2	2	2	1	1	1	1	1
120°	2	2	2	2	2	1	1	1	1	1	1
122.5°	2	2	2	2	1	1	1	1	1	1	1
125°	2	2	2	2	2	1	1	1	1	1	1
127.5°	2	2	2	2	2	2	1	1	1	1	1
130°	2	2	2	2	2	2	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: P27270

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

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	629	629	629	629	629	629	629	629
2.5°	605	602	602	601	600	598	599	600
5°	585	583	582	581	579	578	577	579
7.5°	564	561	560	558	556	555	554	556
10°	541	538	536	534	532	530	529	530
12.5°	519	516	513	511	509	507	505	506
15°	497	493	491	489	486	484	483	484
17.5°	474	469	468	465	463	461	461	460
20°	450	446	444	442	439	437	437	436
22.5°	427	422	420	418	415	413	412	412
25°	404	399	397	395	392	390	391	390
27.5°	381	377	374	373	371	368	369	367
30°	359	355	352	350	348	346	346	346
32.5°	336	333	331	329	327	324	325	324
35°	314	311	309	307	305	304	303	303
37.5°	292	289	286	286	284	282	281	281
40°	271	268	266	265	263	261	261	261
42.5°	248	246	243	242	241	239	239	239
45°	226	224	222	221	219	217	217	218
47.5°	206	202	200	200	198	197	196	195
50°	183	181	180	178	177	174	174	174
52.5°	163	160	158	157	156	154	154	153
55°	142	139	138	137	135	134	133	133
57.5°	122	119	118	118	115	114	114	113
60°	103	100	99	99	97	96	95	95
62.5°	84	82	81	81	79	78	78	77
65°	67	65	64	63	62	61	61	61
67.5°	52	49	49	49	47	47	46	46
70°	38	36	36	36	35	35	35	34
72.5°	27	26	26	26	26	26	25	25
75°	19	18	18	18	18	18	17	17
77.5°	13	12	12	12	12	12	12	11
80°	8	7	7	7	7	7	7	7
82.5°	4	4	4	4	4	4	3	3
85°	3	3	3	3	3	3	3	3
87.5°	2	2	2	2	2	2	2	2
90°	2	2	2	2	2	2	2	2
92.5°	2	2	1	1	1	1	2	2
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	1	1	0	0	0	0	0
105°	1	1	1	0	0	0	0	0
107.5°	0	0	0	0	0	0	0	0
110°	1	0	0	0	0	0	0	0



TEST NUMBER: P27270

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

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
112.5°	1	0	0	0	0	0	0	0
115°	1	1	1	1	0	0	0	0
117.5°	1	1	1	1	1	1	0	0
120°	1	1	1	1	1	0	0	0
122.5°	1	1	1	1	1	0	0	0
125°	1	1	1	1	1	0	0	0
127.5°	1	1	1	1	1	1	0	0
130°	1	1	1	1	1	1	1	0
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)