

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: FAIL-SAFE

Report Number: P834697

Luminaire Tested: **ORLG-24-4-INS-ASY2-LD4-5LO-40-120-EDD-90**

Issue Date: 5/16/2024



Test Information

Test Method: LM-79-08
Report Number: P834697
Test Lab: INNOVATION CENTER(G2)
Issue Date: 5/16/2024
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: ORLG-24-4-INS-ASY2-LD4-5LO-40-120-EDD-90
Description: 2FT x 4FT ORL LED LUMINAIRE WITH asymmetric/symmetric lens v2
Light Source: 4000K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

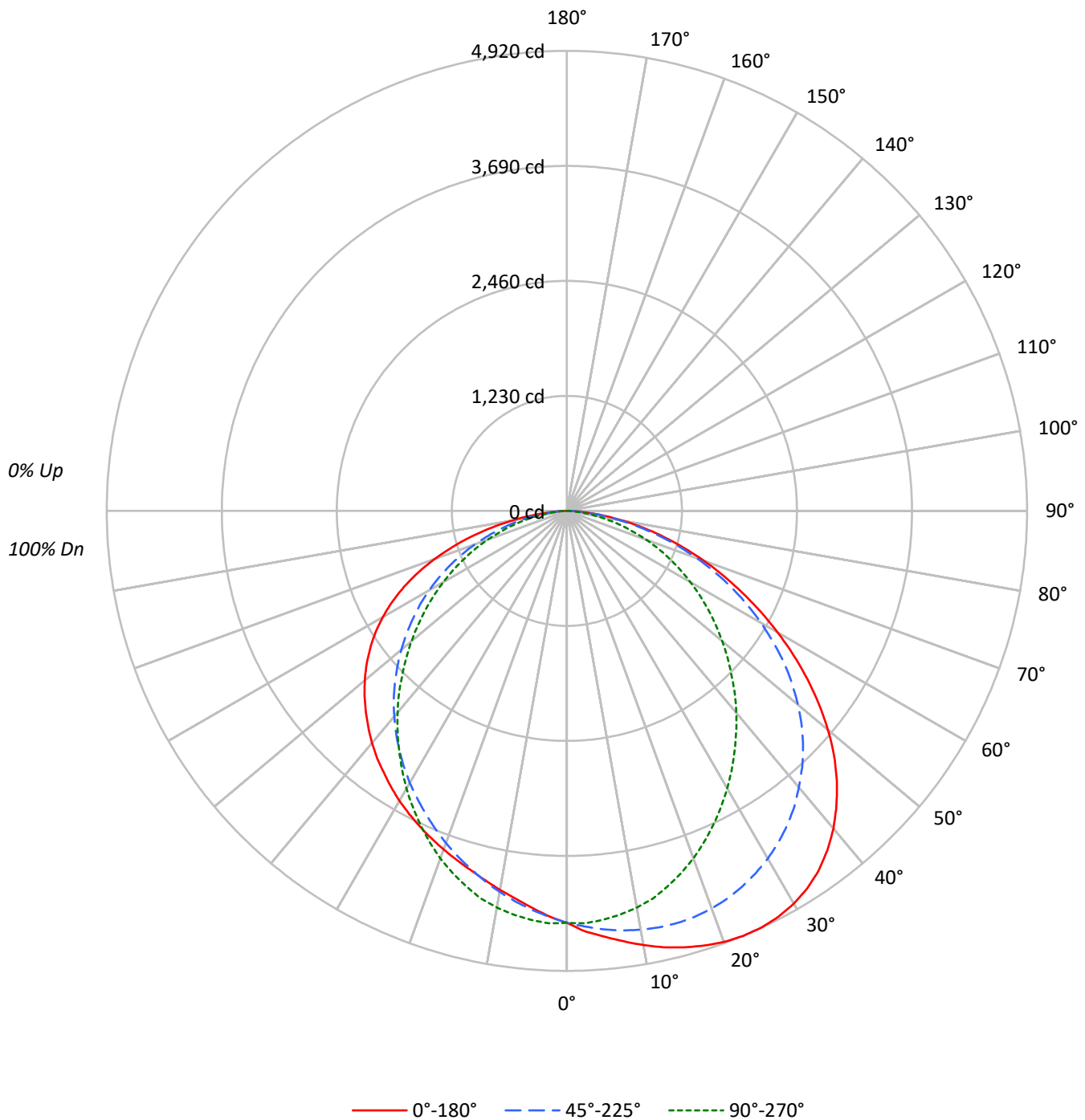
Lumens per Lamp: N/A
Luminaire Lumens: 12958.3 lumens
Efficiency: N/A
Efficacy: 110.8 lumens/watt
Spacing Criteria (0/90/45): 1.41 / 1.17 / 1.4
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 117
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: 28.75 FT

TEST NUMBER: P834697

CATALOG NUMBER: ORLG-24-4-INS-ASY2-LD4-5LO-40-120-EDD-90

Luminous Intensity Polar Plot



Cooper Lighting Solutions Photometric Lab

1121 Highway 74 South

Peachtree City, GA 30269



TEST NUMBER: P834697

CATALOG NUMBER: ORLG-24-4-INS-ASY2-LD4-5LO-40-120-EDD-90

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20					20					20					20
RC	80				70					50					30					10
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10
RCR																				
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	102	102	100
1	109	104	100	96	106	102	98	94	97	94	91	94	91	88	90	88	86	86	86	84
2	99	90	84	78	96	89	82	77	85	80	75	82	77	73	79	75	72	72	72	70
3	90	79	71	65	87	78	70	64	75	68	63	72	66	62	69	65	61	61	61	58
4	82	70	61	55	80	69	61	54	66	59	53	64	58	53	62	56	52	52	52	50
5	76	63	54	47	73	61	53	47	59	52	46	57	51	46	55	50	45	45	45	43
6	70	56	47	41	68	55	47	41	54	46	40	52	45	40	50	44	40	40	40	37
7	65	51	42	36	63	50	42	36	49	41	36	47	40	35	46	40	35	35	35	33
8	60	46	38	32	59	46	38	32	44	37	32	43	36	31	42	36	31	31	31	29
9	56	43	34	29	55	42	34	29	41	34	29	40	33	28	39	33	28	28	28	26
10	53	39	31	26	51	39	31	26	38	31	26	37	30	26	36	30	26	26	26	24

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	5927	5927	5927
5°	6171	5930	5755
10°	6441	5886	5621
15°	6730	5792	5541
20°	7025	5664	5518
25°	7300	5499	5527
30°	7538	5327	5562
35°	7710	5137	5608
40°	7788	4947	5691
45°	7767	4738	5784
50°	7629	4539	5903
55°	7368	4330	6026
60°	7009	4107	6118
65°	6582	3856	6110
70°	6125	3557	5928
75°	5561	3124	5466
80°	4775	2566	4611
85°	3642	1754	3166

Classified

Scaled Data Report

Cooper Lighting Solutions Photometric Lab

1121 Highway 74 South

Peachtree City, GA 30269



TEST NUMBER: P834697

CATALOG NUMBER: ORLG-24-4-INS-ASY2-LD4-5LO-40-120-EDD-90

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	417.8	3.2
10°-20°	1206.6	9.3
20°-30°	1848.4	14.3
30°-40°	2255.8	17.4
40°-50°	2359.1	18.2
50°-60°	2135.1	16.5
60°-70°	1617.0	12.5
70°-80°	901.1	7.0
80°-90°	217.4	1.7
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°	3472.8	26.8
0°-40°	5728.6	44.2
0°-60°	10222.8	78.9
0°-90°	12958.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	12958.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	4405	4405	4405	4405	4405	
5°	4569	4493	4391	4283	4261	441
15°	4832	4563	4158	3964	3978	1370
25°	4918	4434	3704	3573	3723	2269
35°	4694	4106	3128	3124	3414	2931
45°	4082	3570	2490	2600	3040	3140
55°	3141	2836	1846	2009	2569	2803
65°	2067	1944	1211	1377	1919	2051
75°	1070	1010	601	717	1052	1135
85°	236	208	114	152	205	284
90°	0	0	0	0	0	

Cooper Lighting Solutions Photometric Lab

1121 Highway 74 South

Peachtree City, GA 30269



TEST NUMBER: P834697

CATALOG NUMBER: ORLG-24-4-INS-ASY2-LD4-5LO-40-120-EDD-90

CANDELA DISTRIBUTION (FULL):

	0°	10°	20°	22.5°	30°	40°	45°	50°	60°	67.5°	70°
0°	4405.3	4405.3	4405.3	4405.3	4405.3	4405.3	4405.3	4405.3	4405.3	4405.3	4405.3
2.5°	4502.5	4481.3	4464.0	4470.8	4474.6	4461.1	4449.6	4451.5	4439.9	4462.1	4410.1
5°	4569.0	4549.7	4529.5	4537.2	4529.5	4509.3	4492.9	4488.1	4457.3	4469.8	4416.8
7.5°	4643.1	4621.9	4592.1	4600.7	4584.4	4546.8	4525.6	4513.1	4465.9	4466.9	4408.2
10°	4714.4	4696.1	4655.6	4661.4	4631.6	4581.5	4547.8	4530.5	4464.0	4454.4	4393.7
12.5°	4780.8	4755.8	4712.4	4715.3	4672.0	4605.6	4562.2	4537.2	4450.5	4421.6	4361.9
15°	4831.8	4807.8	4755.8	4754.8	4699.0	4612.3	4563.2	4528.5	4418.8	4373.5	4310.9
17.5°	4875.2	4853.0	4788.5	4786.6	4719.2	4609.4	4550.7	4507.3	4372.5	4316.7	4247.4
20°	4906.0	4883.8	4811.6	4804.9	4724.0	4595.0	4524.7	4469.8	4311.9	4245.4	4168.4
22.5°	4920.4	4898.3	4816.4	4806.8	4712.4	4566.1	4487.1	4422.6	4242.5	4155.9	4076.0
25°	4917.5	4896.4	4803.9	4794.3	4690.3	4522.8	4434.2	4360.0	4154.9	4052.9	3973.9
27.5°	4893.5	4877.1	4779.8	4767.3	4649.9	4464.0	4369.7	4287.8	4057.7	3944.0	3858.3
30°	4852.1	4839.5	4736.5	4725.0	4599.8	4399.5	4294.5	4200.2	3952.7	3824.6	3738.0
32.5°	4785.6	4774.1	4670.1	4659.5	4532.4	4316.7	4206.9	4109.7	3838.1	3696.6	3609.9
35°	4694.1	4687.4	4586.3	4574.7	4445.7	4222.3	4105.8	3998.9	3718.7	3558.9	3476.1
37.5°	4573.8	4573.8	4476.5	4464.0	4337.9	4106.8	3992.2	3878.6	3583.9	3414.5	3332.6
40°	4434.2	4446.7	4347.5	4335.0	4212.7	3982.6	3857.4	3738.0	3438.5	3262.3	3182.4
42.5°	4266.6	4278.2	4195.4	4183.8	4069.2	3839.1	3722.6	3592.6	3286.4	3107.3	3024.5
45°	4081.7	4097.1	4023.0	4014.3	3907.5	3682.1	3570.4	3438.5	3127.5	2945.5	2864.6
47.5°	3875.7	3895.9	3831.4	3826.6	3727.4	3521.3	3404.8	3271.0	2960.9	2777.0	2700.9
50°	3644.6	3673.5	3620.5	3620.5	3531.9	3326.8	3225.7	3091.9	2787.6	2603.7	2528.6
52.5°	3397.1	3433.7	3394.2	3395.2	3323.0	3139.1	3034.1	2903.2	2606.6	2425.6	2356.2
55°	3141.0	3176.6	3151.6	3155.4	3098.6	2931.1	2835.7	2705.8	2421.7	2245.5	2180.0
57.5°	2873.3	2911.8	2895.4	2903.2	2863.7	2713.5	2614.3	2500.7	2231.0	2056.8	2000.9
60°	2604.7	2641.2	2632.6	2643.2	2618.1	2488.1	2397.6	2280.2	2039.4	1871.9	1822.8
62.5°	2333.1	2366.8	2364.9	2376.4	2363.0	2255.1	2174.2	2074.1	1841.1	1687.0	1641.7
65°	2067.4	2096.2	2094.3	2106.8	2103.9	2017.3	1944.1	1852.6	1642.7	1501.2	1461.7
67.5°	1809.3	1833.4	1826.6	1841.1	1844.9	1775.6	1712.0	1630.2	1454.0	1316.3	1282.6
70°	1557.0	1573.4	1564.7	1574.3	1583.0	1531.0	1477.1	1404.9	1252.7	1131.4	1103.5
72.5°	1309.5	1321.1	1307.6	1317.3	1325.0	1287.4	1243.1	1180.5	1054.4	949.4	926.3
75°	1069.8	1086.2	1058.2	1067.9	1073.6	1036.1	1010.1	959.1	850.2	769.4	754.0
77.5°	837.7	847.4	831.9	828.1	831.9	805.0	784.8	745.3	663.4	597.0	587.4
80°	616.3	622.0	606.6	602.8	605.7	586.4	571.0	542.1	484.3	434.3	430.4
82.5°	413.1	416.0	402.5	398.6	400.6	394.8	376.5	356.3	329.3	286.9	286.0
85°	235.9	235.9	226.3	222.4	224.4	214.7	208.0	197.4	186.8	157.9	159.8
87.5°	86.7	86.7	81.8	80.9	90.5	79.9	77.0	72.2	75.1	59.7	63.6
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Cooper Lighting Solutions Photometric Lab

1121 Highway 74 South

Peachtree City, GA 30269



TEST NUMBER: P834697

CATALOG NUMBER: ORLG-24-4-INS-ASY2-LD4-5LO-40-120-EDD-90

CANDELA DISTRIBUTION (continued):

	80°	90°	100°	110°	112.5°	120°	130°	135°	140°	150°	157.5°
0°	4405.3	4405.3	4405.3	4405.3	4405.3	4405.3	4405.3	4405.3	4405.3	4405.3	4405.3
2.5°	4424.5	4414.9	4406.2	4376.4	4388.9	4358.1	4356.2	4344.6	4335.9	4319.6	4340.8
5°	4410.1	4390.8	4365.8	4330.2	4340.8	4304.2	4296.5	4283.0	4271.4	4250.3	4266.6
7.5°	4387.0	4355.2	4315.7	4270.5	4284.9	4239.7	4228.1	4213.7	4204.0	4179.0	4193.4
10°	4353.3	4308.0	4261.8	4206.9	4217.5	4168.4	4154.0	4138.6	4129.9	4107.7	4122.2
12.5°	4301.3	4246.4	4183.8	4124.1	4135.7	4089.4	4070.2	4053.8	4050.9	4032.6	4050.0
15°	4233.9	4157.8	4093.3	4029.7	4043.2	3989.3	3980.6	3964.3	3969.1	3956.6	3977.7
17.5°	4148.2	4060.6	3990.3	3921.9	3935.4	3890.1	3883.4	3875.7	3880.5	3878.6	3901.7
20°	4051.9	3955.6	3874.7	3807.3	3815.0	3779.4	3782.3	3780.4	3790.0	3800.6	3832.4
22.5°	3943.1	3834.3	3749.5	3680.2	3691.8	3661.0	3674.4	3678.3	3694.7	3718.7	3759.2
25°	3820.8	3704.3	3615.7	3550.2	3560.8	3540.6	3563.7	3573.3	3599.3	3639.8	3681.2
27.5°	3692.7	3569.5	3475.1	3412.5	3432.7	3412.5	3447.2	3466.4	3505.9	3550.2	3601.3
30°	3557.0	3428.9	3331.6	3275.8	3295.1	3276.8	3332.6	3358.6	3398.1	3458.7	3519.4
32.5°	3414.5	3279.6	3184.3	3141.0	3154.5	3151.6	3214.2	3243.1	3296.0	3365.3	3429.9
35°	3268.1	3127.5	3031.2	2994.6	3011.0	3014.8	3090.0	3123.7	3181.4	3265.2	3334.5
37.5°	3116.9	2973.4	2879.1	2849.2	2863.7	2878.1	2965.7	2999.4	3064.9	3156.4	3232.5
40°	2960.0	2816.5	2724.1	2700.0	2714.4	2729.8	2825.2	2871.4	2942.6	3041.8	3124.6
42.5°	2801.1	2657.6	2568.1	2550.7	2565.2	2595.0	2696.1	2739.5	2814.6	2924.3	3015.8
45°	2639.3	2490.1	2412.1	2398.6	2414.0	2448.7	2547.8	2599.8	2679.8	2800.1	2898.3
47.5°	2475.6	2330.2	2256.1	2247.4	2262.8	2301.3	2411.1	2458.3	2543.0	2671.1	2777.0
50°	2310.0	2168.5	2097.2	2094.3	2108.8	2150.2	2255.1	2311.0	2398.6	2542.1	2650.9
52.5°	2142.5	2006.7	1942.2	1942.2	1955.7	1998.0	2103.9	2161.7	2252.2	2403.4	2523.8
55°	1974.9	1845.9	1784.3	1789.1	1808.3	1844.9	1948.0	2008.6	2100.1	2257.0	2384.1
57.5°	1807.4	1685.1	1629.2	1636.0	1654.3	1690.9	1792.0	1860.3	1943.1	2105.9	2235.9
60°	1641.7	1526.2	1477.1	1484.8	1501.2	1537.8	1642.7	1701.4	1784.3	1949.9	2079.9
62.5°	1474.2	1369.2	1323.0	1332.7	1347.1	1383.7	1482.9	1539.7	1621.5	1784.3	1915.2
65°	1308.6	1211.3	1171.9	1181.5	1195.0	1228.7	1322.1	1377.0	1454.9	1613.8	1739.0
67.5°	1144.9	1056.3	1023.6	1033.2	1043.8	1075.6	1152.6	1212.3	1285.5	1436.7	1555.1
70°	983.1	904.2	875.3	884.9	894.5	923.4	990.8	1045.7	1113.1	1251.8	1361.5
72.5°	823.3	746.2	731.8	740.5	748.2	773.2	837.7	881.1	939.8	1063.0	1157.4
75°	667.3	600.9	591.2	599.9	606.6	625.9	679.8	717.4	766.5	873.4	950.4
77.5°	517.1	461.2	457.4	464.1	470.9	484.3	526.7	566.2	604.7	683.7	752.0
80°	376.5	331.2	331.2	338.0	336.1	352.4	382.3	414.0	442.0	498.8	548.9
82.5°	248.4	212.8	217.6	222.4	225.3	232.1	250.4	274.4	291.8	326.4	359.2
85°	137.7	113.6	118.4	122.3	120.4	128.1	137.7	152.1	160.8	177.2	194.5
87.5°	51.0	42.4	43.3	46.2	48.1	52.0	52.0	60.7	61.6	63.6	67.4
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Cooper Lighting Solutions Photometric Lab

1121 Highway 74 South

Peachtree City, GA 30269



TEST NUMBER: P834697

CATALOG NUMBER: ORLG-24-4-INS-ASY2-LD4-5LO-40-120-EDD-90

CANDELA DISTRIBUTION (continued):

	160°	170°	180°
0°	4405.3	4405.3	4405.3
2.5°	4300.3	4323.4	4340.8
5°	4226.2	4245.4	4260.8
7.5°	4154.0	4171.3	4184.8
10°	4085.6	4104.9	4114.5
12.5°	4015.3	4037.4	4045.2
15°	3946.0	3968.1	3977.7
17.5°	3874.7	3903.6	3914.2
20°	3808.3	3844.9	3853.5
22.5°	3740.9	3778.4	3789.0
25°	3667.7	3712.0	3722.6
27.5°	3589.7	3642.7	3653.3
30°	3511.7	3569.5	3580.1
32.5°	3427.9	3490.5	3500.1
35°	3340.3	3402.9	3414.5
37.5°	3243.1	3311.4	3334.5
40°	3142.0	3216.1	3240.2
42.5°	3036.0	3116.9	3142.0
45°	2922.4	3011.0	3039.9
47.5°	2807.8	2908.0	2933.0
50°	2683.6	2790.5	2820.3
52.5°	2553.6	2670.1	2700.0
55°	2418.8	2536.3	2569.0
57.5°	2272.4	2393.8	2428.4
60°	2119.3	2240.7	2273.4
62.5°	1962.4	2072.2	2103.9
65°	1787.1	1890.2	1919.1
67.5°	1601.3	1695.7	1719.7
70°	1403.9	1485.8	1506.9
72.5°	1197.9	1254.7	1282.6
75°	985.0	1030.3	1051.5
77.5°	771.3	803.1	820.4
80°	562.3	580.6	595.1
82.5°	367.8	375.5	386.1
85°	198.4	198.4	205.1
87.5°	67.4	64.5	67.4
90°	0.0	0.0	0.0

(END OF REPORT)