

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: BALLABS TEST NO. 9188.0

Luminaire Tested: **MAG-24-432-120V-IK12-EB81-CRP**

Issue Date: 3/3/2020

This test was performed under the Supervised Manufacturer's Testing Program. The results of this test have not been influenced by sources from within Cooper Lighting Solutions or from external interests.

**Test Information**

Test Method: LM-79-08  
Report Number: BALLABS TEST NO. 9188.0  
Test Lab:  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: MAG-24-432-120V-IK12-EB81-CRP  
Description: 4/32W T8 LAMP 2x4 RECESSED CLEANROOM LUMINAIRE  
Light Source: -  
F32T8/735/RS  
Ballast/Driver: ADVANCE BALLAST #REL-4P32-RH-TP

Luminaire Equipment:	<u>Sample No.</u>	<u>Condition</u>	<u>Description</u>
	AS-5443-1	Good	WHITE TWIN R-EVOLVE FLOOD
	AS-5443-2	Good	REFLECTOR
	AS-5443-3	Good	DRIVER
	AS-5443-4	Good	UPPER MODULE
	AS-5443-5	Good	LENS
	AS-5443-6	Good	DRIVER 2
	AS-5443-7	Good	TRIM RING

**Summary**

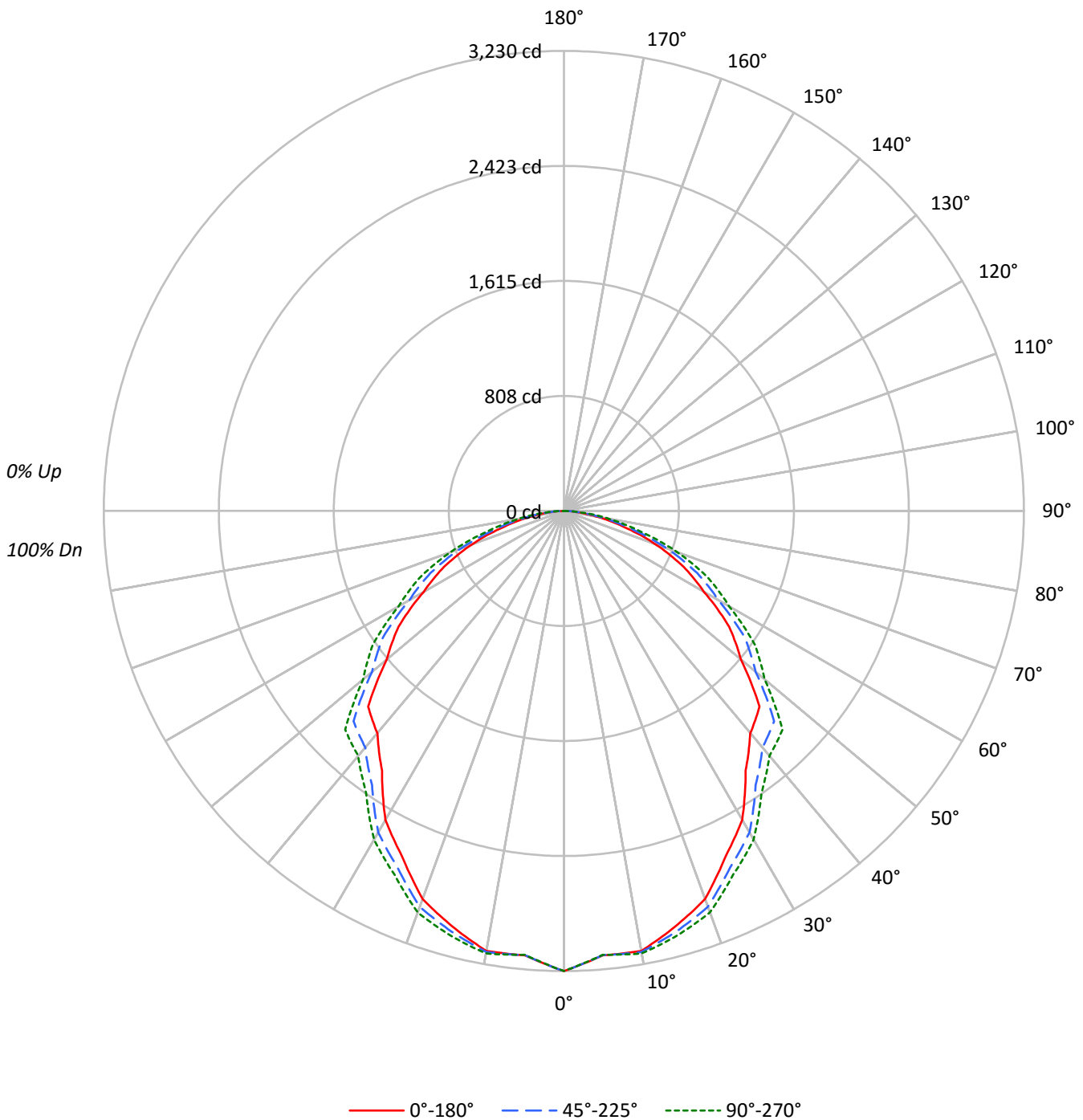
Lumens per Lamp: 2850 (4 lamps)  
Luminaire Lumens: 8509.4 lumens  
Efficiency: 74.6%  
Efficacy: 82.6 lumens/watt  
Spacing Criteria (0/90/45): 1.16 / 1.22 / 1.34  
Luminous Opening: Rectangular (W 1.73' x L: 3.64' x H: 0')  
CIE Type: Direct

Input Watts (W): 103  
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



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20					20					20					20				
RC	80					70					50					30				
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0		
RCR																				
0	89	89	89	89	87	87	87	87	83	83	83	79	79	79	76	76	76	75		
1	81	78	75	72	79	76	73	71	73	71	68	70	68	66	67	66	64	63		
2	74	68	63	59	72	67	62	58	64	60	57	62	58	55	59	57	54	53		
3	68	60	54	49	66	59	53	49	56	52	48	54	50	47	52	49	46	44		
4	62	53	47	42	60	52	46	41	50	45	41	48	44	40	47	43	40	38		
5	57	47	41	36	55	47	40	36	45	40	35	44	39	35	42	38	35	33		
6	53	43	36	31	51	42	36	31	41	35	31	39	34	31	38	34	30	29		
7	49	39	32	28	48	38	32	28	37	32	27	36	31	27	35	30	27	26		
8	46	35	29	25	44	35	29	25	34	28	25	33	28	24	32	28	24	23		
9	43	33	26	22	41	32	26	22	31	26	22	30	26	22	30	25	22	21		
10	40	30	24	20	39	30	24	20	29	24	20	28	23	20	28	23	20	19		

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

	0°	45°	90°
0°	5505	5505	5505
5°	5359	5355	5352
10°	5428	5441	5459
15°	5331	5393	5444
20°	5258	5363	5441
25°	5042	5194	5296
30°	4928	5129	5245
35°	4630	4886	5033
40°	4532	4826	4997
45°	4683	5033	5233
50°	4304	4662	4882
55°	4211	4609	4865
60°	3876	4271	4571
65°	3743	4166	4529
70°	3419	3842	4236
75°	2911	3260	3681
80°	2415	2719	3200
85°	1760	2014	2445



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**ZONAL LUMENS:**

**CANDELA DISTRIBUTION:**

Zone	Lumens	% Fixture	% Lamp		0°	22.5°	45°	67.5°	90°	Flux
0°-10°	300.4	3.5	2.6	0°	3230	3230	3230	3230	3230	
10°-20°	862.6	10.1	7.6	5°	3132	3132	3130	3125	3128	300
20°-30°	1275.4	15.0	11.2	15°	3021	3032	3056	3077	3085	853
30°-40°	1474.7	17.3	12.9	25°	2681	2700	2762	2807	2816	1241
40°-50°	1552.3	18.2	13.6	35°	2225	2266	2348	2402	2419	1407
50°-60°	1355.8	15.9	11.9	45°	1943	1986	2088	2149	2171	1457
60°-70°	1008.9	11.9	8.8	55°	1417	1456	1551	1610	1637	1251
70°-80°	541.3	6.4	4.7	65°	928	963	1033	1097	1123	911
80°-90°	138.0	1.6	1.2	75°	442	461	495	541	559	479
90°-100°	0.0	0.0	0.0	85°	90	95	103	119	125	119
100°-110°	0.0	0.0	0.0	90°	11	11	11	12	12	
110°-120°	0.0	0.0	0.0							
120°-130°	0.0	0.0	0.0							
130°-140°	0.0	0.0	0.0							
140°-150°	0.0	0.0	0.0							
150°-160°	0.0	0.0	0.0							
160°-170°	0.0	0.0	0.0							
170°-180°	0.0	0.0	0.0							
0°-30°	2438.4	28.7	21.4							
0°-40°	3913.1	46.0	34.3							
0°-60°	6821.2	80.2	59.8							
0°-90°	8509.4	100.0	74.6							
90°-120°	0.0	0.0	0.0							
90°-150°	0.0	0.0	0.0							
90°-180°	0.0	0.0	0.0							
0°-180°	8509.4	100.0	74.6							



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3230	3230	3230	3230	3230
5°	3132	3132	3130	3125	3128
10°	3136	3138	3144	3147	3154
15°	3021	3032	3056	3077	3085
20°	2899	2914	2957	2984	3000
25°	2681	2700	2762	2807	2816
30°	2504	2536	2606	2655	2665
35°	2225	2266	2348	2402	2419
40°	2037	2077	2169	2225	2246
45°	1943	1986	2088	2149	2171
50°	1623	1664	1758	1816	1841
55°	1417	1456	1551	1610	1637
60°	1137	1175	1253	1315	1341
65°	928	963	1033	1097	1123
70°	686	715	771	828	850
75°	442	461	495	541	559
80°	246	258	277	312	326
85°	90	95	103	119	125
90°	11	11	11	12	12

(END OF REPORT)