

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: METALUX

Report Number: P388422

Luminaire Tested: **24CZ2-170VHE-SQR-UNV-L940-CD2-SDWPD1-U**

Issue Date: 2/28/2020

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: P388422  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2002-678-2)  
Test Lab: INNOVATION CENTER (G2)  
Issue Date: 2/28/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: 24CZ2-170VHE-SQR-UNV-L940-CD2-SDWPD1-U  
Description: 2x4 CRUZE LED TROFFER WITH 4000K, 90 LEDS, AND SQUARE LENS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.    Condition    Description

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 13624.2 lumens  
Efficiency: N/A  
Efficacy: 110.4 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.33 / 1.41  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

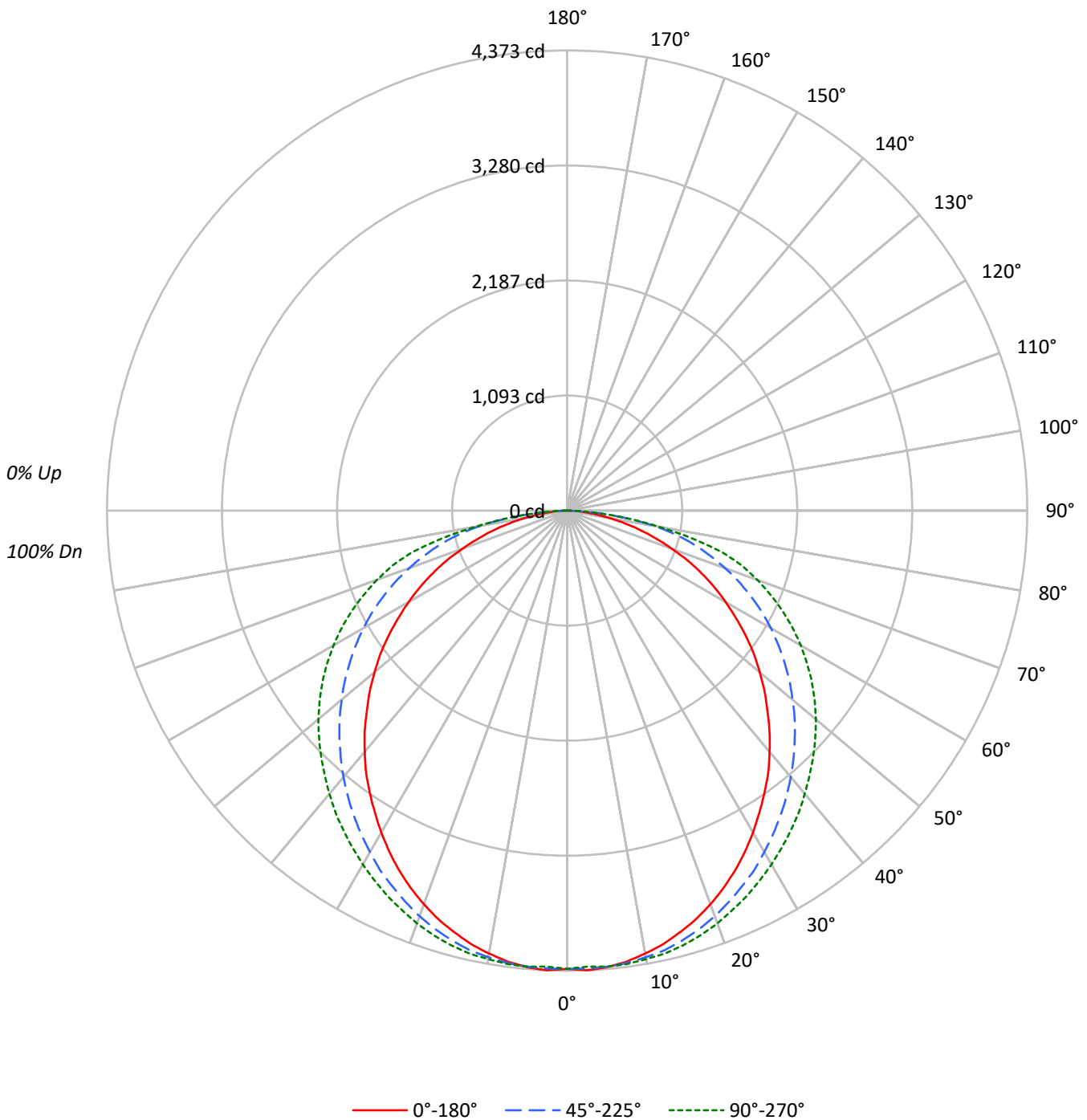
Input Watts (W): 123.4  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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

RF	20				20				20				20				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	98	89	81	75	95	87	80	74	83	78	73	80	75	71	77	73	69	67
3	89	77	69	62	86	76	68	61	73	66	60	70	64	59	67	62	58	56
4	81	68	59	52	78	67	58	52	64	57	51	62	55	50	60	54	49	47
5	74	61	51	44	72	60	51	44	57	50	44	55	49	43	54	48	43	41
6	68	55	45	39	66	54	45	38	52	44	38	50	43	38	48	42	37	35
7	63	49	40	34	62	49	40	34	47	39	34	45	39	33	44	38	33	31
8	59	45	36	30	57	44	36	30	43	35	30	42	35	30	40	34	30	28
9	55	41	33	27	54	41	33	27	39	32	27	38	32	27	37	31	27	25
10	52	38	30	25	50	37	30	24	36	29	24	36	29	24	35	29	24	22

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

	0°	45°	90°
0°	5860	5860	5860
5°	5882	5876	5876
10°	5839	5889	5913
15°	5778	5891	5953
20°	5701	5875	5978
25°	5604	5844	5998
30°	5487	5822	6032
35°	5372	5808	6089
40°	5255	5808	6172
45°	5119	5821	6292
50°	5000	5857	6460
55°	4855	5921	6659
60°	4685	6017	6901
65°	4483	6130	7190
70°	4159	6283	7557
75°	3765	6502	7905
80°	3172	6519	6798
85°	2431	4931	4931



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	413.4	3.0
10°-20°	1189.4	8.7
20°-30°	1806.5	13.3
30°-40°	2197.4	16.1
40°-50°	2339.5	17.2
50°-60°	2228.3	16.4
60°-70°	1863.5	13.7
70°-80°	1242.4	9.1
80°-90°	343.8	2.5
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°	3409.3	25.0
0°-40°	5606.7	41.2
0°-60°	10174.5	74.7
0°-90°	13624.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	13624.2	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4355	4355	4355	4355	4355	
5°	4355	4328	4350	4350	4350	413
15°	4148	4157	4229	4260	4274	1170
25°	3775	3824	3937	4004	4040	1738
35°	3271	3365	3536	3653	3707	2047
45°	2690	2834	3059	3230	3307	2080
55°	2070	2250	2524	2744	2839	1850
65°	1408	1615	1926	2164	2258	1391
75°	724	954	1251	1462	1521	767
85°	158	292	319	315	319	190
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4355.0	4355.0	4355.0	4355.0	4355.0
2.5°	4373.0	4341.5	4355.0	4355.0	4337.0
5°	4355.0	4328.0	4350.5	4350.5	4350.5
7.5°	4323.5	4301.0	4337.0	4346.0	4346.0
10°	4274.0	4265.0	4310.0	4323.5	4328.0
12.5°	4220.0	4215.5	4278.5	4296.5	4310.0
15°	4148.0	4157.0	4229.0	4260.5	4274.0
17.5°	4071.5	4089.5	4170.5	4215.5	4229.0
20°	3981.5	4008.5	4103.0	4148.0	4175.0
22.5°	3882.6	3923.1	4022.0	4076.0	4107.5
25°	3774.6	3824.1	3936.6	4004.0	4040.0
27.5°	3657.6	3720.6	3851.1	3927.6	3963.6
30°	3531.7	3603.6	3747.6	3837.6	3882.6
32.5°	3401.2	3486.7	3644.1	3743.1	3797.1
35°	3270.7	3365.2	3536.2	3653.1	3707.1
37.5°	3140.2	3234.7	3423.7	3549.7	3617.1
40°	2991.8	3104.3	3306.7	3446.2	3513.7
42.5°	2847.8	2969.3	3185.2	3338.2	3410.2
45°	2690.4	2834.3	3059.3	3230.2	3306.7
47.5°	2546.4	2690.4	2933.3	3113.3	3198.7
50°	2388.9	2541.9	2798.3	2996.3	3086.3
52.5°	2236.0	2393.4	2663.4	2874.8	2964.8
55°	2069.5	2249.5	2523.9	2744.3	2838.8
57.5°	1903.0	2096.5	2379.9	2609.4	2703.9
60°	1741.1	1939.0	2236.0	2465.4	2564.4
62.5°	1579.1	1777.1	2087.5	2321.4	2415.9
65°	1408.2	1615.1	1925.5	2164.0	2258.5
67.5°	1237.2	1453.2	1763.6	2002.0	2092.0
70°	1057.2	1286.7	1597.1	1831.1	1921.0
72.5°	890.8	1120.2	1426.2	1655.6	1741.1
75°	724.3	953.8	1250.7	1462.1	1520.6
77.5°	562.4	791.8	1057.2	1196.7	1210.2
80°	409.4	625.4	841.3	881.8	877.3
82.5°	274.4	467.9	580.4	584.9	598.4
85°	157.5	292.4	319.4	314.9	319.4
87.5°	63.0	103.5	90.0	67.5	67.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)