

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: P389644

Luminaire Tested: **24CZ2-170VHE-S-UNV-L940-CD2-SWPD1-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: P389644  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1805-783-1)  
Test Lab: INNOVATIONS CENTER(G3)  
Issue Date: 2/28/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: 24CZ2-170VHE-S-UNV-L940-CD2-SWPD1-U  
Description: 2x4 CRUZE LED TROFFER WITH 4000K, 90 LEDS, AND SMOOTH LENS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.    Condition    Description

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 15087.9 lumens  
Efficiency: N/A  
Efficacy: 122.3 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.35  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

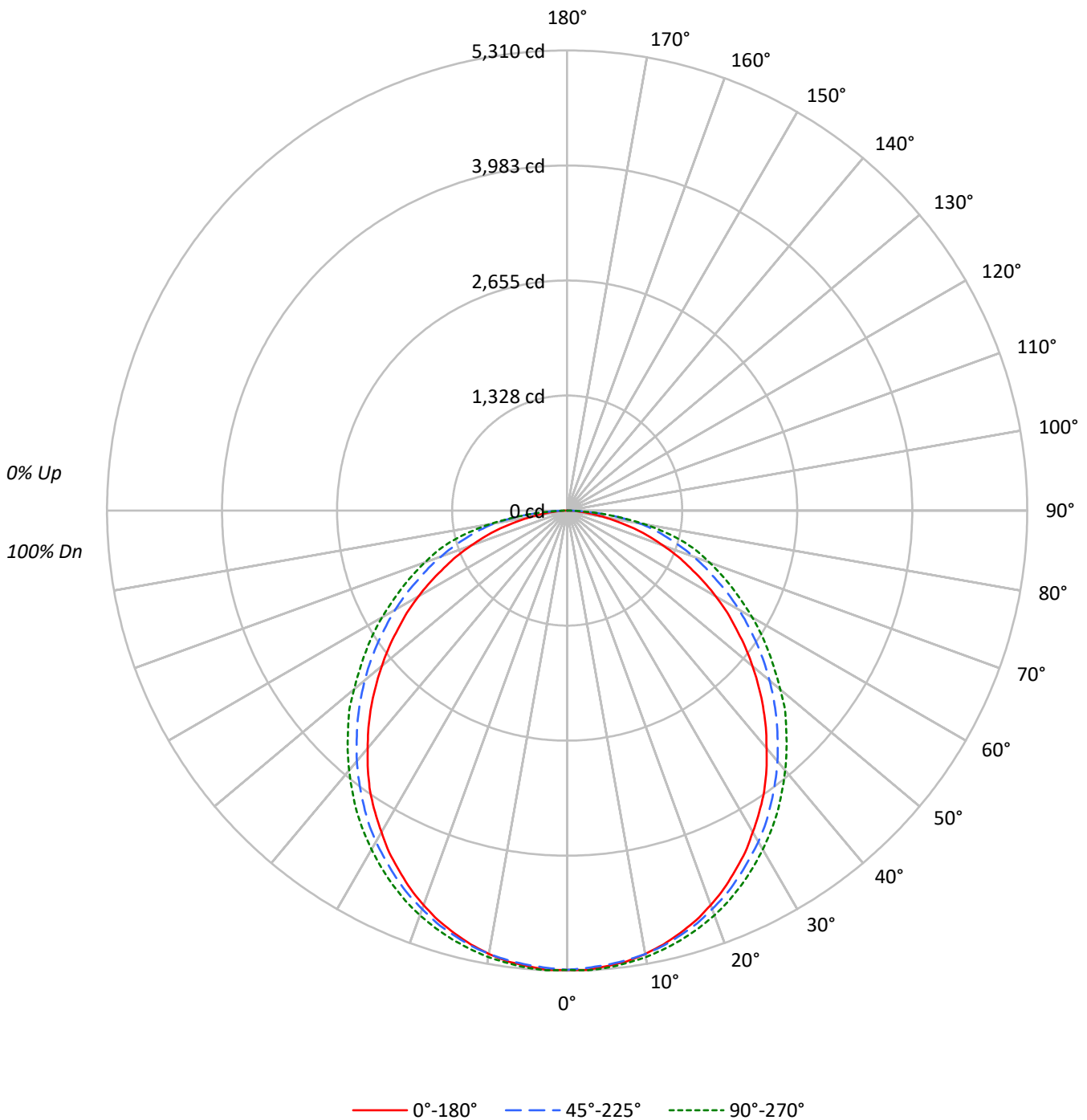
Input Watts (W): 123.4  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	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					100			
1	108	103	99	95	106	101	97	93	97	93	90	93	90	88	89	87	85	83					83			
2	98	90	83	77	96	88	81	76	84	79	74	81	76	72	78	74	71	69					69			
3	89	79	70	64	87	77	69	63	74	67	62	71	66	61	69	64	60	58					58			
4	82	70	61	54	80	68	60	54	66	59	53	63	57	52	61	56	51	49					49			
5	75	62	53	46	73	61	53	46	59	51	46	57	50	45	55	49	45	42					42			
6	70	56	47	40	68	55	47	40	53	46	40	52	45	40	50	44	39	37					37			
7	64	51	42	36	63	50	42	36	48	41	35	47	40	35	46	39	35	33					33			
8	60	46	38	32	58	46	37	32	44	37	32	43	36	31	42	36	31	29					29			
9	56	43	34	29	55	42	34	29	41	34	28	40	33	28	39	33	28	26					26			
10	53	39	31	26	51	39	31	26	38	31	26	37	30	26	36	30	26	24					24			

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

	0°	45°	90°
0°	7132	7132	7132
5°	7127	7107	7153
10°	7098	7098	7150
15°	7030	7063	7136
20°	6938	7006	7116
25°	6809	6937	7072
30°	6657	6858	7014
35°	6510	6746	6959
40°	6288	6633	6877
45°	6083	6502	6803
50°	5848	6380	6721
55°	5587	6262	6655
60°	5326	6164	6642
65°	4989	6057	6683
70°	4619	6090	6863
75°	4136	6203	7250
80°	3342	6573	7093
85°	2515	5771	5622



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	501.8	3.3
10°-20°	1433.8	9.5
20°-30°	2155.4	14.3
30°-40°	2567.4	17.0
40°-50°	2627.6	17.4
50°-60°	2365.6	15.7
60°-70°	1857.8	12.3
70°-80°	1205.7	8.0
80°-90°	372.9	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°	4091.0	27.1
0°-40°	6658.4	44.1
0°-60°	11651.5	77.2
0°-90°	15087.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	15087.9	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	5300	5300	5300	5300	5300	
5°	5276	5286	5262	5291	5296	501
15°	5046	5061	5070	5114	5123	1423
25°	4586	4625	4673	4749	4764	2113
35°	3963	4011	4107	4208	4236	2473
45°	3197	3273	3417	3546	3575	2464
55°	2382	2487	2669	2808	2837	2135
65°	1567	1687	1903	2061	2099	1560
75°	796	949	1193	1356	1395	842
85°	163	302	374	364	364	197
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	5300.5	5300.5	5300.5	5300.5	5300.5
2.5°	5305.3	5305.3	5281.3	5305.3	5310.1
5°	5276.5	5286.1	5262.1	5290.9	5295.7
7.5°	5247.8	5247.8	5233.4	5262.1	5266.9
10°	5195.0	5199.8	5195.0	5228.6	5233.4
12.5°	5127.9	5137.5	5142.3	5175.9	5180.7
15°	5046.5	5060.9	5070.4	5113.6	5123.2
17.5°	4955.4	4969.8	4993.8	5041.7	5051.3
20°	4845.2	4864.4	4893.1	4955.4	4969.8
22.5°	4725.4	4744.6	4792.5	4850.0	4873.9
25°	4586.4	4624.7	4672.7	4749.3	4763.7
27.5°	4447.4	4481.0	4543.3	4624.7	4643.9
30°	4284.5	4337.2	4413.9	4495.3	4514.5
32.5°	4126.3	4179.0	4270.1	4356.4	4380.3
35°	3963.4	4011.3	4107.2	4207.8	4236.5
37.5°	3776.5	3838.8	3944.2	4044.8	4073.6
40°	3580.0	3656.7	3776.5	3881.9	3915.5
42.5°	3393.1	3474.5	3594.4	3709.4	3747.7
45°	3196.6	3273.3	3417.0	3546.4	3575.2
47.5°	2995.3	3081.6	3234.9	3364.3	3412.2
50°	2794.0	2885.1	3048.0	3182.2	3211.0
52.5°	2592.7	2688.6	2861.1	3004.9	3019.3
55°	2381.9	2487.3	2669.4	2808.4	2837.1
57.5°	2190.2	2281.2	2477.7	2621.5	2655.0
60°	1979.3	2079.9	2290.8	2425.0	2468.1
62.5°	1778.0	1883.4	2103.9	2238.1	2276.4
65°	1567.1	1687.0	1902.6	2060.8	2099.1
67.5°	1385.0	1500.0	1730.1	1883.4	1921.8
70°	1174.2	1303.6	1548.0	1706.1	1744.5
72.5°	992.0	1126.2	1370.6	1524.0	1581.5
75°	795.6	948.9	1193.3	1356.3	1394.6
77.5°	603.9	781.2	1030.4	1155.0	1155.0
80°	431.3	618.2	848.3	905.8	915.4
82.5°	282.8	464.9	627.8	623.0	623.0
85°	162.9	301.9	373.8	364.2	364.2
87.5°	62.3	124.6	134.2	134.2	129.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)