

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: P388418

Luminaire Tested: **24CZ2-170VHE-SQR-UNV-L930-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: P388418  
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-L930-CD2-U  
Description: 2x4 CRUZE LED TROFFER WITH 3000K, 90 LEDS, AND SQUARE LENS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.    Condition    Description

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 13487.2 lumens  
Efficiency: N/A  
Efficacy: 109.3 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

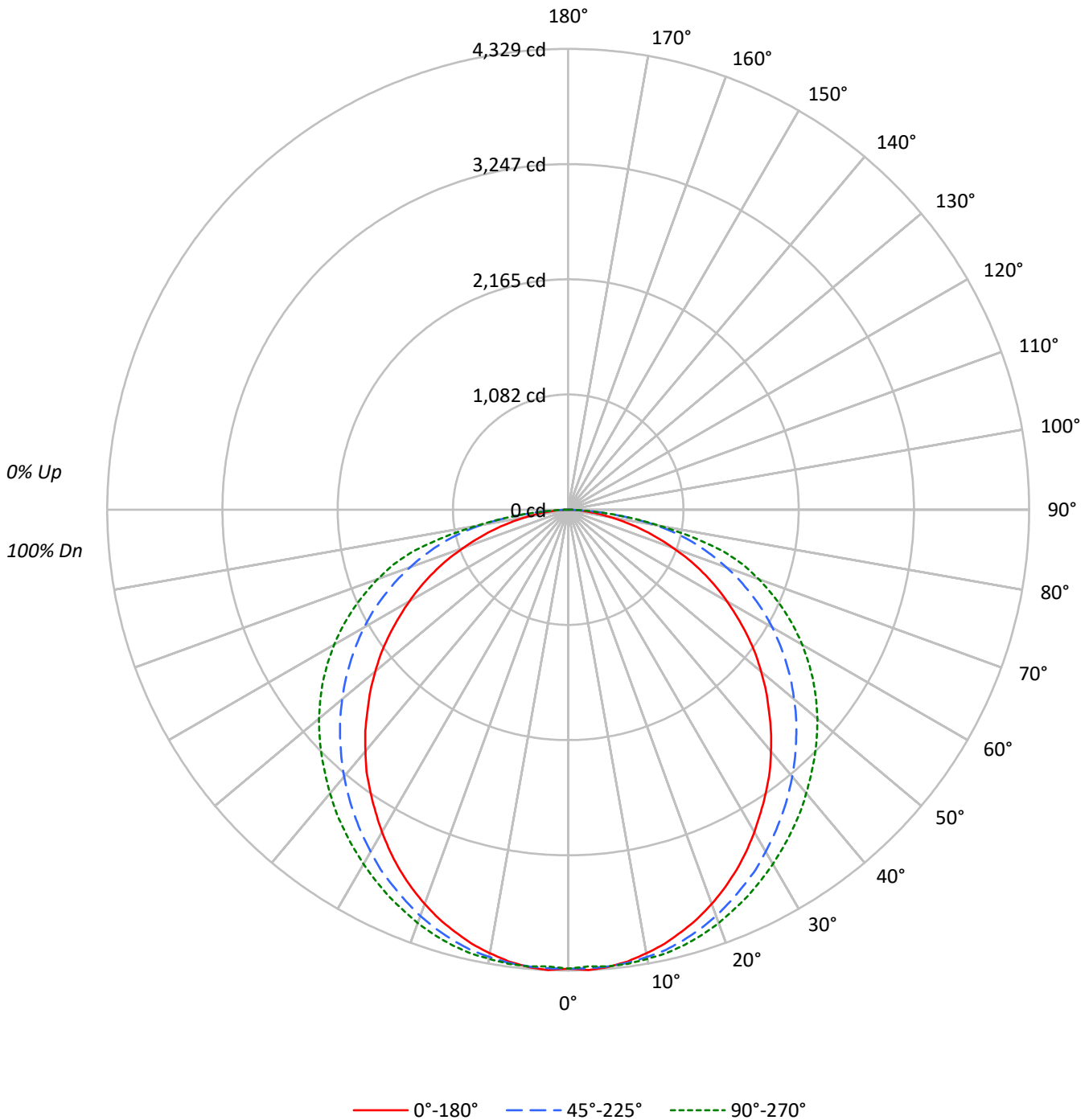
Input Watts (W): 123.4  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P388418

CATALOG NUMBER: 24CZ2-170VHE-SQR-UNV-L930-CD2-U

### Luminous Intensity Polar Plot





TEST NUMBER: P388418

CATALOG NUMBER: 24CZ2-170VHE-SQR-UNV-L930-CD2-U

**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°	5801	5801	5801
5°	5823	5817	5817
10°	5781	5829	5854
15°	5720	5832	5894
20°	5644	5816	5918
25°	5547	5785	5937
30°	5432	5764	5971
35°	5318	5750	6028
40°	5202	5750	6109
45°	5068	5763	6229
50°	4950	5799	6395
55°	4806	5861	6592
60°	4638	5956	6831
65°	4438	6069	7118
70°	4117	6220	7481
75°	3727	6436	7825
80°	3140	6453	6729
85°	2407	4881	4881



TEST NUMBER: P388418

CATALOG NUMBER: 24CZ2-170VHE-SQR-UNV-L930-CD2-U

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	409.2	3.0
10°-20°	1177.4	8.7
20°-30°	1788.4	13.3
30°-40°	2175.3	16.1
40°-50°	2316.0	17.2
50°-60°	2205.9	16.4
60°-70°	1844.7	13.7
70°-80°	1229.9	9.1
80°-90°	340.3	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°	3375.0	25.0
0°-40°	5550.3	41.2
0°-60°	10072.2	74.7
0°-90°	13487.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	13487.2	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4311	4311	4311	4311	4311	
5°	4311	4284	4307	4307	4307	409
15°	4106	4115	4186	4218	4231	1158
25°	3737	3786	3897	3964	3999	1720
35°	3238	3331	3501	3616	3670	2026
45°	2663	2806	3028	3198	3274	2059
55°	2049	2227	2498	2717	2810	1831
65°	1394	1599	1906	2142	2236	1377
75°	717	944	1238	1447	1505	760
85°	156	290	316	312	316	188
90°	0	0	0	0	0	



TEST NUMBER: P388418

CATALOG NUMBER: 24CZ2-170VHE-SQR-UNV-L930-CD2-U

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4311.2	4311.2	4311.2	4311.2	4311.2
2.5°	4329.0	4297.8	4311.2	4311.2	4293.4
5°	4311.2	4284.4	4306.7	4306.7	4306.7
7.5°	4280.0	4257.7	4293.4	4302.3	4302.3
10°	4231.0	4222.1	4266.6	4280.0	4284.4
12.5°	4177.6	4173.1	4235.5	4253.3	4266.6
15°	4106.3	4115.2	4186.5	4217.6	4231.0
17.5°	4030.6	4048.4	4128.6	4173.1	4186.5
20°	3941.5	3968.2	4061.8	4106.3	4133.0
22.5°	3843.5	3883.6	3981.6	4035.0	4066.2
25°	3736.6	3785.6	3897.0	3963.8	3999.4
27.5°	3620.8	3683.2	3812.4	3888.1	3923.7
30°	3496.1	3567.4	3709.9	3799.0	3843.5
32.5°	3367.0	3451.6	3607.5	3705.5	3758.9
35°	3237.8	3331.4	3500.6	3616.4	3669.8
37.5°	3108.7	3202.2	3389.3	3514.0	3580.8
40°	2961.7	3073.0	3273.5	3411.5	3478.3
42.5°	2819.2	2939.4	3153.2	3304.6	3375.9
45°	2663.3	2805.8	3028.5	3197.7	3273.5
47.5°	2520.8	2663.3	2903.8	3081.9	3166.6
50°	2364.9	2516.3	2770.2	2966.2	3055.2
52.5°	2213.5	2369.4	2636.6	2845.9	2935.0
55°	2048.7	2226.8	2498.5	2716.7	2810.3
57.5°	1883.9	2075.4	2356.0	2583.1	2676.7
60°	1723.6	1919.5	2213.5	2440.6	2538.6
62.5°	1563.2	1759.2	2066.5	2298.1	2391.6
65°	1394.0	1598.9	1906.2	2142.2	2235.7
67.5°	1224.8	1438.5	1745.8	1981.9	2071.0
70°	1046.6	1273.8	1581.1	1812.6	1901.7
72.5°	881.8	1109.0	1411.8	1639.0	1723.6
75°	717.0	944.2	1238.1	1447.4	1505.3
77.5°	556.7	783.8	1046.6	1184.7	1198.0
80°	405.3	619.1	832.8	872.9	868.5
82.5°	271.7	463.2	574.5	579.0	592.3
85°	155.9	289.5	316.2	311.8	316.2
87.5°	62.4	102.4	89.1	66.8	66.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)