

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: P474408

Luminaire Tested: **24CZ2-170VHE-HRP-UNV-L830-CD1-U**

Issue Date: 01/28/2021

**Test Information**

Test Method: LM-79-08  
Report Number: P474408  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 01/28/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: 24CZ2-170VHE-HRP-UNV-L830-CD1-U  
Description: 2'X4' TROFFER LED MODULE, VERY HIGH EFFICIENCY,SMOOTH LENS W/ HRP  
INSERT  
Light Source: 3000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 13349.4 lumens  
Efficiency: N/A  
Efficacy: 105.4 lumens/watt  
Spacing Criteria (0/90/45): 1.24 / 1.3 / 1.4  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

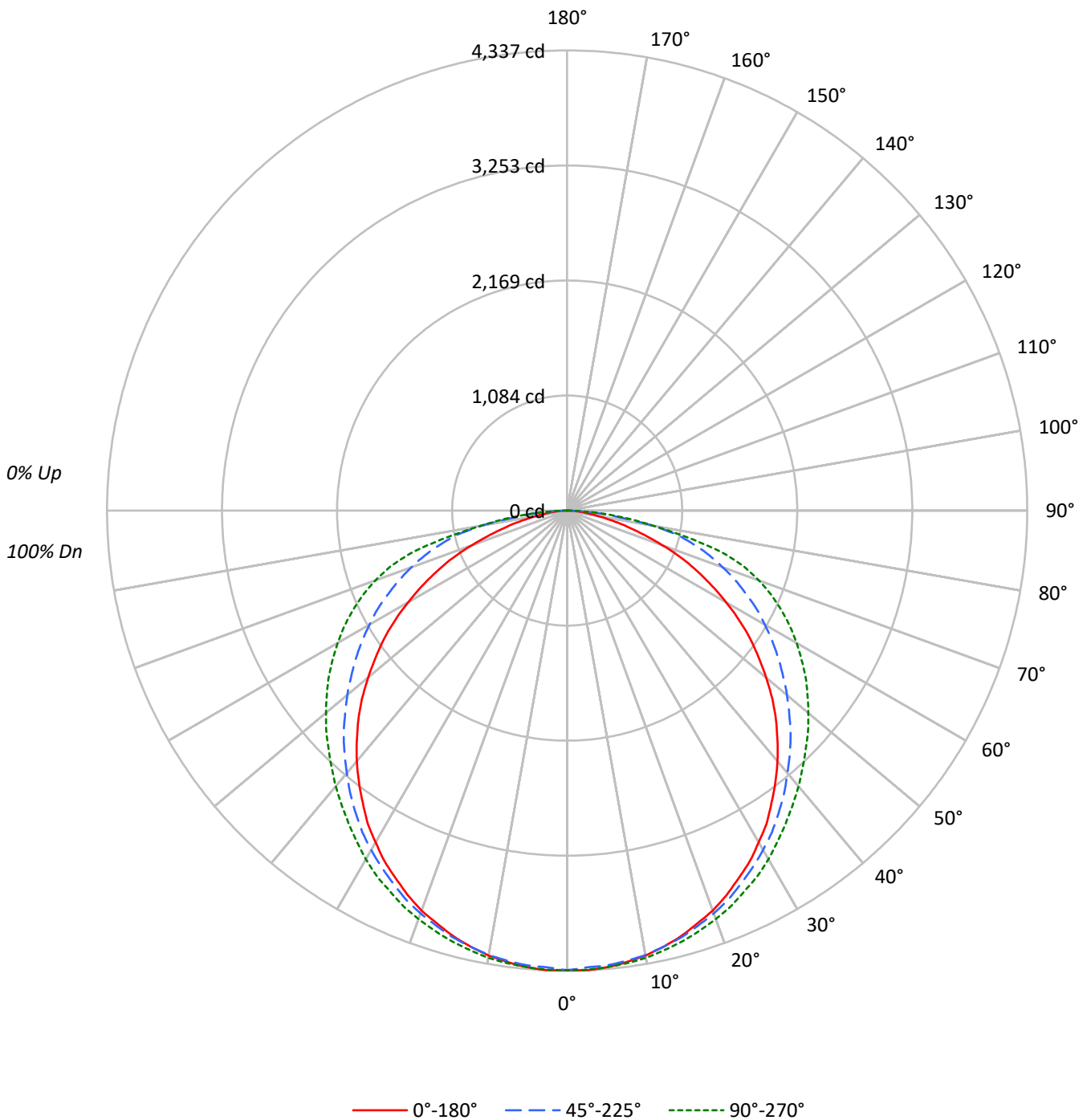
Input Watts (W): 126.6  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	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	101	96	93	96	93	90	92	90	87	89	86	84	82
2	98	89	82	76	95	87	80	75	83	78	73	80	75	71	77	73	70	67
3	89	78	69	62	86	76	68	62	73	66	61	70	64	59	68	63	58	56
4	81	68	59	52	79	67	59	52	65	57	51	62	56	50	60	54	50	48
5	74	61	52	45	72	60	51	45	58	50	44	56	49	44	54	48	43	41
6	69	55	46	39	67	54	45	39	52	44	38	50	43	38	49	42	38	36
7	63	50	41	34	62	49	40	34	47	39	34	46	39	34	44	38	33	31
8	59	45	36	30	57	44	36	30	43	36	30	42	35	30	41	34	30	28
9	55	41	33	27	54	41	33	27	40	32	27	39	32	27	38	31	27	25
10	52	38	30	25	50	38	30	25	37	30	25	36	29	24	35	29	24	23

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

	0°	45°	90°
0°	5828	5828	5828
5°	5835	5812	5835
10°	5818	5811	5848
15°	5784	5800	5854
20°	5746	5785	5866
25°	5675	5758	5874
30°	5609	5739	5896
35°	5517	5709	5902
40°	5418	5674	5958
45°	5296	5668	6051
50°	5124	5662	6212
55°	4942	5702	6437
60°	4661	5790	6722
65°	4306	5926	7100
70°	3759	6133	7564
75°	3051	6450	7816
80°	2253	6324	6324
85°	1727	4658	5260



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	410.3	3.1
10°-20°	1178.2	8.8
20°-30°	1793.7	13.4
30°-40°	2178.0	16.3
40°-50°	2301.1	17.2
50°-60°	2171.3	16.3
60°-70°	1805.3	13.5
70°-80°	1187.7	8.9
80°-90°	323.8	2.4
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°	3382.2	25.3
0°-40°	5560.2	41.7
0°-60°	10032.5	75.2
0°-90°	13349.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	13349.4	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4331	4331	4331	4331	4331	
5°	4320	4320	4303	4320	4320	410
15°	4152	4158	4164	4203	4203	1171
25°	3822	3845	3879	3946	3957	1763
35°	3359	3398	3476	3565	3594	2103
45°	2783	2839	2979	3124	3180	2143
55°	2107	2196	2431	2660	2744	1877
65°	1352	1509	1861	2135	2230	1337
75°	587	855	1241	1470	1503	632
85°	112	246	302	336	341	137
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4331.2	4331.2	4331.2	4331.2	4331.2
2.5°	4336.9	4331.2	4308.8	4331.2	4331.2
5°	4320.3	4320.3	4303.1	4320.3	4320.3
7.5°	4292.2	4292.2	4280.7	4303.1	4303.1
10°	4258.3	4258.3	4253.2	4280.7	4280.7
12.5°	4208.4	4213.6	4208.4	4241.7	4241.7
15°	4152.2	4158.0	4163.7	4202.7	4202.7
17.5°	4080.0	4090.8	4102.3	4146.5	4152.2
20°	4012.8	4018.0	4040.4	4090.8	4096.6
22.5°	3923.4	3940.0	3968.1	4018.0	4035.2
25°	3822.4	3844.8	3878.6	3945.7	3956.6
27.5°	3727.8	3744.4	3789.1	3862.0	3884.4
30°	3610.2	3638.3	3693.9	3766.8	3794.9
32.5°	3498.3	3526.4	3593.5	3671.6	3693.9
35°	3358.9	3398.0	3476.0	3565.4	3593.5
37.5°	3224.7	3263.7	3358.9	3459.3	3493.2
40°	3084.8	3129.5	3230.5	3347.5	3392.2
42.5°	2933.9	2995.3	3107.1	3235.6	3286.1
45°	2783.1	2839.3	2978.7	3123.8	3180.0
47.5°	2621.3	2688.4	2839.3	3012.5	3079.6
50°	2448.1	2531.8	2705.1	2894.9	2967.8
52.5°	2274.9	2369.5	2565.1	2777.3	2855.9
55°	2106.8	2196.3	2430.9	2660.3	2744.1
57.5°	1922.7	2034.5	2291.5	2537.0	2621.3
60°	1732.2	1855.6	2151.5	2408.5	2498.0
62.5°	1542.4	1682.3	2017.3	2274.9	2369.5
65°	1352.5	1509.1	1861.3	2134.9	2230.1
67.5°	1167.8	1341.1	1715.6	1989.8	2084.4
70°	955.6	1173.6	1559.0	1827.5	1922.7
72.5°	760.0	1011.8	1408.2	1660.0	1743.7
75°	586.8	855.2	1240.7	1469.5	1503.4
77.5°	430.2	698.6	1067.5	1145.5	1151.2
80°	290.8	558.7	816.2	804.7	816.2
82.5°	189.9	419.3	513.9	575.9	581.0
85°	111.9	246.1	301.7	335.6	340.7
87.5°	55.6	83.7	106.1	111.9	122.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)