

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: P30111

Luminaire Tested: **CRF-24-317-UNV-IK12**

Issue Date: 3/3/2020



**Test Information**

Test Method: LM-79-08  
Report Number: P30111  
Test Lab: METALUX RESEARCH LABS  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: CRF-24-317-UNV-IK12  
Description: FAILSAFE TRISEAL CRF SERIES 2x2 3L T8  
Light Source: (3) DOUBLE ENDED T8 2 FOOT LINEAR FLUORESCENT LAMPS  
F17W T8 17 WATTS  
Ballast/Driver: ADVANCE CENTIUM  
ICN-3P32-SC

**Summary**

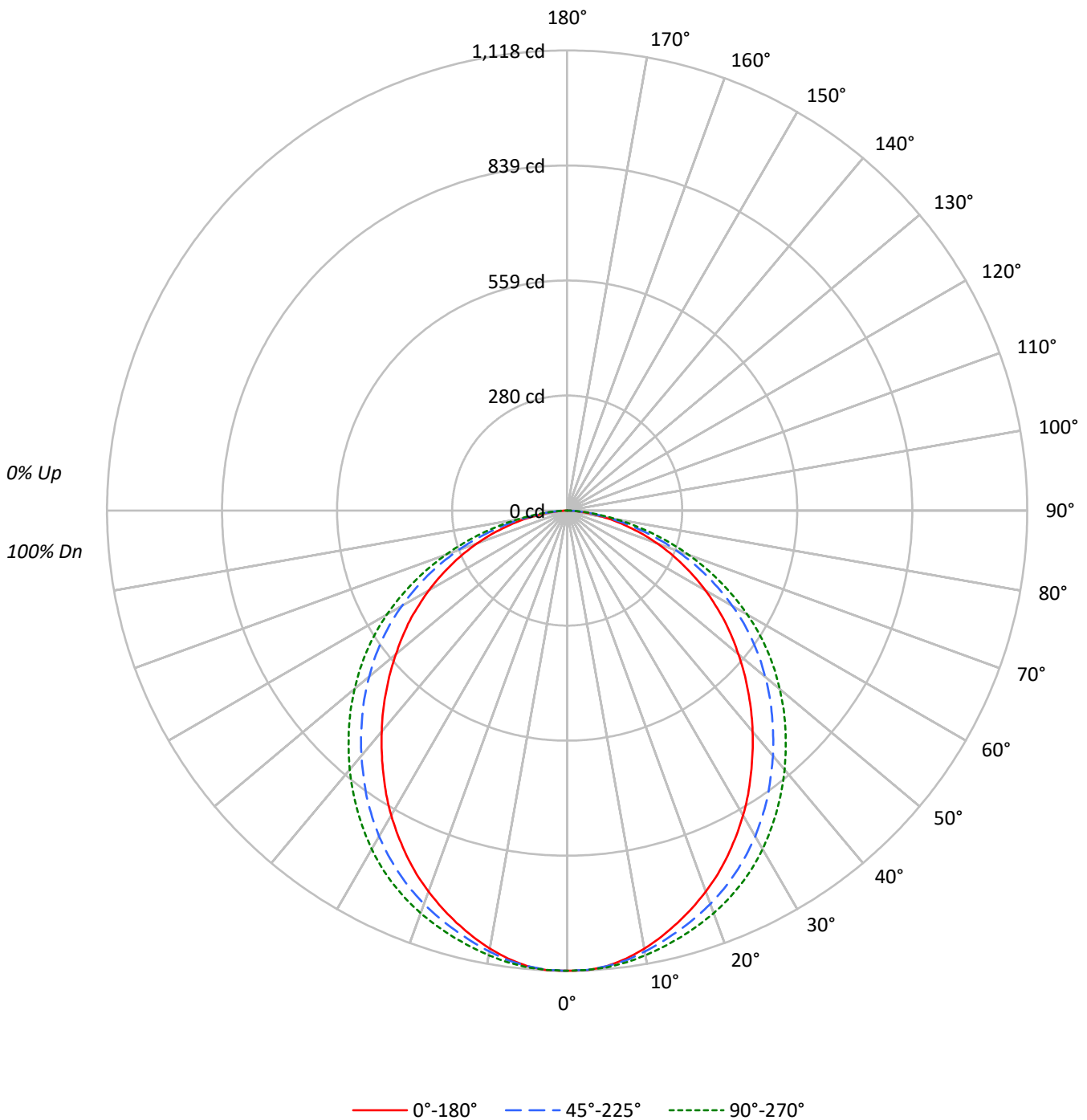
Lumens per Lamp: 1325 (3 lamps)  
Luminaire Lumens: 3003.2 lumens  
Efficiency: 75.6%  
Efficacy: 64.0 lumens/watt  
Spacing Criteria (0/90/45): 1.15 / 1.26 / 1.34  
Luminous Opening: Rectangular (W 1.75' x L: 1.75' x H: 0')  
CIE Type: Direct

Input Watts (W): 46.9  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT

TEST NUMBER: P30111

CATALOG NUMBER: CRF-24-317-UNV-IK12

### Luminous Intensity Polar Plot





TEST NUMBER: P30111

CATALOG NUMBER: CRF-24-317-UNV-IK12

**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	90	90	90	90	88	88	88	88	84	84	84		80	80	80		77	77	77	76
1	82	79	76	73	80	77	74	71	74	71	69		71	69	67		68	67	65	64
2	75	69	64	59	73	67	63	59	65	61	57		62	59	56		60	57	55	53
3	68	60	54	49	66	59	53	49	57	52	48		55	51	47		53	49	46	45
4	63	54	47	42	61	53	46	42	51	45	41		49	44	40		47	43	40	38
5	58	48	41	36	56	47	41	36	45	40	35		44	39	35		43	38	35	33
6	53	43	36	32	52	42	36	31	41	35	31		40	35	31		39	34	31	29
7	49	39	33	28	48	38	32	28	37	32	28		36	31	27		35	31	27	26
8	46	36	29	25	45	35	29	25	34	29	25		33	28	24		32	28	24	23
9	43	33	27	22	42	32	26	22	31	26	22		31	26	22		30	25	22	21
10	40	30	24	20	39	30	24	20	29	24	20		28	24	20		28	23	20	19

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

	0°	45°	90°
0°	3929	3929	3929
5°	3920	3920	3930
10°	3858	3883	3915
15°	3773	3839	3901
20°	3684	3804	3894
25°	3583	3762	3882
30°	3470	3709	3856
35°	3342	3643	3814
40°	3216	3570	3771
45°	3092	3499	3728
50°	2969	3434	3685
55°	2862	3364	3640
60°	2727	3262	3557
65°	2570	3110	3418
70°	2384	2888	3227
75°	2118	2553	2920
80°	1781	2105	2449
85°	1331	1492	1774



TEST NUMBER: P30111

CATALOG NUMBER: CRF-24-317-UNV-IK12

**ZONAL LUMENS:**

**CANDELA DISTRIBUTION:**

Zone	Lumens	% Fixture	% Lamp		0°	22.5°	45°	67.5°	90°	Flux
0°-10°	105.4	3.5	2.7	0°	1118	1118	1118	1118	1118	
10°-20°	297.6	9.9	7.5	5°	1111	1110	1111	1113	1114	105
20°-30°	445.0	14.8	11.2	15°	1037	1042	1055	1067	1072	292
30°-40°	525.9	17.5	13.2	25°	924	938	970	994	1001	425
40°-50°	536.4	17.9	13.5	35°	779	800	849	880	889	487
50°-60°	482.4	16.1	12.1	45°	622	649	704	741	750	480
60°-70°	363.8	12.1	9.2	55°	467	495	549	587	594	417
70°-80°	199.4	6.6	5.0	65°	309	332	374	406	411	306
80°-90°	47.1	1.6	1.2	75°	156	168	188	209	215	166
90°-100°	0.1	0.0	0.0	85°	33	35	37	42	44	39
100°-110°	0.0	0.0	0.0	90°	1	1	0	0	0	2
110°-120°	0.0	0.0	0.0	95°	0	0	0	0	0	0
120°-130°	0.0	0.0	0.0	105°	0	0	0	0	0	0
130°-140°	0.0	0.0	0.0	115°	0	0	0	0	0	0
140°-150°	0.0	0.0	0.0	125°	0	0	0	0	0	0
150°-160°	0.0	0.0	0.0	135°	0	0	0	0	0	0
160°-170°	0.0	0.0	0.0	145°	0	0	0	0	0	0
170°-180°	0.0	0.0	0.0	155°	0	0	0	0	0	0
0°-30°	848.0	28.2	21.3	165°	0	0	0	0	0	0
0°-40°	1373.9	45.7	34.6	175°	0	0	0	0	0	0
0°-60°	2392.8	79.7	60.2	180°	0	0	0	0	0	0
0°-90°	3003.1	100.0	75.5							
90°-120°	0.1	0.0	0.0							
90°-150°	0.1	0.0	0.0							
90°-180°	0.0	0.0	0.0							
0°-180°	3003.2	100.0	75.6							



TEST NUMBER: P30111

CATALOG NUMBER: CRF-24-317-UNV-IK12

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1118	1118	1118	1118	1118
2.5°	1118	1117	1117	1117	1117
5°	1111	1110	1111	1113	1114
7.5°	1098	1099	1102	1105	1107
10°	1081	1082	1088	1094	1097
12.5°	1060	1063	1072	1081	1085
15°	1037	1042	1055	1067	1072
17.5°	1012	1020	1037	1052	1057
20°	985	995	1017	1035	1041
22.5°	956	968	995	1016	1022
25°	924	938	970	994	1001
27.5°	890	906	943	971	977
30°	855	873	914	943	950
32.5°	818	837	882	913	920
35°	779	800	849	880	889
37.5°	740	762	813	847	856
40°	701	725	778	813	822
42.5°	662	687	741	778	786
45°	622	649	704	741	750
47.5°	583	610	667	704	713
50°	543	572	628	666	674
52.5°	505	533	590	627	635
55°	467	495	549	587	594
57.5°	427	455	508	545	551
60°	388	415	464	500	506
62.5°	349	373	419	453	459
65°	309	332	374	406	411
67.5°	271	291	328	357	363
70°	232	250	281	308	314
72.5°	194	209	234	258	264
75°	156	168	188	209	215
77.5°	121	130	144	161	167
80°	88	95	104	116	121
82.5°	59	62	68	76	80
85°	33	35	37	42	44
87.5°	12	13	13	15	16
90°	1	1	0	0	0
92.5°	0	0	0	0	0
95°	0	0	0	0	0
97.5°	0	0	0	0	0
100°	0	0	0	0	0
102.5°	0	0	0	0	0
105°	0	0	0	0	0
107.5°	0	0	0	0	0
110°	0	0	0	0	0



TEST NUMBER: P30111

CATALOG NUMBER: CRF-24-317-UNV-IK12

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	0	0	0	0	0
115°	0	0	0	0	0
117.5°	0	0	0	0	0
120°	0	0	0	0	0
122.5°	0	0	0	0	0
125°	0	0	0	0	0
127.5°	0	0	0	0	0
130°	0	0	0	0	0
132.5°	0	0	0	0	0
135°	0	0	0	0	0
137.5°	0	0	0	0	0
140°	0	0	0	0	0
142.5°	0	0	0	0	0
145°	0	0	0	0	0
147.5°	0	0	0	0	0
150°	0	0	0	0	0
152.5°	0	0	0	0	0
155°	0	0	0	0	0
157.5°	0	0	0	0	0
160°	0	0	0	0	0
162.5°	0	0	0	0	0
165°	0	0	0	0	0
167.5°	0	0	0	0	0
170°	0	0	0	0	0
172.5°	0	0	0	0	0
175°	0	0	0	0	0
177.5°	0	0	0	0	0
180°	0	0	0	0	0

(END OF REPORT)