

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: P31017

Luminaire Tested: **FSR-TG-D24-332-UNV-80/86-EB81**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: P31017
Test Lab: INNOVATION CENTER-P3
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: FSR-TG-D24-332-UNV-80/86-EB81
Description: FAIL-SAFE MAXIMUM SECURITY 2X4 CONFINEMENT-CORRECTIONAL
RECESSED FLUORESCENT LUMINAIRE WITH AN INNER 0.187 INCH
PRISMATIC POLYCARBONATE LENS, A .250 CLEAR POLYCARBONATE LENS
ON ENVIRONMENTAL SIDE, A T-GRID CEILING TYPE AND A 16 GAUGE
WHITE STEEL HOUSING---RELATIVE PHOTOMETRY IS BASED ON
RELATIONAL FACTORS CREATED USING MANUFACTURERS PUBLISHED DATA
AND A BARE LAMP SUM FOR THE LAMP UNDER TEST IN
GONIOPHOTOMETER WITH TEST DISTANCE OF 24.0 FT
Light Source: (3) T8 LINEAR FLUORESCENT LAMPS 5000K
GE F32T8-SPX50-ECO
Ballast/Driver: (1) SYLVANIA ELECTRONIC BALLAST
QUICKTRONICS QTP3x32T8/UNV ISN-SC

Summary

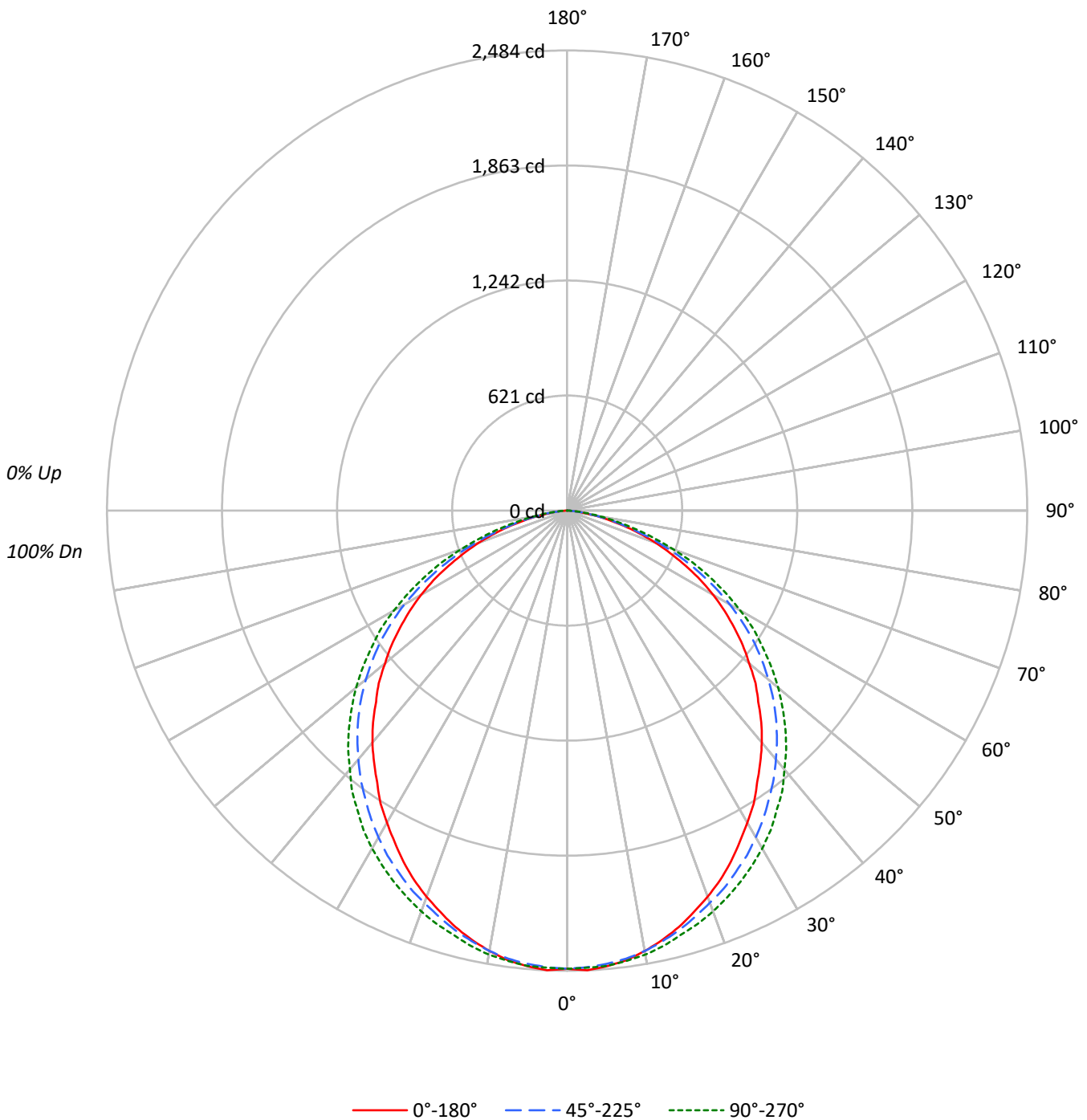
Lumens per Lamp: 3100 (3 lamps)
Luminaire Lumens: 6561.9 lumens
Efficiency: 70.6%
Efficacy: 79.5 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.27 / 1.35
Luminous Opening: Rectangular (W 1.75' x L: 3.83' x H: 0')
CIE Type: Direct

Input Watts (W): 82.5
Input Voltage (V): 120.05
Input Current (A_{in}): 0.6880
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				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	84	84	84	84	82	82	82	82	78	78	78	75	75	75	72	72	72	71
1	77	74	71	69	75	72	70	67	69	67	65	67	65	63	64	63	61	60
2	70	65	60	56	69	63	59	56	61	57	54	59	56	53	57	54	52	50
3	64	57	51	47	63	56	51	47	54	49	46	52	48	45	50	47	44	43
4	59	51	45	40	57	50	44	40	48	43	39	46	42	39	45	41	38	37
5	54	45	39	34	53	44	39	34	43	38	34	42	37	33	40	36	33	32
6	50	41	35	30	49	40	34	30	39	34	30	38	33	29	37	32	29	28
7	46	37	31	27	45	36	31	26	35	30	26	34	30	26	33	29	26	25
8	43	34	28	24	42	33	28	24	32	27	24	31	27	23	31	26	23	22
9	40	31	25	21	39	31	25	21	30	25	21	29	24	21	28	24	21	20
10	38	29	23	19	37	28	23	19	28	23	19	27	22	19	26	22	19	18

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3968	3968	3968
5°	3977	3956	3974
10°	3933	3933	3966
15°	3867	3892	3939
20°	3787	3847	3932
25°	3702	3812	3916
30°	3604	3774	3902
35°	3504	3722	3865
40°	3425	3672	3821
45°	3311	3622	3780
50°	3203	3540	3712
55°	3074	3435	3606
60°	2920	3257	3469
65°	2680	2977	3227
70°	2393	2580	2843
75°	1965	2052	2350
80°	1349	1423	1691
85°	663	773	939



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ZONAL LUMENS:

CANDELA DISTRIBUTION:

Zone	Lumens	% Fixture	% Lamp		0°	22.5°	45°	67.5°	90°	Flux
0°-10°	233.6	3.6	2.5	0°	2473	2473	2473	2473	2473	
10°-20°	661.8	10.1	7.1	5°	2469	2462	2456	2460	2467	234
20°-30°	992.0	15.1	10.7	15°	2328	2329	2343	2363	2371	656
30°-40°	1183.6	18.0	12.7	25°	2091	2107	2153	2200	2212	962
40°-50°	1215.2	18.5	13.1	35°	1789	1824	1900	1961	1973	1122
50°-60°	1078.0	16.4	11.6	45°	1459	1502	1596	1647	1666	1129
60°-70°	771.5	11.8	8.3	55°	1099	1130	1228	1279	1289	983
70°-80°	363.3	5.5	3.9	65°	706	718	784	844	850	701
80°-90°	62.8	1.0	0.7	75°	317	306	331	375	379	335
90°-100°	0.0	0.0	0.0	85°	36	37	42	48	51	55
100°-110°	0.0	0.0	0.0	90°	0	0	0	0	0	
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°	1887.4	28.8	20.3							
0°-40°	3071.1	46.8	33.0							
0°-60°	5364.4	81.7	57.7							
0°-90°	6561.9	100.0	70.6							
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°	6561.9	100.0	70.6							



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2473	2473	2473	2473	2473
2.5°	2484	2473	2467	2468	2470
5°	2469	2462	2456	2460	2467
7.5°	2448	2441	2440	2447	2452
10°	2414	2411	2414	2425	2434
12.5°	2374	2373	2381	2395	2407
15°	2328	2329	2343	2363	2371
17.5°	2273	2279	2299	2329	2340
20°	2218	2224	2253	2289	2303
22.5°	2159	2167	2209	2244	2259
25°	2091	2107	2153	2200	2212
27.5°	2017	2045	2100	2145	2161
30°	1945	1972	2037	2093	2106
32.5°	1875	1902	1971	2029	2045
35°	1789	1824	1900	1961	1973
37.5°	1713	1743	1830	1885	1908
40°	1635	1663	1753	1811	1824
42.5°	1551	1583	1676	1730	1750
45°	1459	1502	1596	1647	1666
47.5°	1379	1412	1510	1561	1578
50°	1283	1318	1418	1468	1487
52.5°	1195	1226	1325	1380	1391
55°	1099	1130	1228	1279	1289
57.5°	1007	1030	1123	1178	1194
60°	910	931	1015	1069	1081
62.5°	813	825	901	955	965
65°	706	718	784	844	850
67.5°	605	609	669	727	733
70°	510	505	550	602	606
72.5°	407	401	437	483	488
75°	317	306	331	375	379
77.5°	221	213	237	266	273
80°	146	142	154	177	183
82.5°	83	81	92	103	109
85°	36	37	42	48	51
87.5°	11	13	15	19	21
90°	0	0	0	0	0

(END OF REPORT)