

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: P391133

Luminaire Tested: **24CZ2-170VHE-HRP-UNV-L940-CD2-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: P391133  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1808-918-19)  
Test Lab: INNOVATIONS CENTER(G3)  
Issue Date: 2/28/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: 24CZ2-170VHE-HRP-UNV-L940-CD2-U  
Description: 2x4 CRUZE LED TROFFER WITH 4000K, 90 LEDS, AND HRP LENS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.    Condition    Description

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 12341.8 lumens  
Efficiency: N/A  
Efficacy: 100.0 lumens/watt  
Spacing Criteria (0/90/45): 1.26 / 1.3 / 1.41  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

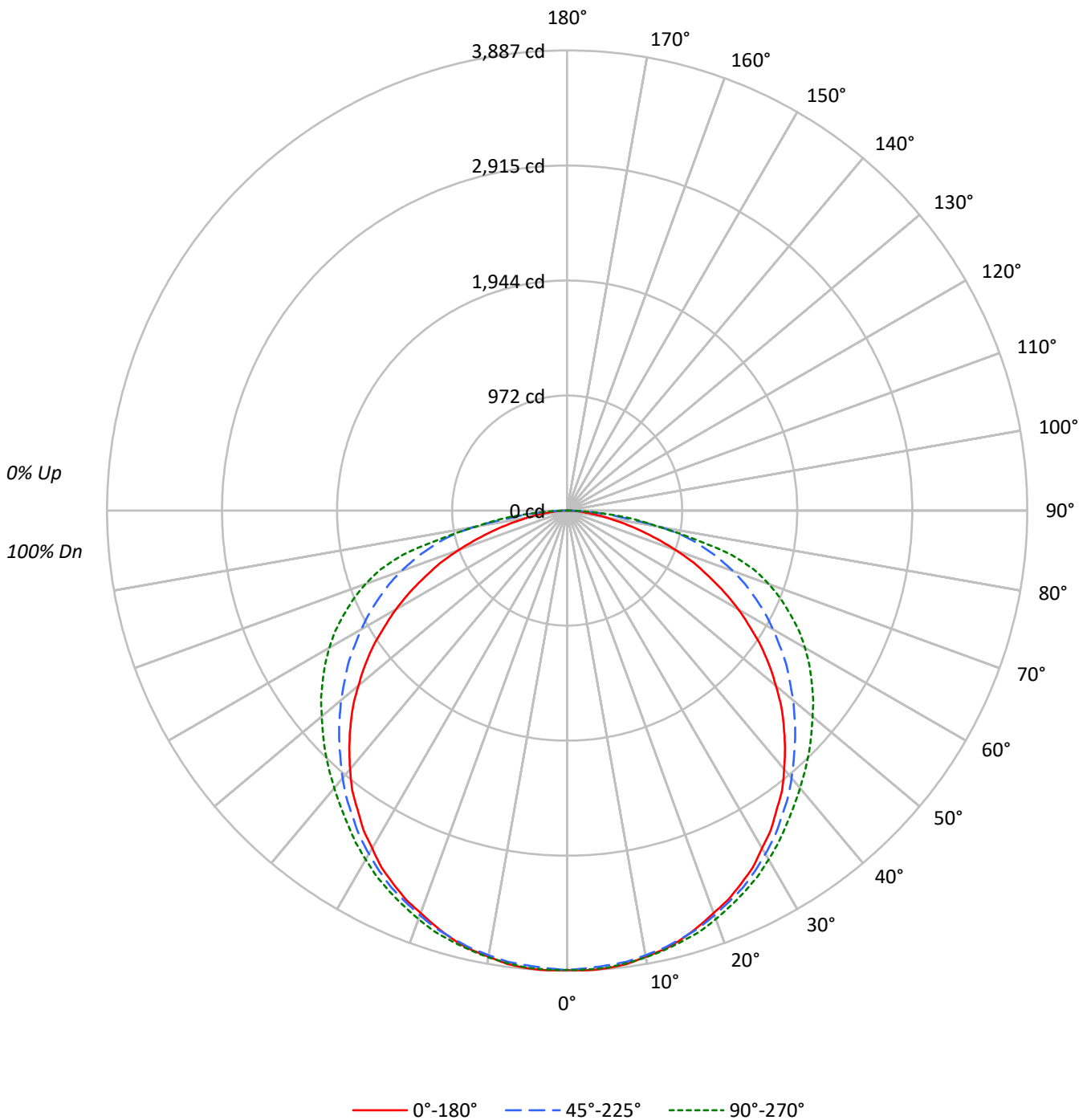
Input Watts (W): 123.4  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	88	86	84	82
2	97	89	81	75	95	87	80	74	83	77	72	80	75	71	77	73	69	67
3	88	77	68	62	86	76	67	61	72	66	60	70	64	59	67	62	58	56
4	81	68	59	52	78	67	58	51	64	57	51	62	55	50	59	54	49	47
5	74	60	51	44	72	59	51	44	57	49	43	55	48	43	53	47	42	40
6	68	54	45	38	66	53	45	38	51	44	38	50	43	37	48	42	37	35
7	63	49	40	34	61	48	40	34	47	39	33	45	38	33	44	38	33	31
8	59	45	36	30	57	44	36	30	43	35	30	41	34	29	40	34	29	27
9	55	41	33	27	53	40	32	27	39	32	27	38	31	26	37	31	26	24
10	51	38	30	24	50	37	29	24	36	29	24	35	29	24	34	28	24	22

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

	0°	45°	90°
0°	5222	5222	5222
5°	5242	5209	5234
10°	5227	5211	5236
15°	5219	5210	5244
20°	5180	5207	5259
25°	5162	5217	5271
30°	5117	5203	5288
35°	5068	5188	5309
40°	5011	5182	5376
45°	4927	5183	5498
50°	4818	5215	5664
55°	4696	5299	5916
60°	4497	5403	6243
65°	4210	5593	6627
70°	3829	5852	7128
75°	3246	6174	7447
80°	2562	6213	6024
85°	1890	4725	5292



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	368.2	3.0
10°-20°	1059.6	8.6
20°-30°	1620.3	13.1
30°-40°	1980.8	16.0
40°-50°	2111.1	17.1
50°-60°	2018.5	16.4
60°-70°	1709.9	13.9
70°-80°	1149.2	9.3
80°-90°	324.2	2.6
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°	3048.0	24.7
0°-40°	5028.8	40.7
0°-60°	9158.5	74.2
0°-90°	12341.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	12341.8	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3881	3881	3881	3881	3881	
5°	3881	3875	3857	3875	3875	369
15°	3746	3746	3740	3771	3765	1056
25°	3477	3489	3514	3544	3551	1603
35°	3085	3110	3159	3220	3232	1933
45°	2590	2632	2724	2840	2889	1997
55°	2002	2075	2259	2436	2522	1783
65°	1322	1457	1757	1990	2081	1313
75°	624	851	1188	1390	1432	669
85°	122	251	306	331	343	152
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3881.1	3881.1	3881.1	3881.1	3881.1
2.5°	3887.3	3887.3	3868.9	3881.1	3881.1
5°	3881.1	3875.0	3856.7	3875.0	3875.0
7.5°	3862.8	3856.7	3844.4	3862.8	3856.7
10°	3826.0	3826.0	3813.8	3832.2	3832.2
12.5°	3795.4	3789.3	3783.2	3807.7	3801.6
15°	3746.5	3746.5	3740.3	3771.0	3764.8
17.5°	3685.2	3691.4	3697.5	3722.0	3728.1
20°	3617.9	3630.2	3636.3	3673.0	3673.0
22.5°	3556.7	3562.8	3575.1	3611.8	3611.8
25°	3477.1	3489.4	3513.8	3544.5	3550.6
27.5°	3397.5	3403.7	3434.3	3477.1	3483.2
30°	3293.5	3311.8	3348.6	3397.5	3403.7
32.5°	3201.6	3220.0	3262.9	3311.8	3324.1
35°	3085.3	3109.8	3158.8	3220.0	3232.2
37.5°	2981.3	2999.6	3060.8	3128.2	3146.5
40°	2852.7	2889.4	2950.6	3030.2	3060.8
42.5°	2724.1	2760.9	2834.3	2938.4	2975.1
45°	2589.5	2632.3	2724.1	2840.5	2889.4
47.5°	2454.8	2503.8	2607.8	2742.5	2797.6
50°	2301.8	2363.0	2491.5	2644.6	2705.8
52.5°	2154.8	2228.3	2369.1	2540.5	2620.1
55°	2001.8	2075.2	2258.9	2436.4	2522.1
57.5°	1830.4	1928.3	2130.3	2332.4	2424.2
60°	1671.2	1763.0	2007.9	2228.3	2320.1
62.5°	1499.8	1622.2	1885.5	2118.1	2209.9
65°	1322.3	1457.0	1756.9	1989.5	2081.4
67.5°	1163.1	1310.0	1628.4	1861.0	1952.8
70°	973.3	1157.0	1487.6	1720.2	1812.0
72.5°	795.8	997.8	1340.6	1567.1	1652.9
75°	624.4	850.9	1187.6	1389.6	1432.5
77.5°	465.2	704.0	1028.4	1114.1	1083.5
80°	330.6	563.2	801.9	759.1	777.5
82.5°	214.3	428.5	495.9	563.2	581.6
85°	122.4	251.0	306.1	330.6	342.8
87.5°	55.1	91.8	122.4	122.4	116.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)