

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: P474406

Luminaire Tested: **24CZ2-160VHE-HRP-UNV-L830-CD1-U**

Issue Date: 01/28/2021

Test Information

Test Method: LM-79-08
Report Number: P474406
Test Lab: INNOVATION CENTER(G3)
Issue Date: 01/28/2021
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: 24CZ2-160VHE-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: 12584.8 lumens
Efficiency: N/A
Efficacy: 106.2 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

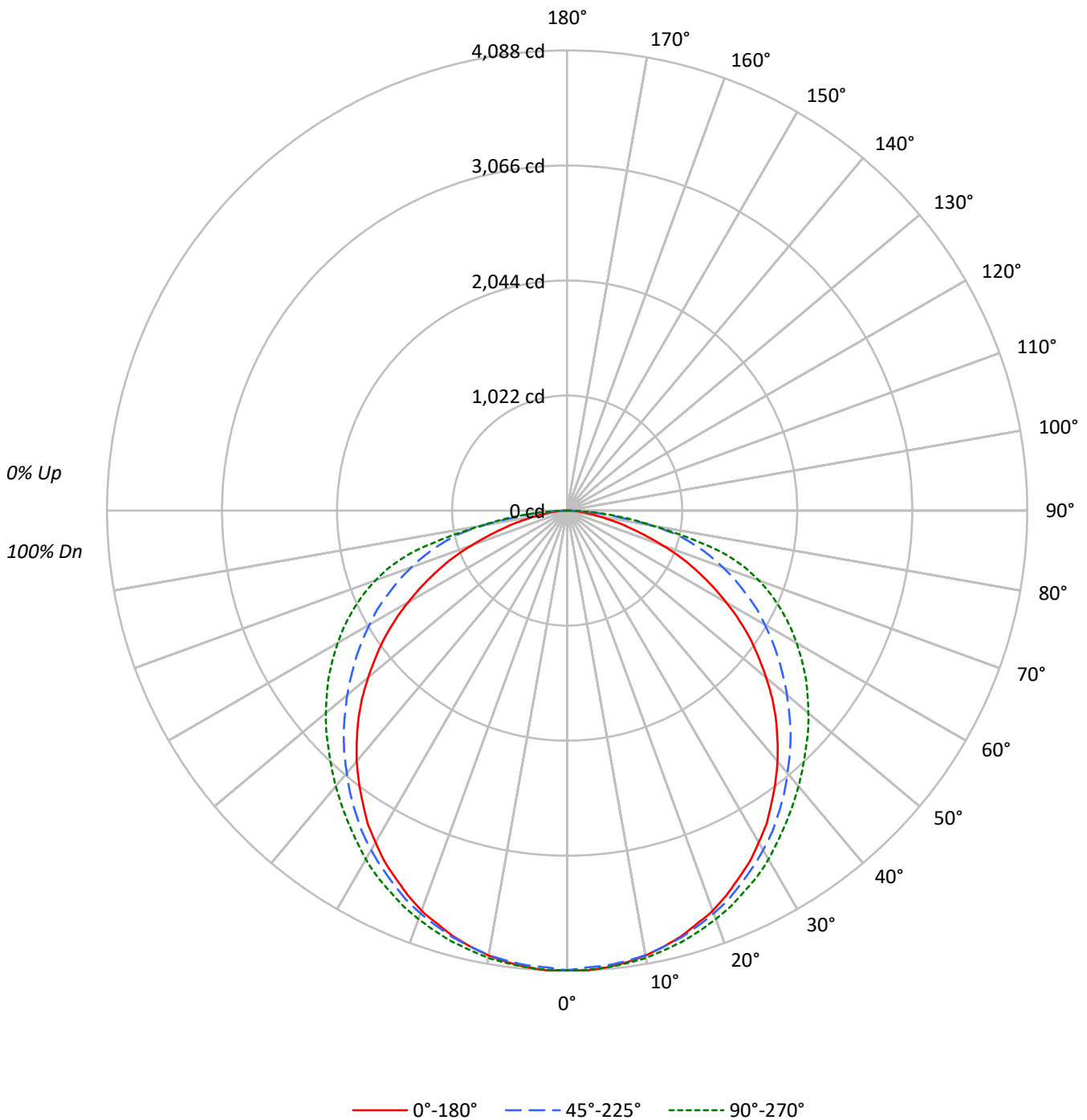
Input Watts (W): 118.5
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P474406

CATALOG NUMBER: 24CZ2-160VHE-HRP-UNV-L830-CD1-U

Luminous Intensity Polar Plot





TEST NUMBER: P474406

CATALOG NUMBER: 24CZ2-160VHE-HRP-UNV-L830-CD1-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	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°	5494	5494	5494
5°	5501	5479	5501
10°	5485	5478	5513
15°	5453	5468	5519
20°	5417	5454	5530
25°	5350	5428	5537
30°	5288	5410	5558
35°	5201	5382	5564
40°	5108	5349	5617
45°	4992	5343	5704
50°	4831	5338	5856
55°	4659	5376	6068
60°	4394	5458	6337
65°	4060	5586	6693
70°	3544	5782	7131
75°	2876	6080	7368
80°	2125	5962	5962
85°	1627	4390	4959



TEST NUMBER: P474406

CATALOG NUMBER: 24CZ2-160VHE-HRP-UNV-L830-CD1-U

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	386.8	3.1
10°-20°	1110.7	8.8
20°-30°	1691.0	13.4
30°-40°	2053.2	16.3
40°-50°	2169.3	17.2
50°-60°	2046.9	16.3
60°-70°	1701.9	13.5
70°-80°	1119.7	8.9
80°-90°	305.2	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°	3188.5	25.3
0°-40°	5241.8	41.7
0°-60°	9458.0	75.2
0°-90°	12584.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	12584.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4083	4083	4083	4083	4083	
5°	4073	4073	4057	4073	4073	387
15°	3914	3920	3925	3962	3962	1104
25°	3604	3625	3656	3720	3730	1662
35°	3167	3203	3277	3361	3388	1982
45°	2624	2677	2808	2945	2998	2021
55°	1986	2070	2292	2508	2587	1769
65°	1275	1423	1755	2013	2102	1260
75°	553	806	1170	1385	1417	596
85°	105	232	284	316	321	129
90°	0	0	0	0	0	



TEST NUMBER: P474406

CATALOG NUMBER: 24CZ2-160VHE-HRP-UNV-L830-CD1-U

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4083.1	4083.1	4083.1	4083.1	4083.1
2.5°	4088.5	4083.1	4062.0	4083.1	4083.1
5°	4072.8	4072.8	4056.6	4072.8	4072.8
7.5°	4046.4	4046.4	4035.5	4056.6	4056.6
10°	4014.4	4014.4	4009.6	4035.5	4035.5
12.5°	3967.4	3972.3	3967.4	3998.8	3998.8
15°	3914.4	3919.8	3925.2	3962.0	3962.0
17.5°	3846.3	3856.6	3867.4	3909.0	3914.4
20°	3783.0	3787.9	3809.0	3856.6	3862.0
22.5°	3698.7	3714.3	3740.8	3787.9	3804.1
25°	3603.5	3624.6	3656.5	3719.7	3730.0
27.5°	3514.3	3529.9	3572.1	3640.8	3661.9
30°	3403.4	3429.9	3482.4	3551.0	3577.5
32.5°	3298.0	3324.5	3387.7	3461.3	3482.4
35°	3166.6	3203.3	3276.9	3361.2	3387.7
37.5°	3040.0	3076.8	3166.6	3261.2	3293.1
40°	2908.1	2950.3	3045.4	3155.8	3197.9
42.5°	2765.9	2823.7	2929.2	3050.3	3097.9
45°	2623.7	2676.7	2808.1	2944.9	2997.9
47.5°	2471.2	2534.4	2676.7	2840.0	2903.2
50°	2307.9	2386.8	2550.1	2729.1	2797.8
52.5°	2144.6	2233.8	2418.2	2618.3	2692.3
55°	1986.1	2070.5	2291.7	2507.9	2586.9
57.5°	1812.6	1918.0	2160.3	2391.7	2471.2
60°	1633.0	1749.3	2028.3	2270.6	2354.9
62.5°	1454.0	1586.0	1901.8	2144.6	2233.8
65°	1275.1	1422.7	1754.7	2012.6	2102.4
67.5°	1100.9	1264.2	1617.4	1875.8	1965.0
70°	900.9	1106.4	1469.7	1722.8	1812.6
72.5°	716.5	953.9	1327.5	1564.9	1643.8
75°	553.2	806.2	1169.6	1385.4	1417.3
77.5°	405.6	658.6	1006.3	1079.9	1085.3
80°	274.2	526.7	769.5	758.7	769.5
82.5°	179.0	395.3	484.5	542.9	547.8
85°	105.4	232.0	284.4	316.3	321.2
87.5°	52.5	78.9	100.0	105.4	115.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)