

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: P25880

Luminaire Tested: **TRE15-LD4-30W-40-CL-WH-UNV-ED1C**

Test Date: 03/27/15



**Test Information**

Test Method: LM-79-08  
Report Number: P25880  
Test Lab: INNOVATION CENTER-P2  
Test Date: 03/27/15  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: TRE15-LD4-30W-40-CL-WH-UNV-ED1C  
Description: FAILSAFE TERRAPIN 15" DIAMETER 30 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**

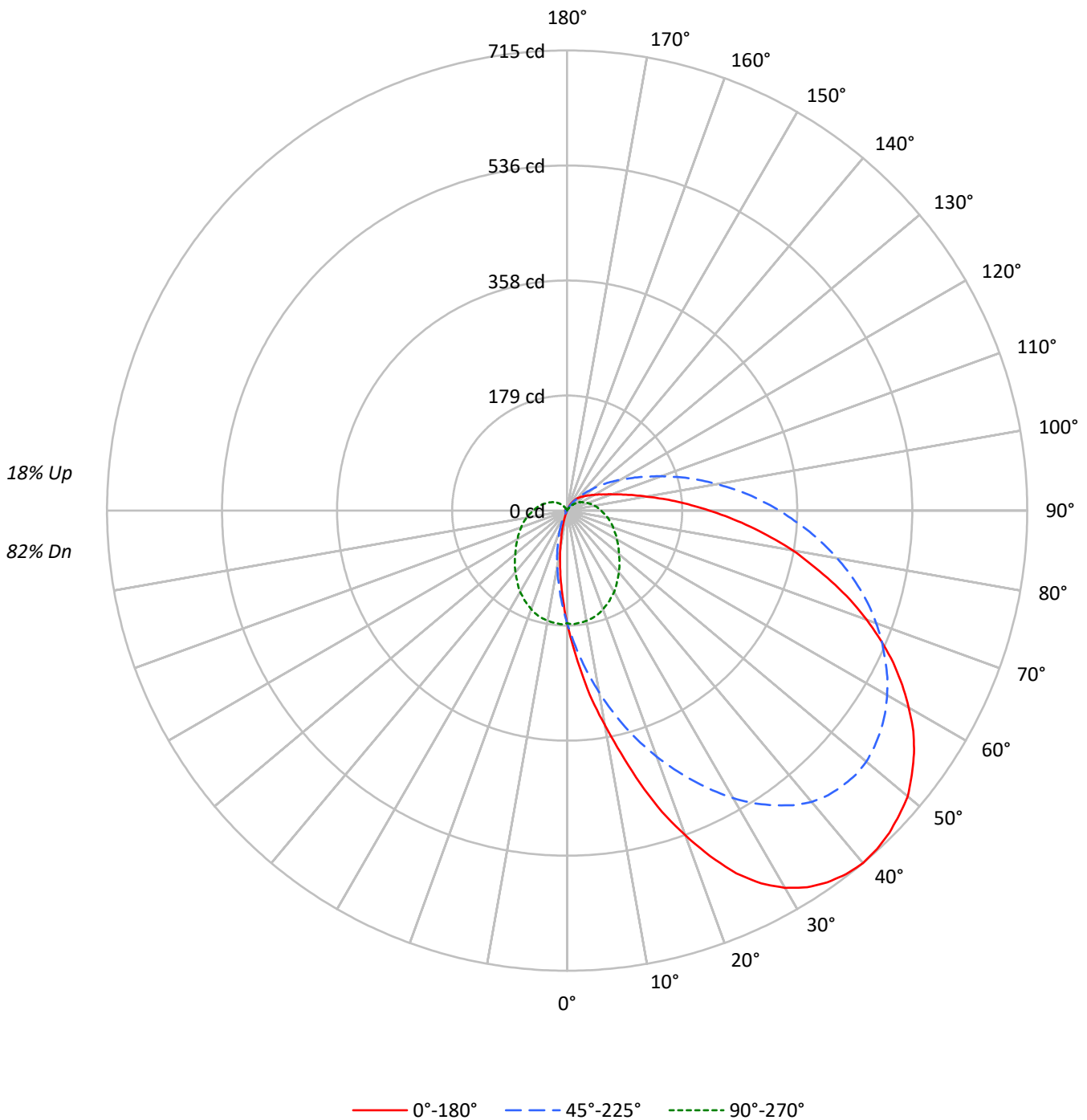
Lumens per Lamp: N/A  
Luminaire Lumens: 1662.3 lumens  
Efficiency: N/A  
Efficacy: 50.7 lumens/watt  
Spacing Criteria (0/90/45): 2.44 / 1.24 / 2.26  
Luminous Opening: Circular (Dia: 1.25' x H: 0')  
CIE Type: Semi-Direct

Input Watts (W): 32.8  
Input Voltage (V): 119.96  
Input Current (A<sub>in</sub>): 0.27495  
Voltage Rise (V): NR  
Power Factor: 0.9972  
Total Harmonic Distortion (THDi): 6.11%  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: 24 HR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT

TEST NUMBER: P25880

CATALOG NUMBER: TRE15-LD4-30W-40-CL-WH-UNV-ED1C

### Luminous Intensity Polar Plot





TEST NUMBER: P25880

CATALOG NUMBER: TRE15-LD4-30W-40-CL-WH-UNV-ED1C

**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	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	74	71	68	68	65	63	59				
2	89	78	70	62	84	75	67	60	68	62	56	62	57	52	57	52	48	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	22	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°	1535	1535	1535
5°	2210	1550	977
10°	3010	1550	543
15°	3986	1544	254
20°	5012	1521	93
25°	6020	1500	19
30°	6857	1479	10
35°	7549	1446	11
40°	8187	1431	23
45°	8782	1427	25
50°	9429	1433	27
55°	10062	1483	46
60°	10754	1561	53
65°	11602	1702	62
70°	12694	1949	77
75°	14403	2372	102
80°	17982	3233	152
85°	28682	5837	302



TEST NUMBER: P25880

CATALOG NUMBER: TRE15-LD4-30W-40-CL-WH-UNV-ED1C

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	17.3	1.0
10°-20°	57.8	3.5
20°-30°	110.1	6.6
30°-40°	164.2	9.9
40°-50°	205.6	12.4
50°-60°	226.9	13.7
60°-70°	224.9	13.5
70°-80°	200.8	12.1
80°-90°	160.8	9.7
90°-100°	117.0	7.0
100°-110°	78.5	4.7
110°-120°	48.8	2.9
120°-130°	28.2	1.7
130°-140°	14.2	0.9
140°-150°	5.7	0.3
150°-160°	1.4	0.1
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	185.3	11.1
0°-40°	349.5	21.0
0°-60°	782.0	47.0
0°-90°	1368.6	82.3
90°-120°	244.2	14.7
90°-150°	292.3	17.6
90°-180°	294.0	17.7
0°-180°	1662.3	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	175	175	175	175	175	
5°	251	228	176	128	111	27
15°	439	348	170	57	28	127
25°	622	463	155	18	2	287
35°	705	559	135	3	1	441
45°	708	605	115	1	2	546
55°	658	595	97	1	3	588
65°	559	545	82	2	3	552
75°	425	471	70	2	3	449
85°	285	378	58	3	3	247
90°	221	330	53	3	3	122
95°	168	283	48	3	3	129
105°	95	195	39	2	3	102
115°	59	123	30	2	2	60
125°	41	74	23	1	2	37
135°	30	38	14	1	2	23
145°	19	16	6	2	2	12
155°	7	5	3	1	2	3
165°	0	0	0	0	0	0
175°	0	0	0	0	0	0
180°	0	0	0	0	0	



TEST NUMBER: P25880

CATALOG NUMBER: TRE15-LD4-30W-40-CL-WH-UNV-ED1C

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	175	175	175	175	175	175	175	175	175	175	175
2.5°	210	208	208	208	207	207	206	203	202	200	199
5°	251	248	249	248	245	243	241	238	232	228	224
7.5°	297	292	293	290	287	283	278	270	265	257	250
10°	338	337	335	333	327	322	315	305	297	287	275
12.5°	386	384	383	378	371	364	354	342	330	317	302
15°	439	435	433	426	418	407	396	382	364	348	328
17.5°	491	487	483	476	465	452	437	420	399	378	355
20°	537	535	530	522	510	495	478	455	432	407	380
22.5°	581	581	576	566	553	535	515	492	465	435	405
25°	622	620	615	605	591	575	553	527	497	463	429
27.5°	653	653	647	640	626	608	587	560	527	490	453
30°	677	677	673	665	652	636	615	589	555	516	476
32.5°	694	693	690	682	671	657	637	611	578	539	496
35°	705	704	701	695	685	672	654	630	598	559	515
37.5°	712	711	708	703	694	683	666	644	614	577	531
40°	715	714	711	706	699	688	673	653	626	591	545
42.5°	713	712	710	705	699	689	676	658	633	600	556
45°	708	707	705	701	696	687	676	659	636	605	563
47.5°	700	700	698	695	690	682	672	657	636	608	568
50°	691	689	688	685	681	674	665	651	633	607	570
52.5°	675	675	674	672	669	663	655	643	626	602	567
55°	658	658	657	656	654	649	643	633	617	595	563
57.5°	638	637	637	637	636	633	628	620	606	586	556
60°	613	614	615	616	616	615	611	604	592	574	546
62.5°	587	589	591	592	593	594	593	587	578	561	536
65°	559	560	563	565	568	571	572	568	560	545	523
67.5°	528	530	534	538	543	546	549	548	542	529	509
70°	495	498	502	508	514	520	526	526	521	511	493
72.5°	461	465	469	476	484	492	499	502	499	492	476
75°	425	429	435	442	452	462	472	476	476	471	456
77.5°	389	393	399	408	420	432	443	451	453	449	437
80°	356	357	365	375	388	401	413	424	427	426	417
82.5°	320	322	329	340	354	369	383	395	403	402	395
85°	285	287	295	307	321	338	353	366	377	378	374
87.5°	252	254	262	275	289	307	323	337	350	353	351
90°	221	223	232	245	260	278	295	310	324	330	329
92.5°	193	195	204	217	232	249	268	284	298	306	308
95°	168	170	179	192	206	223	241	258	274	283	287
97.5°	145	148	156	169	183	199	217	233	249	259	265
100°	125	129	136	149	162	178	195	210	225	236	244
102.5°	109	112	120	131	144	157	174	188	203	215	223
105°	95	98	104	115	127	139	155	168	182	195	203
107.5°	83	86	92	101	111	124	137	150	163	174	183
110°	74	76	81	89	99	109	121	133	145	156	164



TEST NUMBER: P25880

CATALOG NUMBER: TRE15-LD4-30W-40-CL-WH-UNV-ED1C

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	66	68	72	79	87	96	107	118	129	138	146
115°	59	61	64	70	77	85	95	104	114	123	130
117.5°	54	55	58	63	68	76	84	92	102	108	115
120°	49	50	52	56	61	67	75	82	90	96	101
122.5°	45	46	47	51	55	60	66	72	79	84	88
125°	41	42	43	46	49	53	59	64	70	74	76
127.5°	38	39	39	42	44	48	52	57	61	63	65
130°	35	35	36	38	40	43	46	50	52	54	56
132.5°	32	33	33	34	36	38	41	43	45	45	47
135°	30	30	30	31	32	34	36	37	37	38	39
137.5°	27	27	27	28	29	30	31	31	31	31	32
140°	25	25	25	25	26	26	26	25	25	25	26
142.5°	22	22	22	22	22	22	21	20	20	20	20
145°	19	19	19	18	18	18	17	16	16	16	16
147.5°	16	16	15	15	15	14	14	13	13	12	12
150°	12	12	12	12	12	11	11	10	10	9	9
152.5°	10	10	10	9	9	9	8	8	7	7	7
155°	7	7	7	7	7	6	6	5	5	5	5
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: P25880

CATALOG NUMBER: TRE15-LD4-30W-40-CL-WH-UNV-ED1C

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	175	175	175	175	175	175	175	175	175	175	175
2.5°	197	194	192	190	186	184	180	177	174	170	167
5°	219	213	208	202	195	190	183	176	170	164	158
7.5°	241	232	223	214	204	195	185	175	166	157	148
10°	263	250	238	226	212	200	187	174	162	150	139
12.5°	286	269	253	237	220	204	188	172	157	143	130
15°	309	288	268	248	227	208	189	170	153	137	122
17.5°	329	306	282	258	233	211	189	167	148	129	114
20°	350	322	294	266	238	212	187	163	142	122	105
22.5°	371	338	306	273	242	213	185	159	136	115	97
25°	390	353	317	280	246	213	183	155	131	109	90
27.5°	410	367	327	287	248	213	181	150	125	102	83
30°	428	381	336	292	250	212	177	146	119	96	76
32.5°	445	394	344	296	251	210	173	141	113	90	70
35°	461	406	351	299	251	207	169	135	108	84	64
37.5°	476	417	358	302	250	204	165	130	102	78	59
40°	489	427	364	303	248	201	160	125	97	73	54
42.5°	499	435	368	304	246	197	155	120	92	69	50
45°	507	441	372	304	243	192	150	115	87	64	46
47.5°	513	446	374	303	240	188	146	110	83	61	42
50°	517	450	376	303	237	183	141	105	79	57	39
52.5°	517	451	376	300	233	179	136	101	75	54	36
55°	516	451	376	298	229	174	131	97	71	50	34
57.5°	512	449	374	295	225	170	127	93	68	48	31
60°	506	445	371	291	220	165	123	89	65	45	29
62.5°	497	441	367	288	216	160	118	86	62	42	27
65°	487	433	362	283	212	156	114	82	59	40	25
67.5°	476	425	356	278	207	152	111	79	56	38	24
70°	462	415	349	273	203	148	107	76	53	36	23
72.5°	448	403	341	267	198	144	103	73	51	34	21
75°	432	390	331	260	193	139	100	70	48	32	20
77.5°	415	377	321	253	187	135	96	67	46	30	18
80°	396	362	311	245	182	131	93	64	44	28	17
82.5°	379	347	300	237	176	126	89	61	41	27	16
85°	359	331	288	228	170	122	86	58	39	25	15
87.5°	339	315	274	220	164	118	82	55	37	23	14
90°	320	298	262	211	158	113	79	53	35	22	13
92.5°	300	282	249	202	152	109	76	50	33	21	12
95°	281	265	236	192	146	105	72	48	31	19	11
97.5°	261	248	222	183	139	101	69	46	29	18	10
100°	241	230	208	173	133	96	66	43	27	17	9
102.5°	222	213	194	163	126	91	63	41	26	15	9
105°	203	197	180	152	119	87	60	39	24	14	8
107.5°	184	180	166	142	112	82	57	36	23	13	7
110°	166	164	152	131	104	77	53	34	21	12	7





TEST NUMBER: P25880

CATALOG NUMBER: TRE15-LD4-30W-40-CL-WH-UNV-ED1C

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
112.5°	149	148	138	121	97	73	50	32	20	11	6
115°	133	132	125	110	90	68	47	30	18	10	5
117.5°	118	118	112	100	82	63	44	28	17	10	5
120°	104	105	100	90	75	58	41	26	16	9	5
122.5°	91	91	88	80	67	53	38	24	15	8	4
125°	79	80	77	70	60	47	34	23	14	8	4
127.5°	68	68	66	61	53	42	31	20	13	7	4
130°	57	58	56	52	46	37	27	18	11	6	3
132.5°	48	49	48	44	39	32	24	16	10	6	3
135°	40	40	39	36	32	26	20	14	9	5	3
137.5°	32	33	32	29	26	22	17	12	8	4	2
140°	26	26	25	23	21	17	13	10	6	4	2
142.5°	20	20	19	18	16	13	10	8	5	3	2
145°	16	15	15	14	12	10	8	6	4	2	2
147.5°	12	12	11	10	9	8	6	4	3	2	2
150°	9	9	8	7	6	5	4	3	3	2	2
152.5°	7	6	6	6	5	4	3	3	3	2	2
155°	5	5	4	4	3	3	3	3	2	2	2
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: P25880

CATALOG NUMBER: TRE15-LD4-30W-40-CL-WH-UNV-ED1C

**CANDELA DISTRIBUTION (continued):**

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	175	175	175	175	175	175	175	175	175	175	175
2.5°	164	160	157	154	153	150	148	146	144	143	142
5°	152	146	142	136	132	128	124	120	118	116	115
7.5°	140	132	126	118	113	107	102	98	94	91	90
10°	129	119	111	102	95	88	82	78	73	69	67
12.5°	118	107	97	87	79	72	64	60	55	50	48
15°	108	95	84	73	65	57	49	44	40	36	33
17.5°	98	85	73	61	52	44	37	32	28	24	22
20°	89	75	62	50	41	34	28	23	19	16	14
22.5°	80	65	52	41	32	25	20	15	12	9	8
25°	72	57	44	33	25	18	13	9	7	5	3
27.5°	65	50	37	26	19	13	9	5	3	2	1
30°	58	43	31	21	14	9	5	2	1	1	1
32.5°	52	37	26	17	10	5	2	1	1	1	1
35°	46	33	21	13	7	3	1	1	1	1	1
37.5°	42	28	18	10	4	1	1	1	1	1	1
40°	37	25	14	7	2	1	1	1	1	1	1
42.5°	33	21	12	5	1	1	1	1	1	1	1
45°	30	19	9	3	1	1	1	1	1	1	1
47.5°	27	16	8	2	1	1	1	1	1	1	2
50°	25	14	6	2	1	1	1	1	1	2	2
52.5°	23	12	5	1	1	1	1	1	2	2	2
55°	21	11	4	1	1	1	1	2	2	2	2
57.5°	19	9	3	1	1	1	1	2	2	2	2
60°	17	8	3	1	1	1	2	2	2	2	2
62.5°	16	7	2	2	1	2	2	2	2	2	2
65°	15	6	2	2	2	2	2	2	2	2	2
67.5°	13	6	2	2	2	2	2	2	2	2	3
70°	12	5	2	2	2	2	2	2	3	3	3
72.5°	12	5	2	2	2	2	2	2	3	3	3
75°	11	4	2	2	2	2	2	2	3	3	3
77.5°	10	4	2	2	2	2	2	2	3	3	3
80°	9	4	2	2	2	3	3	3	3	3	3
82.5°	9	4	2	2	2	3	3	3	3	3	3
85°	8	4	2	2	3	3	3	3	3	3	3
87.5°	7	3	2	2	2	3	3	3	3	3	3
90°	7	3	2	2	2	3	3	3	3	3	3
92.5°	6	3	2	2	3	3	3	3	3	3	3
95°	6	3	2	2	2	3	3	3	3	3	3
97.5°	5	3	2	2	2	2	3	3	3	3	3
100°	5	3	2	2	2	2	2	3	3	3	3
102.5°	5	2	2	2	2	2	2	3	3	3	3
105°	4	2	2	2	2	2	2	3	3	3	3
107.5°	4	2	2	2	2	2	2	2	3	3	3
110°	3	2	2	2	2	2	2	2	2	2	2



TEST NUMBER: P25880

CATALOG NUMBER: TRE15-LD4-30W-40-CL-WH-UNV-ED1C

**CANDELA DISTRIBUTION (continued):**

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
112.5°	3	2	2	2	2	2	2	2	2	2	2
115°	3	2	2	2	1	2	2	2	2	2	2
117.5°	3	2	2	2	1	2	2	2	2	2	2
120°	2	2	2	2	2	2	2	2	2	2	2
122.5°	2	2	2	1	1	2	2	2	2	2	2
125°	2	2	2	1	1	1	2	2	2	2	2
127.5°	2	2	2	1	1	1	1	2	2	2	2
130°	2	2	2	1	1	1	1	2	2	2	2
132.5°	2	2	2	1	1	1	1	2	2	2	2
135°	2	2	2	1	1	1	1	2	2	2	2
137.5°	2	2	2	1	1	1	1	2	2	2	2
140°	2	2	2	2	1	1	2	2	2	2	2
142.5°	2	2	2	2	1	1	1	2	2	2	2
145°	2	2	2	2	2	2	1	2	2	2	2
147.5°	2	2	2	2	2	2	2	2	2	2	2
150°	2	2	2	2	2	2	2	2	2	2	2
152.5°	2	2	2	2	2	2	2	2	2	2	2
155°	2	2	2	1	1	1	2	2	2	2	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: P25880

CATALOG NUMBER: TRE15-LD4-30W-40-CL-WH-UNV-ED1C

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	175	175	175	175
2.5°	142	140	139	140
5°	113	112	110	111
7.5°	87	86	85	84
10°	64	63	61	61
12.5°	45	44	43	42
15°	31	30	29	28
17.5°	20	19	18	18
20°	12	11	11	10
22.5°	6	6	5	5
25°	2	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	1	1	1
40°	1	1	2	2
42.5°	1	2	2	2
45°	1	2	2	2
47.5°	2	2	2	2
50°	2	2	2	2
52.5°	2	2	2	2
55°	2	2	3	3
57.5°	2	2	3	3
60°	2	3	3	3
62.5°	3	3	3	3
65°	3	3	3	3
67.5°	3	3	3	3
70°	3	3	3	3
72.5°	3	3	3	3
75°	3	3	3	3
77.5°	3	3	3	3
80°	3	3	3	3
82.5°	3	3	3	3
85°	3	3	3	3
87.5°	3	3	3	3
90°	3	3	3	3
92.5°	3	3	3	3
95°	3	3	3	3
97.5°	3	3	3	3
100°	3	3	3	3
102.5°	3	3	3	3
105°	3	3	3	3
107.5°	3	3	3	3
110°	2	3	3	3



TEST NUMBER: P25880

CATALOG NUMBER: TRE15-LD4-30W-40-CL-WH-UNV-ED1C

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
112.5°	2	2	2	2
115°	2	2	2	2
117.5°	2	2	2	3
120°	2	2	2	2
122.5°	2	2	2	2
125°	2	2	3	2
127.5°	2	2	2	3
130°	2	2	2	2
132.5°	2	2	2	2
135°	2	2	2	2
137.5°	2	2	2	2
140°	2	2	2	2
142.5°	2	2	2	2
145°	2	2	2	2
147.5°	2	2	2	2
150°	2	2	2	2
152.5°	2	2	2	2
155°	3	2	2	2
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)