

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: P25886

Luminaire Tested: **TRE15-LD4-40W-40-CL-WH-UNV-ED1C**

Test Date: 03/24/15



**Test Information**

Test Method: LM-79-08  
Report Number: P25886  
Test Lab: INNOVATION CENTER-P2  
Test Date: 03/24/15  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: TRE15-LD4-40W-40-CL-WH-UNV-ED1C  
Description: FAILSAFE TERRAPIN 15" DIAMETER 40 WATT-4000K WALL MOUNT  
LUMINAIRE CLEAR LENS WITH WHITE BORDER, WHITE EYELID AND  
INTERNAL WHITE REFLECTOR  
Light Source: (112) NICHIA 4000K LEDS  
1FS402256M8404-0  
Ballast/Driver: (1) OSRAM ELECTRONIC DRIVER  
OSROT40UNVDIM1F

**Summary**

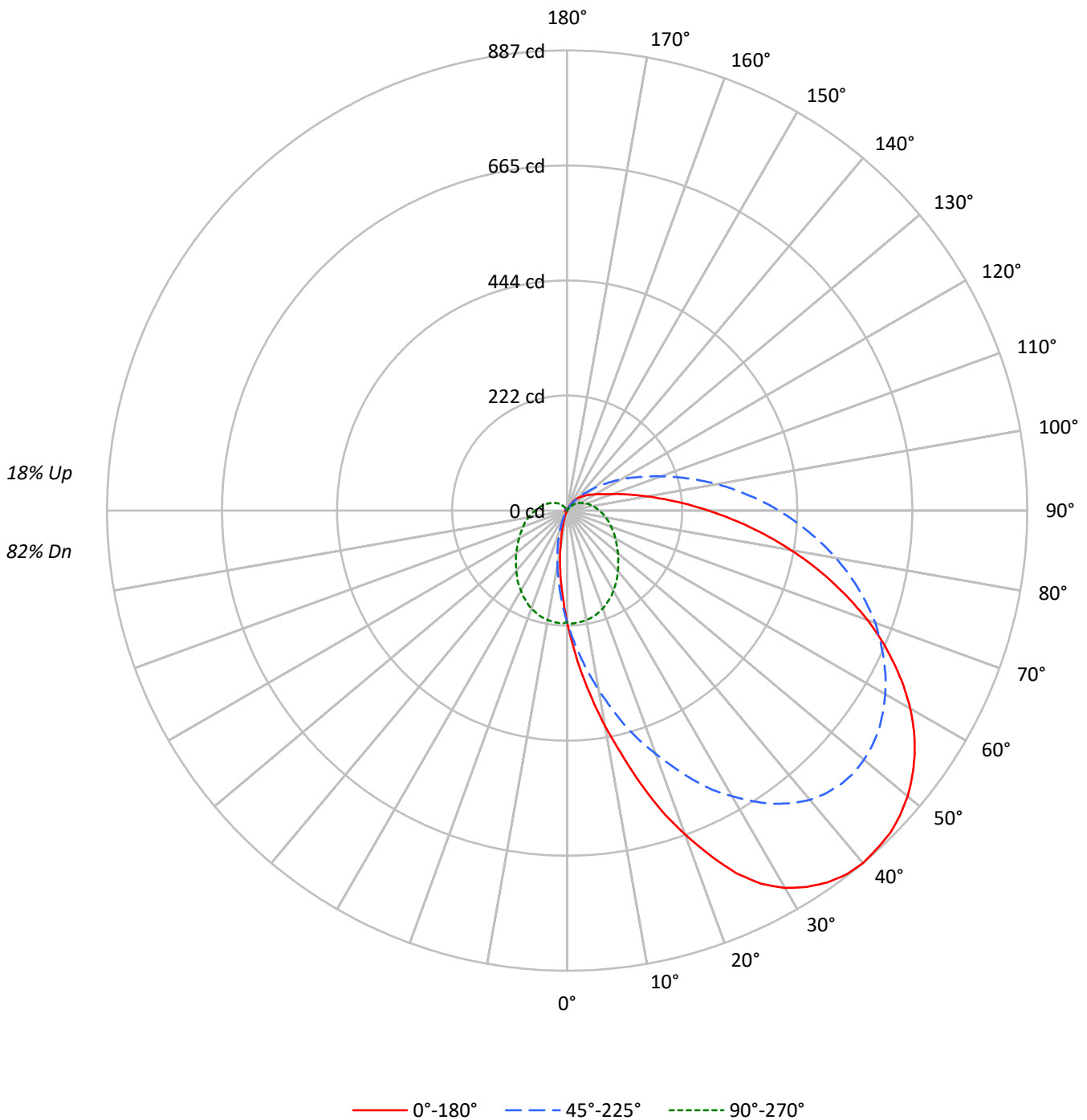
Lumens per Lamp: N/A  
Luminaire Lumens: 2046.2 lumens  
Efficiency: N/A  
Efficacy: 47.6 lumens/watt  
Spacing Criteria (0/90/45): 2.46 / 1.23 / 2.26  
Luminous Opening: Circular (Dia: 1.25' x H: 0')  
CIE Type: Semi-Direct

Input Watts (W): 43  
Input Voltage (V): 120.06  
Input Current (Ain): 0.35997  
Voltage Rise (V): NR  
Power Factor: 0.9984  
Total Harmonic Distortion (THDi): 7.15%  
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	0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																		
0	115	115	115	115	110	110	110	110	101	101	101	93	93	93	86	86	86	82
1	100	93	87	82	95	89	84	79	82	77	73	75	71	68	68	65	63	59
2	89	78	70	63	84	75	67	60	68	62	56	62	57	52	57	52	49	45
3	80	67	57	49	75	64	55	48	58	51	45	53	47	42	48	43	39	35
4	72	58	48	40	68	56	46	39	51	43	36	46	39	34	42	36	32	29
5	66	51	41	33	62	49	39	32	45	37	30	41	34	28	37	31	26	24
6	60	45	35	28	57	43	34	27	40	32	26	36	29	24	33	27	23	20
7	55	41	31	24	52	39	30	24	36	28	22	33	26	21	30	24	19	17
8	51	37	27	21	49	35	26	20	32	25	19	30	23	18	27	21	17	15
9	48	33	24	19	45	32	24	18	29	22	17	27	21	16	25	19	15	13
10	44	30	22	16	42	29	21	16	27	20	15	25	19	14	23	17	13	11

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°
0°	1886	1886	1886
5°	2747	1911	1206
10°	3759	1906	668
15°	4931	1898	318
20°	6198	1876	121
25°	7462	1839	19
30°	8508	1803	10
35°	9369	1777	11
40°	10156	1740	23
45°	10916	1724	25
50°	11694	1747	41
55°	12509	1789	46
60°	13402	1877	70
65°	14424	2034	83
70°	15798	2308	103
75°	17894	2813	136
80°	22124	3839	202
85°	35324	6944	403



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	21.3	1.0
10°-20°	71.2	3.5
20°-30°	135.8	6.6
30°-40°	202.6	9.9
40°-50°	253.7	12.4
50°-60°	279.9	13.7
60°-70°	277.3	13.6
70°-80°	247.1	12.1
80°-90°	197.5	9.7
90°-100°	143.4	7.0
100°-110°	96.1	4.7
110°-120°	59.8	2.9
120°-130°	34.6	1.7
130°-140°	17.4	0.8
140°-150°	6.8	0.3
150°-160°	1.6	0.1
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	228.3	11.2
0°-40°	430.8	21.1
0°-60°	964.5	47.1
0°-90°	1686.4	82.4
90°-120°	299.4	14.6
90°-150°	358.1	17.5
90°-180°	360.0	17.6
0°-180°	2046.2	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	215	215	215	215	215	
5°	312	280	217	157	137	33
15°	543	428	209	69	35	157
25°	771	572	190	22	2	356
35°	875	690	166	3	1	548
45°	880	746	139	1	2	678
55°	818	734	117	1	3	731
65°	695	673	98	2	4	687
75°	528	581	83	3	4	557
85°	351	467	69	3	4	305
90°	272	408	62	3	4	150
95°	207	349	56	3	4	159
105°	120	240	45	3	3	129
115°	75	153	34	2	3	76
125°	53	91	25	2	3	48
135°	38	46	15	2	3	29
145°	23	19	6	2	3	15
155°	8	6	3	2	3	3
165°	0	0	0	0	0	0
175°	0	0	0	0	0	0
180°	0	0	0	0	0	0



TEST NUMBER: P25886

CATALOG NUMBER: TRE15-LD4-40W-40-CL-WH-UNV-ED1C

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	215	215	215	215	215	215	215	215	215	215	215
2.5°	260	261	259	258	257	255	252	251	249	246	244
5°	312	311	310	307	306	301	296	293	287	280	275
7.5°	365	364	362	358	354	348	341	333	325	315	307
10°	422	420	417	411	406	397	387	376	364	351	337
12.5°	478	475	473	468	462	451	436	422	406	388	370
15°	543	538	531	528	518	506	487	469	449	428	403
17.5°	607	601	596	587	574	558	538	516	491	464	434
20°	664	662	655	644	629	612	587	560	531	499	465
22.5°	719	717	710	699	682	660	636	606	572	535	496
25°	771	768	761	750	733	709	684	651	613	572	526
27.5°	811	809	803	792	775	753	725	692	651	607	556
30°	840	838	832	822	808	787	760	727	685	636	583
32.5°	860	859	854	845	832	812	786	755	714	664	608
35°	875	874	870	862	850	833	808	779	739	690	631
37.5°	884	883	878	872	861	845	824	796	759	711	652
40°	887	885	882	875	866	852	833	807	772	728	670
42.5°	884	884	881	875	867	854	837	813	781	739	682
45°	880	879	876	871	864	852	836	815	785	746	693
47.5°	870	869	868	862	856	846	832	812	785	749	698
50°	857	856	855	850	845	836	824	805	781	747	700
52.5°	839	839	838	835	831	823	812	795	773	742	697
55°	818	818	817	816	812	806	797	783	762	734	692
57.5°	793	793	792	792	791	786	779	767	748	722	683
60°	764	764	764	766	766	763	759	748	732	708	672
62.5°	731	732	733	737	739	738	736	728	714	692	659
65°	695	698	699	704	707	710	711	705	693	673	643
67.5°	657	659	663	668	675	679	683	679	671	653	626
70°	616	617	623	630	638	646	652	652	645	632	606
72.5°	572	575	583	590	600	611	620	623	618	607	585
75°	528	531	540	548	560	574	585	591	590	581	561
77.5°	483	487	496	506	520	536	550	558	560	554	538
80°	438	442	451	464	479	496	511	524	529	526	514
82.5°	394	398	407	421	438	457	474	489	499	497	487
85°	351	355	365	380	398	418	438	455	465	467	460
87.5°	310	316	324	341	360	380	401	420	432	437	433
90°	272	277	287	304	323	344	365	385	400	408	406
92.5°	238	243	252	269	289	310	332	351	368	379	378
95°	207	211	221	238	256	278	301	319	338	349	353
97.5°	180	184	194	210	228	249	271	289	308	321	325
100°	157	160	170	185	202	222	241	261	280	293	301
102.5°	137	140	149	163	179	197	216	234	252	266	274
105°	120	122	130	143	158	175	193	210	226	240	249
107.5°	106	107	115	126	139	154	171	187	202	216	225
110°	93	95	101	111	123	136	151	166	180	193	202



TEST NUMBER: P25886

CATALOG NUMBER: TRE15-LD4-40W-40-CL-WH-UNV-ED1C

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	83	85	90	99	109	121	134	147	160	172	180
115°	75	76	81	88	97	107	119	130	142	153	160
117.5°	69	69	73	79	86	95	105	115	126	136	142
120°	63	63	66	71	77	85	94	103	112	120	124
122.5°	57	58	60	64	69	76	83	91	99	105	108
125°	53	53	55	58	62	68	74	80	87	91	94
127.5°	49	49	50	53	56	61	66	71	76	78	80
130°	45	45	46	48	50	54	58	62	65	66	68
132.5°	41	41	42	43	46	48	51	54	55	55	57
135°	38	38	38	39	41	43	45	46	45	46	47
137.5°	34	34	35	35	36	37	38	38	37	38	38
140°	31	31	31	32	32	32	32	31	30	30	31
142.5°	27	27	27	27	27	26	26	25	24	24	24
145°	23	23	23	23	22	21	21	19	19	19	19
147.5°	19	19	18	18	18	17	16	15	15	14	14
150°	15	15	15	14	14	13	12	12	11	11	10
152.5°	11	11	11	11	11	10	9	9	8	8	8
155°	8	9	8	8	8	7	7	6	6	6	6
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: P25886

CATALOG NUMBER: TRE15-LD4-40W-40-CL-WH-UNV-ED1C

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	215	215	215	215	215	215	215	215	215	215	215
2.5°	241	238	236	232	229	225	222	218	214	210	206
5°	268	262	255	248	240	233	225	217	209	202	194
7.5°	295	286	274	263	251	239	228	216	205	194	183
10°	322	308	293	277	262	245	229	214	199	185	172
12.5°	350	331	311	291	270	250	230	212	193	177	160
15°	379	355	329	304	279	256	231	209	187	168	150
17.5°	406	375	346	316	287	259	231	205	181	159	139
20°	431	396	361	326	293	261	229	201	174	150	129
22.5°	456	416	375	336	298	262	227	196	167	142	119
25°	481	435	389	344	302	262	224	190	159	133	110
27.5°	505	453	402	352	306	262	220	185	152	125	101
30°	527	470	413	358	307	260	216	178	145	117	93
32.5°	547	485	422	363	307	257	211	172	138	110	85
35°	568	500	431	367	308	254	206	166	131	103	78
37.5°	584	513	439	369	306	250	200	159	124	96	72
40°	601	525	445	371	304	245	194	152	117	90	66
42.5°	613	535	451	371	301	240	188	146	111	84	60
45°	624	543	455	371	297	234	182	139	106	79	55
47.5°	631	549	458	370	293	229	175	134	100	74	51
50°	635	554	460	368	288	223	169	128	94	69	47
52.5°	636	555	460	366	283	217	163	122	90	65	44
55°	633	555	459	362	278	211	157	117	85	61	40
57.5°	628	552	456	358	273	205	152	112	81	57	38
60°	620	547	452	353	267	199	146	107	77	54	35
62.5°	611	541	448	348	261	193	141	103	73	51	33
65°	598	532	442	343	255	187	136	98	70	48	30
67.5°	585	521	434	337	249	182	131	94	66	45	28
70°	567	509	424	329	243	177	127	90	63	43	26
72.5°	549	495	414	322	237	172	122	87	60	40	25
75°	530	479	403	314	231	166	118	83	57	38	23
77.5°	509	462	391	305	224	161	113	79	54	36	22
80°	487	444	378	296	217	155	109	76	51	34	20
82.5°	464	425	363	286	211	150	105	72	48	32	19
85°	441	405	348	275	203	145	100	69	46	30	18
87.5°	417	385	333	264	196	139	96	65	43	28	16
90°	393	364	317	253	188	134	92	62	41	26	15
92.5°	368	345	301	242	181	129	88	59	38	24	14
95°	344	323	284	230	174	124	84	56	36	22	13
97.5°	319	303	268	218	166	118	80	53	34	21	12
100°	296	282	251	206	157	113	76	50	32	19	11
102.5°	273	261	234	194	149	107	73	47	30	18	10
105°	249	239	217	182	141	102	69	45	28	17	9
107.5°	226	219	200	169	132	96	65	42	26	15	8
110°	204	200	183	157	124	91	61	40	24	14	8





TEST NUMBER: P25886

CATALOG NUMBER: TRE15-LD4-40W-40-CL-WH-UNV-ED1C

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
112.5°	183	180	167	144	115	85	58	37	22	13	7
115°	163	162	151	132	106	79	54	34	21	12	6
117.5°	144	144	136	120	98	73	50	32	19	11	6
120°	127	127	121	108	89	67	46	30	18	10	5
122.5°	111	111	107	96	80	61	43	27	16	9	5
125°	97	97	93	84	71	55	39	25	15	8	4
127.5°	83	83	80	73	62	49	35	23	14	8	4
130°	71	71	68	63	54	43	31	21	12	7	4
132.5°	59	59	57	53	46	37	27	18	11	6	3
135°	49	49	47	44	38	31	23	15	9	5	3
137.5°	39	39	38	35	31	25	19	13	8	5	3
140°	31	31	30	28	24	20	15	11	7	4	3
142.5°	24	24	23	21	19	15	12	8	5	4	3
145°	19	18	17	16	14	12	9	6	4	3	3
147.5°	14	13	13	12	10	9	7	5	4	3	3
150°	10	10	9	8	7	6	5	4	3	3	3
152.5°	7	7	7	6	5	5	4	3	3	3	3
155°	5	5	5	5	4	4	4	3	3	3	3
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: P25886

CATALOG NUMBER: TRE15-LD4-40W-40-CL-WH-UNV-ED1C

**CANDELA DISTRIBUTION (continued):**

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	215	215	215	215	215	215	215	215	215	215	215
2.5°	202	199	195	191	187	185	183	179	178	176	174
5°	187	181	174	168	162	157	153	148	146	142	140
7.5°	173	164	154	146	139	131	126	120	116	112	109
10°	159	148	135	126	118	108	101	95	90	85	82
12.5°	145	132	120	108	97	87	79	73	67	62	58
15°	133	118	103	91	80	69	61	54	49	44	41
17.5°	121	105	89	76	64	54	45	40	34	30	27
20°	109	92	75	62	51	41	33	28	23	20	17
22.5°	98	80	64	50	40	30	24	19	15	12	10
25°	88	70	54	41	30	22	16	12	8	6	4
27.5°	79	61	45	33	23	16	10	6	4	2	1
30°	71	53	38	26	17	10	6	3	1	1	1
32.5°	63	45	31	20	12	6	2	1	1	1	1
35°	57	39	26	15	8	3	1	1	1	1	1
37.5°	51	34	21	12	5	1	1	1	1	1	1
40°	45	30	17	8	3	1	1	1	1	1	1
42.5°	41	26	14	6	1	1	1	1	1	1	1
45°	37	22	11	4	1	1	1	1	1	1	2
47.5°	33	19	9	2	1	1	1	1	1	2	2
50°	30	17	7	2	1	1	1	1	2	2	2
52.5°	27	15	5	2	2	1	1	2	2	2	2
55°	24	13	4	2	2	1	1	2	2	2	3
57.5°	22	11	3	2	2	2	2	2	2	3	3
60°	20	10	2	2	2	2	2	2	3	3	3
62.5°	19	9	2	2	2	2	2	2	3	3	3
65°	17	7	2	2	2	2	2	3	3	3	3
67.5°	16	7	2	2	2	3	3	3	3	3	3
70°	15	6	2	2	2	3	3	3	3	3	3
72.5°	13	5	2	2	3	3	3	3	3	4	4
75°	12	5	3	3	3	3	3	3	3	4	4
77.5°	12	4	3	3	3	3	3	3	4	4	4
80°	11	4	3	3	3	3	3	3	4	4	4
82.5°	10	4	3	3	3	3	3	4	4	4	4
85°	9	4	3	3	3	3	3	4	4	4	4
87.5°	8	4	3	3	3	3	4	4	4	4	4
90°	8	3	3	3	3	3	4	4	4	4	4
92.5°	7	3	3	3	3	3	4	4	4	4	4
95°	7	3	3	3	3	3	3	4	4	4	4
97.5°	6	3	3	3	3	3	3	4	4	4	4
100°	6	3	3	3	3	3	3	3	4	4	4
102.5°	5	3	3	3	3	3	3	3	4	4	4
105°	5	3	2	3	3	3	3	3	3	3	3
107.5°	4	2	2	3	3	3	3	3	3	3	3
110°	4	2	2	2	3	3	3	3	3	3	3



TEST NUMBER: P25886

CATALOG NUMBER: TRE15-LD4-40W-40-CL-WH-UNV-ED1C

**CANDELA DISTRIBUTION (continued):**

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
112.5°	4	2	2	2	2	2	2	3	3	3	3
115°	3	2	2	2	2	2	2	2	3	3	3
117.5°	3	2	2	2	2	2	2	2	3	3	3
120°	3	2	2	2	2	2	2	2	3	3	3
122.5°	3	2	2	2	2	2	2	2	2	3	3
125°	3	2	2	2	2	2	2	2	2	3	3
127.5°	3	2	2	2	2	2	2	2	2	3	3
130°	3	2	2	2	2	2	2	2	2	3	3
132.5°	3	2	2	2	2	2	2	2	2	2	2
135°	3	2	2	2	2	2	2	2	2	2	2
137.5°	3	2	2	2	2	2	2	2	2	2	2
140°	2	2	2	2	2	2	2	2	2	2	2
142.5°	2	2	2	2	2	2	2	2	2	2	2
145°	2	2	2	2	2	2	2	2	2	2	2
147.5°	2	2	2	2	2	2	2	2	2	2	3
150°	2	2	2	2	2	2	2	2	2	2	2
152.5°	3	2	2	2	2	2	3	3	3	3	3
155°	3	2	2	2	2	2	3	3	3	3	3
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: P25886

CATALOG NUMBER: TRE15-LD4-40W-40-CL-WH-UNV-ED1C

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	215	215	215	215
2.5°	174	173	170	171
5°	138	137	136	137
7.5°	107	105	103	105
10°	79	76	76	75
12.5°	56	54	52	52
15°	38	36	35	35
17.5°	24	23	23	22
20°	15	14	13	13
22.5°	8	7	6	6
25°	3	2	2	2
27.5°	1	1	1	1
30°	1	1	1	1
32.5°	1	1	1	1
35°	1	1	1	1
37.5°	1	2	2	2
40°	2	2	2	2
42.5°	2	2	2	2
45°	2	2	2	2
47.5°	2	3	3	3
50°	2	3	3	3
52.5°	2	3	3	3
55°	3	3	3	3
57.5°	3	3	4	4
60°	3	3	4	4
62.5°	3	4	4	4
65°	4	4	4	4
67.5°	4	4	4	4
70°	4	4	4	4
72.5°	4	4	4	4
75°	4	4	4	4
77.5°	4	4	4	4
80°	4	4	4	4
82.5°	4	4	4	4
85°	4	4	4	4
87.5°	4	4	4	4
90°	4	4	4	4
92.5°	4	4	4	4
95°	4	4	4	4
97.5°	4	4	4	4
100°	4	4	4	4
102.5°	4	4	4	3
105°	3	3	3	3
107.5°	3	3	3	3
110°	3	3	3	3



TEST NUMBER: P25886

CATALOG NUMBER: TRE15-LD4-40W-40-CL-WH-UNV-ED1C

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
112.5°	3	3	3	3
115°	3	3	3	3
117.5°	3	3	3	3
120°	3	3	3	3
122.5°	3	3	3	3
125°	3	3	3	3
127.5°	3	3	3	3
130°	3	3	3	3
132.5°	3	3	3	3
135°	2	3	3	3
137.5°	3	3	3	3
140°	3	3	3	3
142.5°	3	3	3	3
145°	3	3	3	3
147.5°	3	3	3	3
150°	3	3	3	3
152.5°	3	3	3	2
155°	3	3	3	3
157.5°	0	0	0	0
160°	0	0	0	0
162.5°	0	0	0	0
165°	0	0	0	0
167.5°	0	0	0	0
170°	0	0	0	0
172.5°	0	0	0	0
175°	0	0	0	0
177.5°	0	0	0	0
180°	0	0	0	0

(END OF REPORT)