

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: BALL 4698

Luminaire Tested: **HMS24CR-400M-93**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: BALL 4698
Test Lab:
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: HMS24CR-400M-93
Description:
Light Source: -
MS400/C/HOR
Ballast/Driver: -

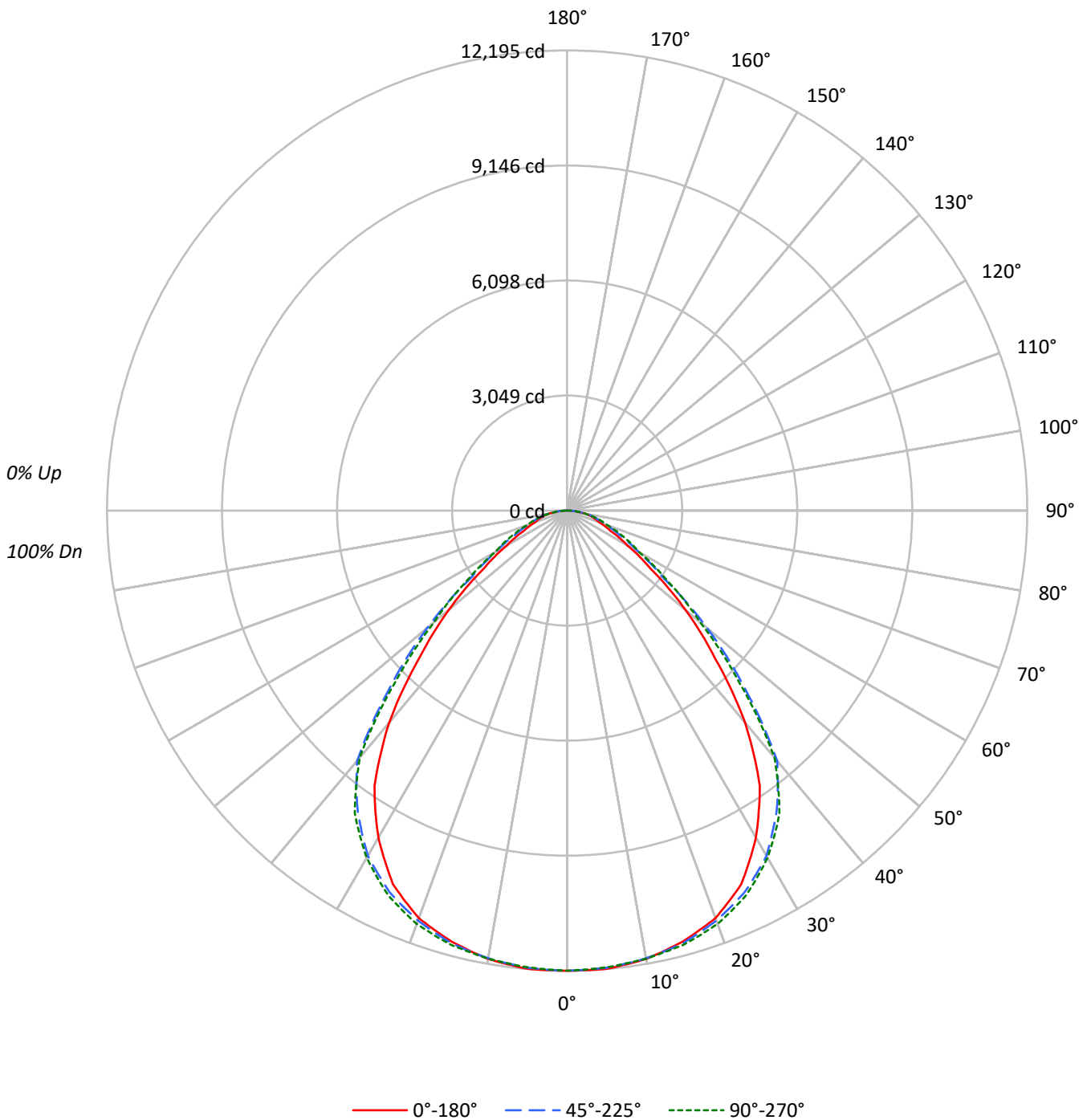
Summary

Lumens per Lamp: 40000 (1 lamp)
Luminaire Lumens: 25972.1 lumens
Efficiency: 64.9%
Efficacy: 64.9 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.28 / 1.3
Luminous Opening: Rectangular w/ Sides (W: 1.75' x L: 1.75' x H: 1')
CIE Type: Direct

Input Watts (W): 400
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									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	50	30	10	0													
RCR																																					
0	77	77	77	77	76	76	76	76	72	72	72	69	69	69	66	66	66	65						65													
1	72	69	67	65	70	68	66	64	65	63	62	63	61	60	60	59	58						57														
2	66	62	58	55	65	61	57	54	58	56	53	56	54	52	54	53	51						49														
3	61	55	51	47	60	54	50	47	53	49	46	51	48	45	49	47	45						43														
4	57	50	45	41	55	49	44	41	48	44	40	46	43	40	45	42	39						38														
5	53	45	40	36	51	45	40	36	43	39	36	42	38	35	41	38	35						34														
6	49	41	36	32	48	41	36	32	39	35	32	38	35	32	37	34	31						30														
7	46	38	32	29	45	37	32	29	36	32	29	35	31	28	34	31	28						27														
8	43	35	30	26	42	34	29	26	33	29	26	33	29	26	32	28	26						24														
9	40	32	27	24	39	32	27	24	31	27	24	30	26	23	30	26	23						22														
10	38	30	25	22	37	29	25	22	29	24	21	28	24	21	28	24	21						20														

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	42862	42862	42862
5°	40954	40066	40823
10°	39118	37633	39086
15°	37321	35501	37586
20°	35592	33425	36097
25°	33451	31403	34425
30°	30541	29234	32427
35°	27274	26541	30066
40°	22753	23681	26528
45°	17574	18267	20456
50°	13281	13509	14969
55°	9215	8847	10966
60°	6525	6386	7783
65°	4735	4656	6185
70°	3647	3494	4542
75°	3100	2722	3607
80°	2410	2001	2324
85°	1049	1028	1226



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ZONAL LUMENS:

CANDELA DISTRIBUTION:

Zone	Lumens	% Fixture	% Lamp		0°	22.5°	45°	67.5°	90°	Flux
0°-10°	1155.3	4.4	2.9	0°	12195	12195	12195	12195	12195	
10°-20°	3343.5	12.9	8.4	5°	12188	12123	12159	12102	12149	###
20°-30°	5100.8	19.6	12.8	15°	11827	11823	11869	11831	11911	3339
30°-40°	5885.3	22.7	14.7	25°	10924	10990	11149	11261	11242	5000
40°-50°	4889.6	18.8	12.2	35°	8900	9086	9686	9812	9811	5493
50°-60°	2928.7	11.3	7.3	45°	5556	5902	6645	6599	6467	4335
60°-70°	1569.4	6.0	3.9	55°	2731	3272	3110	3288	3250	2540
70°-80°	827.5	3.2	2.1	65°	1267	1579	1530	1607	1655	1309
80°-90°	272.0	1.0	0.7	75°	715	771	805	772	832	752
90°-100°	0.0	0.0	0.0	85°	196	248	261	248	229	244
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°	9599.6	37.0	24.0							
0°-40°	15484.9	59.6	38.7							
0°-60°	23303.2	89.7	58.3							
0°-90°	25972.1	100.0	64.9							
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°	25972.1	100.0	64.9							



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	12195	12195	12195	12195	12195
5°	12188	12123	12159	12102	12149
10°	12065	12000	12047	11996	12055
15°	11827	11823	11869	11831	11911
20°	11495	11463	11565	11547	11658
25°	10924	10990	11149	11261	11242
30°	10008	10153	10564	10593	10626
35°	8900	9086	9686	9812	9811
40°	7337	7754	8661	8573	8554
45°	5556	5902	6645	6599	6467
50°	4083	4377	4850	4836	4602
55°	2731	3272	3110	3288	3250
60°	1847	2282	2180	2310	2203
65°	1267	1579	1530	1607	1655
70°	912	1048	1095	1072	1136
75°	715	771	805	772	832
80°	505	505	552	505	487
85°	196	248	261	248	229
90°	0	0	0	0	0

(END OF REPORT)