

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: P474108

Luminaire Tested: **24CZ2-170VHE-S-UNV-L840-CD1-U**

Issue Date: 01/28/2021

**Test Information**

Test Method: LM-79-08  
Report Number: P474108  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 01/28/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: 24CZ2-170VHE-S-UNV-L840-CD1-U  
Description: 2'X4' TROFFER LED MODULE, VERY HIGH EFFICIENCY,SMOOTH LENS  
Light Source: 4000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

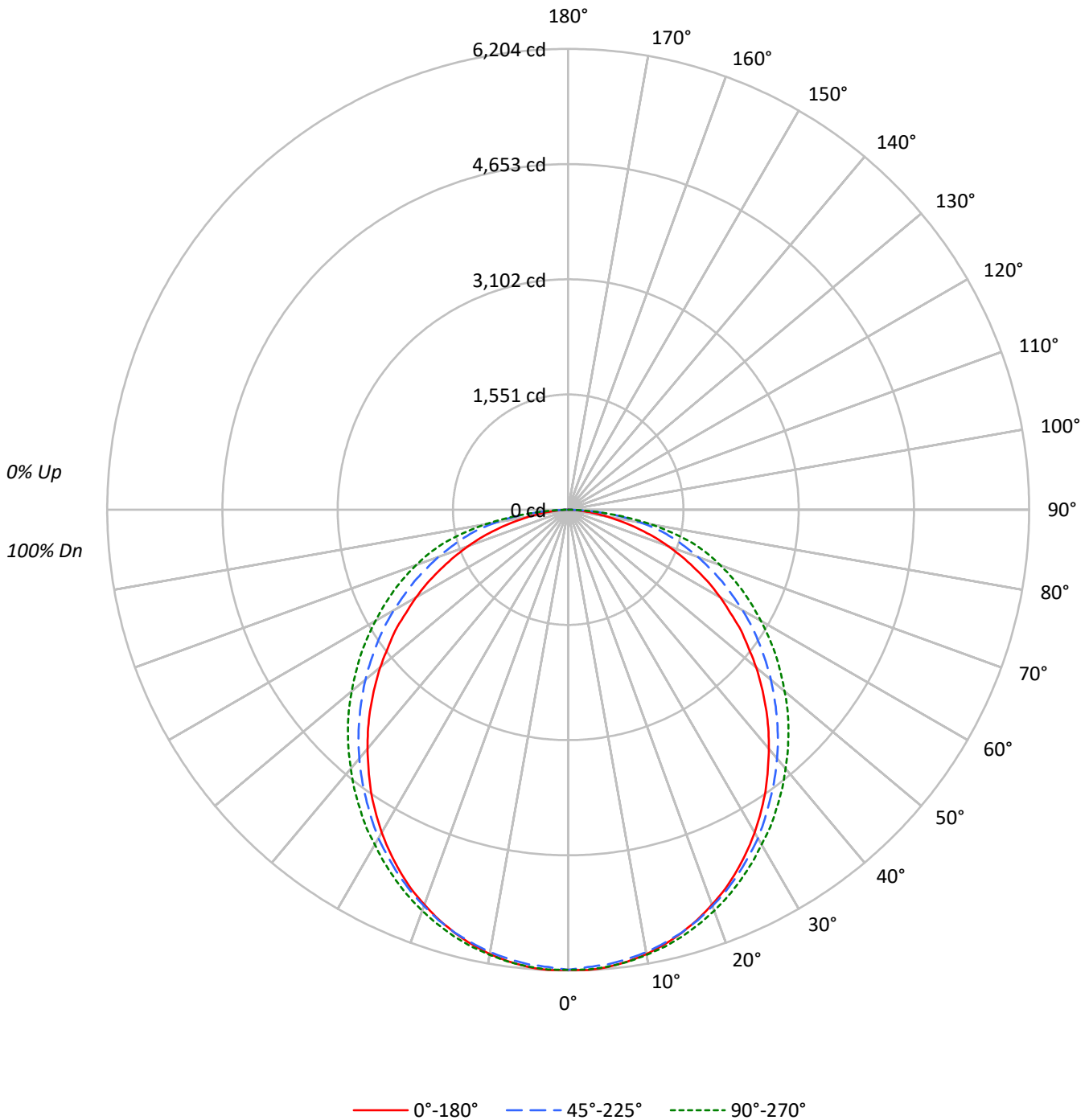
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 17748.6 lumens  
Efficiency: N/A  
Efficacy: 140.2 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.25 / 1.35  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 126.6  
Input Voltage (V): 120  
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	105	101	97	93	97	93	90	93	90	87	89	87	85	83					83			
2	98	90	83	77	95	88	81	76	84	79	74	81	76	72	78	74	71	68					68			
3	89	78	70	63	87	77	69	63	74	67	62	71	65	61	68	64	59	57					57			
4	82	69	60	54	79	68	60	53	66	58	52	63	57	52	61	55	51	49					49			
5	75	62	53	46	73	61	52	46	59	51	45	57	50	45	55	49	44	42					42			
6	69	56	47	40	67	55	46	40	53	45	40	51	44	39	50	44	39	37					37			
7	64	51	42	35	63	50	41	35	48	41	35	47	40	35	45	39	34	32					32			
8	60	46	38	32	58	45	37	31	44	37	31	43	36	31	42	35	31	29					29			
9	56	42	34	28	54	42	34	28	41	33	28	39	33	28	38	32	28	26					26			
10	52	39	31	26	51	39	31	26	38	30	26	37	30	25	36	30	25	24					24			

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

	0°	45°	90°
0°	8335	8335	8335
5°	8348	8296	8340
10°	8301	8265	8313
15°	8215	8211	8280
20°	8102	8127	8227
25°	7968	8037	8163
30°	7800	7935	8085
35°	7604	7796	8040
40°	7379	7681	7993
45°	7156	7561	7977
50°	6914	7457	7958
55°	6668	7365	8001
60°	6362	7296	8057
65°	6024	7267	8251
70°	5620	7306	8544
75°	5002	7517	9002
80°	4089	7680	8787
85°	2881	6706	6840



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	585.7	3.3
10°-20°	1668.1	9.4
20°-30°	2500.4	14.1
30°-40°	2978.1	16.8
40°-50°	3070.7	17.3
50°-60°	2802.0	15.8
60°-70°	2240.6	12.6
70°-80°	1463.5	8.2
80°-90°	439.4	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°	4754.2	26.8
0°-40°	7732.3	43.6
0°-60°	13605.0	76.7
0°-90°	17748.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	17748.6	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	6195	6195	6195	6195	6195	
5°	6180	6169	6143	6180	6175	586
15°	5898	5901	5895	5944	5944	1663
25°	5367	5376	5414	5492	5498	2471
35°	4630	4662	4746	4866	4895	2892
45°	3761	3828	3974	4140	4192	2900
55°	2842	2924	3140	3347	3411	2532
65°	1892	2020	2283	2507	2592	1876
75°	962	1122	1446	1679	1732	1022
85°	187	335	434	443	443	237
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	6195.0	6195.0	6195.0	6195.0	6195.0
2.5°	6203.8	6195.0	6163.0	6200.9	6195.0
5°	6180.5	6168.8	6142.6	6180.5	6174.6
7.5°	6133.8	6128.0	6101.8	6145.5	6139.7
10°	6075.5	6069.7	6049.3	6093.0	6084.3
12.5°	5993.9	5991.0	5976.4	6028.9	6023.0
15°	5897.7	5900.6	5894.8	5944.3	5944.3
17.5°	5786.9	5784.0	5795.7	5856.9	5851.0
20°	5658.6	5661.5	5676.1	5746.1	5746.1
22.5°	5524.5	5521.6	5553.7	5623.6	5629.5
25°	5367.1	5375.8	5413.7	5492.5	5498.3
27.5°	5198.0	5212.6	5259.2	5349.6	5358.4
30°	5020.2	5037.7	5107.6	5192.2	5203.8
32.5°	4824.9	4862.7	4926.9	5034.8	5063.9
35°	4629.5	4661.6	4746.1	4865.7	4894.8
37.5°	4413.8	4466.3	4562.5	4693.7	4731.6
40°	4201.0	4253.4	4373.0	4510.0	4550.8
42.5°	3985.2	4040.6	4177.6	4332.2	4375.9
45°	3760.8	3827.8	3973.6	4139.8	4192.2
47.5°	3530.4	3609.2	3766.6	3947.3	4005.6
50°	3303.1	3381.8	3562.5	3749.1	3801.6
52.5°	3058.2	3157.3	3349.7	3550.9	3603.3
55°	2842.4	2924.1	3139.8	3346.8	3410.9
57.5°	2588.8	2699.6	2929.9	3139.8	3201.0
60°	2364.3	2466.4	2711.2	2924.1	2994.0
62.5°	2136.9	2241.9	2486.8	2728.7	2792.9
65°	1892.0	2020.3	2282.7	2507.2	2591.7
67.5°	1658.8	1792.9	2061.1	2300.2	2387.6
70°	1428.5	1565.5	1857.1	2101.9	2171.9
72.5°	1201.1	1344.0	1647.2	1886.2	1967.8
75°	962.1	1122.4	1446.0	1679.2	1731.7
77.5°	737.6	915.4	1241.9	1399.4	1437.3
80°	527.7	723.0	991.2	1104.9	1134.1
82.5°	346.9	536.4	740.5	801.7	793.0
85°	186.6	335.3	434.4	443.1	443.1
87.5°	72.9	134.1	137.0	105.0	99.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)