

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: P22198

Luminaire Tested: **FM1-B02-LED-E1-T2-CTG125-WH**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: P22198
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: FM1-B02-LED-E1-T2-CTG125-WH
Description: FM1 LED TYPE 2
Light Source: (2) 4000K SMT LED BARS
LEDLBBTY2AIM3
Ballast/Driver: (1) MAGTECH ELECTRONIC DRIVER
LP109024BB1702BAR

Summary

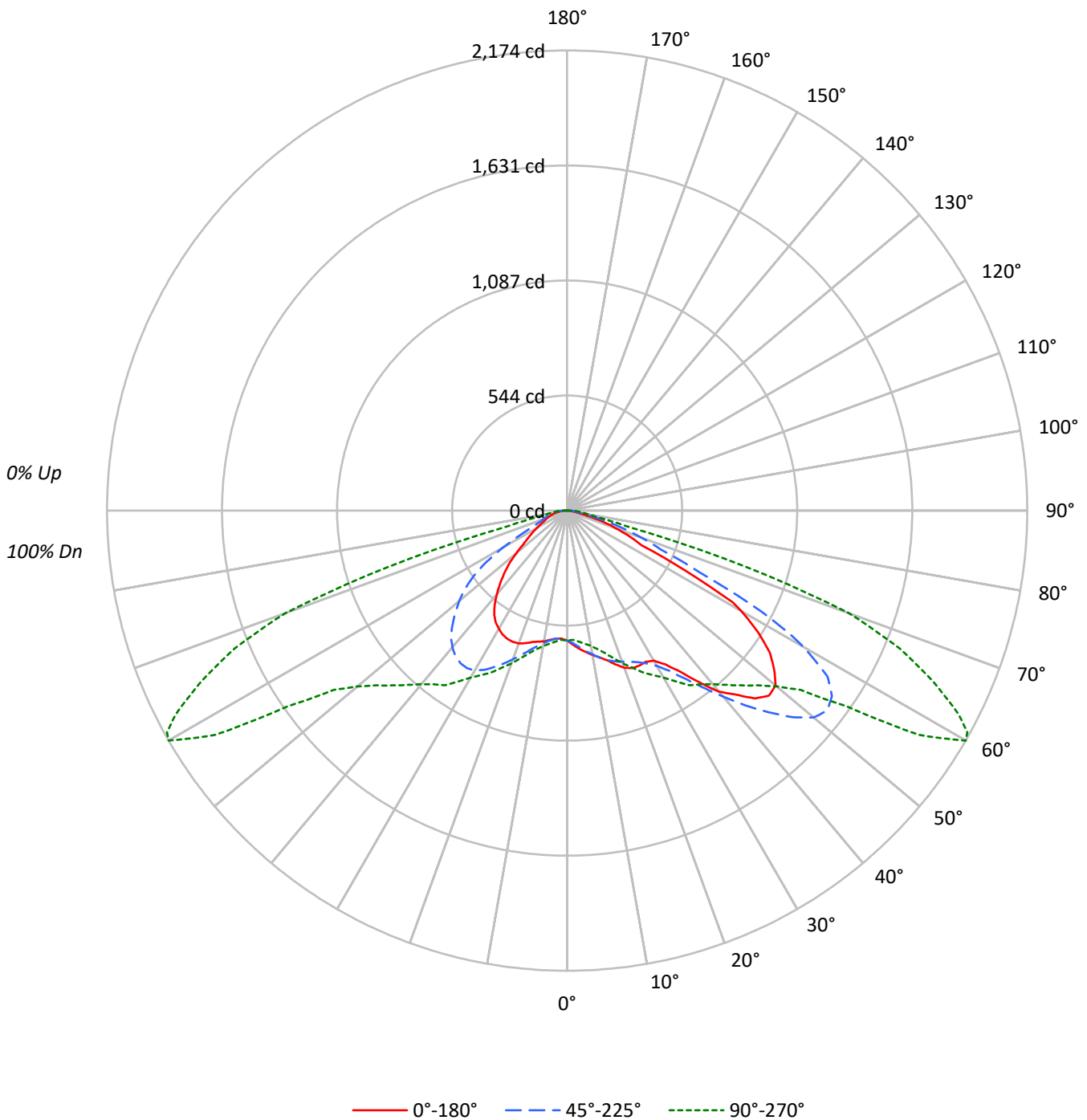
Lumens per Lamp: N/A
Luminaire Lumens: 4131.2 lumens
Efficiency: N/A
Efficacy: 81.2 lumens/watt
Spacing Criteria (0/90/45): 1.95 / 3.08 / 2.24
Luminous Opening: Rectangular (W 0.35' x L: 0.92' x H: 0')
CIE Type: Direct

Input Watts (W): 50.9
Input Voltage (V): NR
Input Current (Ain): 0.4288
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: 13 HR
Ambient Temperature (°C): NR
Test Distance: 25 FT

TEST NUMBER: P22198

CATALOG NUMBER: FM1-B02-LED-E1-T2-CTG125-WH

Luminous Intensity Polar Plot





TEST NUMBER: P22198

CATALOG NUMBER: FM1-B02-LED-E1-T2-CTG125-WH

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	108	103	98	94	105	100	96	92	96	93	89	92	89	87	89	86	84	82
2	97	87	80	74	94	86	79	73	82	76	71	79	74	69	75	71	68	65
3	87	75	66	59	84	73	65	58	70	63	57	67	61	56	65	59	55	52
4	78	65	55	47	76	63	54	47	61	53	46	58	51	46	56	50	45	43
5	71	56	46	39	68	55	46	39	53	45	38	51	44	38	49	43	37	35
6	65	50	40	33	62	49	39	33	47	38	32	45	38	32	43	37	32	29
7	59	44	35	28	57	43	34	28	42	33	27	40	33	27	39	32	27	25
8	55	40	30	24	53	39	30	24	38	30	24	36	29	24	35	28	23	21
9	51	36	27	21	49	35	27	21	34	26	21	33	26	21	32	25	20	18
10	47	33	24	19	46	32	24	18	31	24	18	30	23	18	29	23	18	16

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	20357	20357	20357
5°	21833	20668	20202
10°	23331	21850	21109
15°	25160	23959	22071
20°	27874	27097	23569
25°	29559	30839	24474
30°	31355	34877	24693
35°	37520	40758	24325
40°	48345	46311	22376
45°	58845	54766	19740
50°	66281	66642	16145
55°	67515	93238	12890
60°	62995	144158	11007
65°	30439	149450	9571
70°	23944	137072	9500
75°	13451	39327	9480
80°	6874	19093	9547
85°	3804	20162	11032



TEST NUMBER: P22198

CATALOG NUMBER: FM1-B02-LED-E1-T2-CTG125-WH

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	60.9	1.5
10°-20°	200.6	4.9
20°-30°	371.9	9.0
30°-40°	575.5	13.9
40°-50°	802.3	19.4
50°-60°	1001.4	24.2
60°-70°	811.7	19.6
70°-80°	259.4	6.3
80°-90°	47.4	1.1
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°	633.4	15.3
0°-40°	1208.9	29.3
0°-60°	3012.6	72.9
0°-90°	4131.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4131.2	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	614	614	614	614	614	
5°	656	647	621	607	607	64
15°	733	731	698	683	643	210
25°	808	790	843	816	669	373
35°	927	968	1007	880	601	597
45°	1255	1347	1168	767	421	956
55°	1168	1527	1613	538	223	1026
65°	388	692	1905	174	122	498
75°	105	176	307	94	74	128
85°	10	36	53	48	29	14
90°	0	0	0	0	0	



TEST NUMBER: P22198

CATALOG NUMBER: FM1-B02-LED-E1-T2-CTG125-WH

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	77.5°	85°
0°	614	614	614	614	614	614	614	614	614	614	614
2.5°	634	635	634	632	629	627	623	619	615	615	612
5°	656	656	656	653	650	647	642	635	630	628	624
7.5°	674	675	676	675	673	669	663	655	647	644	638
10°	693	692	695	694	693	689	684	675	665	662	654
12.5°	710	711	714	714	713	712	707	696	685	682	673
15°	733	733	736	736	735	731	726	718	707	705	700
17.5°	762	762	763	760	754	747	742	738	735	734	731
20°	790	790	791	785	774	760	757	761	767	767	766
22.5°	806	807	808	801	787	773	776	789	799	800	799
25°	808	810	812	807	797	790	800	820	835	835	840
27.5°	805	807	813	812	810	814	828	851	869	869	873
30°	819	820	829	837	839	847	862	885	904	903	905
32.5°	861	862	873	886	895	897	902	922	943	943	947
35°	927	929	944	959	968	968	960	967	995	996	996
37.5°	1021	1024	1041	1054	1054	1052	1032	1008	1021	1021	1017
40°	1117	1120	1136	1145	1144	1147	1116	1058	1047	1048	1044
42.5°	1179	1183	1204	1218	1230	1249	1217	1126	1082	1081	1080
45°	1255	1257	1272	1288	1314	1347	1337	1209	1117	1118	1121
47.5°	1294	1298	1319	1354	1400	1445	1464	1324	1162	1158	1168
50°	1285	1287	1309	1359	1439	1521	1586	1503	1233	1214	1236
52.5°	1233	1236	1264	1319	1408	1550	1677	1716	1361	1303	1320
55°	1168	1174	1208	1262	1359	1527	1736	1937	1658	1511	1509
57.5°	1070	1077	1122	1202	1287	1459	1745	2203	2231	2020	1879
60°	950	956	988	1057	1161	1292	1576	2279	2615	2567	2239
61°	895	902	919	977	1077	1203	1465	2246	2612	2646	2294
62.5°	695	709	749	816	910	1037	1269	2169	2504	2614	2273
65°	388	395	428	497	595	692	893	1928	2242	2391	2148
67.5°	320	324	341	377	425	478	561	1634	1949	2092	1976
70°	247	251	266	299	340	373	386	1227	1628	1762	1708
72.5°	182	184	194	212	228	271	362	802	1184	1222	1090
75°	105	109	119	127	135	176	313	481	570	547	376
77.5°	60	62	70	73	84	104	209	315	236	237	166
80°	36	39	47	51	59	67	100	234	155	177	109
82.5°	19	21	29	36	43	49	59	152	97	112	74
85°	10	11	18	25	31	36	43	64	55	55	54
87.5°	4	6	11	17	22	28	33	36	37	37	39
90°	0	0	0	0	0	0	0	0	0	0	0



TEST NUMBER: P22198

CATALOG NUMBER: FM1-B02-LED-E1-T2-CTG125-WH

CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	614	614	614	614	614	614	614	614	614	614	614
2.5°	611	609	606	605	604	604	606	606	606	606	605
5°	621	619	614	611	609	607	607	607	608	607	607
7.5°	634	632	625	623	620	619	618	617	617	616	616
10°	649	646	641	638	636	634	632	630	628	626	627
12.5°	671	668	665	662	660	656	651	644	637	634	634
15°	698	698	699	696	694	683	672	659	649	645	643
17.5°	732	734	737	735	729	714	696	680	667	660	657
20°	768	771	780	779	768	747	723	698	679	669	668
22.5°	803	811	825	825	810	782	747	712	686	673	671
25°	843	852	873	874	856	816	768	723	689	671	669
27.5°	876	891	915	925	900	848	785	725	685	662	660
30°	911	931	968	978	939	872	790	721	675	649	645
32.5°	957	980	1028	1028	974	882	784	707	658	631	627
35°	1007	1031	1088	1075	1002	880	767	684	633	605	601
37.5°	1035	1071	1139	1118	1020	867	742	652	598	569	563
40°	1070	1124	1190	1149	1021	843	706	611	554	523	517
42.5°	1117	1179	1234	1165	1005	812	661	564	507	475	469
45°	1168	1233	1267	1166	971	767	614	517	458	427	421
47.5°	1222	1287	1287	1154	929	717	566	464	405	376	371
50°	1292	1354	1305	1133	881	666	509	404	348	319	313
52.5°	1391	1457	1334	1109	830	608	441	341	288	264	260
55°	1613	1666	1409	1097	777	538	366	275	242	227	223
57.5°	1972	2002	1546	1118	722	452	287	225	204	196	193
60°	2174	2113	1487	1026	643	352	221	185	173	168	166
61°	2162	2071	1405	952	591	307	200	173	163	158	156
62.5°	2085	1971	1262	815	496	250	175	157	148	143	141
65°	1905	1773	1045	621	327	174	147	137	129	124	122
67.5°	1699	1558	865	456	201	139	129	122	116	112	110
70°	1414	1284	654	309	143	119	115	109	104	100	98
72.5°	895	844	423	190	116	107	102	98	93	89	87
75°	307	319	207	122	101	94	90	86	82	77	74
77.5°	148	144	120	100	89	82	78	73	70	66	62
80°	100	99	88	80	76	72	66	60	58	53	50
82.5°	71	72	68	65	64	61	55	49	46	41	38
85°	53	54	54	53	52	48	44	39	36	31	29
87.5°	39	39	40	41	39	36	33	30	27	23	21
90°	0	0	0	0	0	0	0	0	0	0	0

(END OF REPORT)