



IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4DR-TL-L31-RGB940-DMX-UNV-OW-OF-WH-TD WHITE ONLY.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] 15271106.08
[TESTLAB] UL Verification Services Inc.
[ISSUE DATE] 15 OCT, 2024
[TEST DATE] 5/10/2024
[MANUFAC] H E WILLIAMS INC
[LUMCAT] 4DR-TL-L31-RGB940-DMX-UNV-OW-OF-WH-TD WHITE ONLY
[LUMINAIRE] 4" Black aluminum cylindrical housing with external driver
[MORE] and DMX controller.
[LAMP] 28 white LEDs
[BALLAST] ERP VLM60W-24-S
[OTHER] 24.7 C, 119.971 V, 0.352239 A, 41.8335 W, 0.98994 PF, 60.0072 Hz
[OTHER] This test was performed using the calibrated photodetector method
[MORE] of absolute photometry.
[OTHER] The reported results were measured in a facility that meets the
[MORE] requirements of ANSI/IES LM-75-19. The device under test emits no
[MORE] detectable uplight as defined by ANSI/IES LM-75-19.

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	2757
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	50
Total Luminaire Watts	55.4
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	0.98
Spacing Criterion (90-270)	0.98
Spacing Criterion (Diagonal)	0.86
Basic Luminous Shape	Circular
Luminous Length (0-180)	0.38 ft (Diameter)
Luminous Width (90-270)	0.38 ft (Diameter)
Luminous Height	0.00 ft

IES INDOOR REPORT**PHOTOMETRIC FILENAME : 4DR-TL-L31-RGB940-DMX-UNV-OW-OF-WH-TD WHITE ONLY.IES****LUMINANCE DATA (cd/sq.m)**

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	58062	58062	58062
55	42807	42807	42807
65	31567	31567	31567
75	21691	21691	21691
85	10617	10617	10617

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CANDELA TABULATION

	<u>0</u>
0.0	2387.088
0.5	2385.504
1.0	2383.920
1.5	2382.336
2.0	2379.168
2.5	2374.416
3.0	2369.664
3.5	2363.328
4.0	2355.408
4.5	2347.488
5.0	2337.984
5.5	2326.896
6.0	2315.808
6.5	2306.304
7.0	2293.632
7.5	2282.544
8.0	2269.872
8.5	2257.200
9.0	2244.528
9.5	2231.856
10.0	2216.016
10.5	2201.760
11.0	2187.504
11.5	2174.832
12.0	2162.160
12.5	2151.072
13.0	2139.984
13.5	2130.480
14.0	2122.560
14.5	2114.640
15.0	2106.720
15.5	2100.384
16.0	2094.048
16.5	2086.128
17.0	2078.208
17.5	2070.288
18.0	2062.368
18.5	2052.864
19.0	2041.776
19.5	2030.688
20.0	2018.016
20.5	2003.760
21.0	1989.504
21.5	1972.080
22.0	1953.072
22.5	1929.312
23.0	1903.968
23.5	1872.288
24.0	1837.440
24.5	1796.256
25.0	1751.904
25.5	1698.048
26.0	1641.024
26.5	1579.090

IES INDOOR REPORT**PHOTOMETRIC FILENAME : 4DR-TL-L31-RGB940-DMX-UNV-OW-OF-WH-TD WHITE ONLY.IES****CANDELA TABULATION - (Cont.)**

27.0	1514.938
27.5	1448.568
28.0	1381.406
28.5	1312.344
29.0	1244.866
29.5	1182.139
30.0	1121.947
30.5	1056.053
31.0	992.693
31.5	932.026
32.0	874.843
32.5	820.987
33.0	771.725
33.5	727.056
34.0	686.981
34.5	651.341
35.0	620.136
35.5	592.733
36.0	568.814
36.5	548.539
37.0	531.590
37.5	517.018
38.0	504.821
38.5	494.366
39.0	485.654
39.5	478.210
40.0	471.874
40.5	466.488
41.0	461.736
41.5	457.459
42.0	453.182
42.5	448.589
43.0	443.995
43.5	439.085
44.0	433.699
44.5	427.997
45.0	421.661
45.5	414.216
46.0	405.979
46.5	397.742
47.0	389.347
47.5	380.160
48.0	370.656
48.5	361.310
49.0	351.965
49.5	342.778
50.0	333.590
50.5	324.720
51.0	316.166
51.5	307.454
52.0	299.059
52.5	290.822
53.0	282.586
53.5	274.666
54.0	266.904
54.5	259.459

IES INDOOR REPORT**PHOTOMETRIC FILENAME : 4DR-TL-L31-RGB940-DMX-UNV-OW-OF-WH-TD WHITE ONLY.IES****CANDELA TABULATION - (Cont.)**

55.0	252.173
55.5	245.045
56.0	238.234
56.5	231.581
57.0	224.928
57.5	218.592
58.0	212.414
58.5	206.395
59.0	200.376
59.5	194.515
60.0	188.813
60.5	183.110
61.0	177.566
61.5	172.181
62.0	166.795
62.5	161.410
63.0	156.341
63.5	151.430
64.0	146.520
64.5	141.768
65.0	137.016
65.5	132.581
66.0	128.146
66.5	123.710
67.0	119.434
67.5	114.998
68.0	110.722
68.5	106.445
69.0	102.168
69.5	97.891
70.0	93.614
70.5	89.496
71.0	85.536
71.5	81.734
72.0	77.933
72.5	74.290
73.0	70.805
73.5	67.320
74.0	63.994
74.5	60.826
75.0	57.658
75.5	54.490
76.0	51.480
76.5	48.470
77.0	45.619
77.5	42.768
78.0	39.917
78.5	37.224
79.0	34.531
79.5	31.838
80.0	29.304
80.5	26.770
81.0	24.394
81.5	22.018
82.0	19.800
82.5	17.741

IES INDOOR REPORT**PHOTOMETRIC FILENAME : 4DR-TL-L31-RGB940-DMX-UNV-OW-OF-WH-TD WHITE ONLY.IES****CANDELA TABULATION - (Cont.)**

83.0	15.682
83.5	13.781
84.0	12.038
84.5	10.613
85.0	9.504
85.5	8.712
86.0	7.762
86.5	6.653
87.0	5.544
87.5	4.435
88.0	3.326
88.5	2.376
89.0	1.426
89.5	0.792
90.0	0.000
90.5	0.000
91.0	0.000
91.5	0.000
92.0	0.000
92.5	0.000
93.0	0.000
93.5	0.000
94.0	0.000
94.5	0.000
95.0	0.000
95.5	0.000
96.0	0.000
96.5	0.000
97.0	0.000
97.5	0.000
98.0	0.000
98.5	0.000
99.0	0.000
99.5	0.000
100.0	0.000
100.5	0.000
101.0	0.000
101.5	0.000
102.0	0.000
102.5	0.000
103.0	0.000
103.5	0.000
104.0	0.000
104.5	0.000
105.0	0.000
105.5	0.000
106.0	0.000
106.5	0.000
107.0	0.000
107.5	0.000
108.0	0.000
108.5	0.000
109.0	0.000
109.5	0.000
110.0	0.000
110.5	0.000

IES INDOOR REPORT**PHOTOMETRIC FILENAME : 4DR-TL-L31-RGB940-DMX-UNV-OW-OF-WH-TD WHITE ONLY.IES****CANDELA TABULATION - (Cont.)**

111.0	0.000
111.5	0.000
112.0	0.000
112.5	0.000
113.0	0.000
113.5	0.000
114.0	0.000
114.5	0.000
115.0	0.000
115.5	0.000
116.0	0.000
116.5	0.000
117.0	0.000
117.5	0.000
118.0	0.000
118.5	0.000
119.0	0.000
119.5	0.000
120.0	0.000
120.5	0.000
121.0	0.000
121.5	0.000
122.0	0.000
122.5	0.000
123.0	0.000
123.5	0.000
124.0	0.000
124.5	0.000
125.0	0.000
125.5	0.000
126.0	0.000
126.5	0.000
127.0	0.000
127.5	0.000
128.0	0.000
128.5	0.000
129.0	0.000
129.5	0.000
130.0	0.000
130.5	0.000
131.0	0.000
131.5	0.000
132.0	0.000
132.5	0.000
133.0	0.000
133.5	0.000
134.0	0.000
134.5	0.000
135.0	0.000
135.5	0.000
136.0	0.000
136.5	0.000
137.0	0.000
137.5	0.000
138.0	0.000
138.5	0.000

IES INDOOR REPORT**PHOTOMETRIC FILENAME : 4DR-TL-L31-RGB940-DMX-UNV-OW-OF-WH-TD WHITE ONLY.IES****CANDELA TABULATION - (Cont.)**

139.0	0.000
139.5	0.000
140.0	0.000
140.5	0.000
141.0	0.000
141.5	0.000
142.0	0.000
142.5	0.000
143.0	0.000
143.5	0.000
144.0	0.000
144.5	0.000
145.0	0.000
145.5	0.000
146.0	0.000
146.5	0.000
147.0	0.000
147.5	0.000
148.0	0.000
148.5	0.000
149.0	0.000
149.5	0.000
150.0	0.000
150.5	0.000
151.0	0.000
151.5	0.000
152.0	0.000
152.5	0.000
153.0	0.000
153.5	0.000
154.0	0.000
154.5	0.000
155.0	0.000
155.5	0.000
156.0	0.000
156.5	0.000
157.0	0.000
157.5	0.000
158.0	0.000
158.5	0.000
159.0	0.000
159.5	0.000
160.0	0.000
160.5	0.000
161.0	0.000
161.5	0.000
162.0	0.000
162.5	0.000
163.0	0.000
163.5	0.000
164.0	0.000
164.5	0.000
165.0	0.000
165.5	0.000
166.0	0.000
166.5	0.000

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CANDELA TABULATION - (Cont.)

167.0	0.000
167.5	0.000
168.0	0.000
168.5	0.000
169.0	0.000
169.5	0.000
170.0	0.000
170.5	0.000
171.0	0.000
171.5	0.000
172.0	0.000
172.5	0.000
173.0	0.000
173.5	0.000
174.0	0.000
174.5	0.000
175.0	0.000
175.5	0.000
176.0	0.000
176.5	0.000
177.0	0.000
177.5	0.000
178.0	0.000
178.5	0.000
179.0	0.000
179.5	0.000
180.0	0.000

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Zone	Lumens	%Lamp	%Fixt
0-20	814.91	N.A.	29.60
0-30	1578.7	N.A.	57.30
0-40	1999.29	N.A.	72.50
0-60	2545.8	N.A.	92.30
0-80	2744.73	N.A.	99.60
0-90	2757.12	N.A.	100.00
10-90	2537.94	N.A.	92.10
20-40	1184.38	N.A.	43.00
20-50	1503.11	N.A.	54.50
40-70	683.42	N.A.	24.80
60-80	198.93	N.A.	7.20
70-80	62.02	N.A.	2.20
80-90	12.40	N.A.	0.40
90-110	0.00	N.A.	0.00
90-120	0.00	N.A.	0.00
90-130	0.00	N.A.	0.00
90-150	0.00	N.A.	0.00
90-180	0.00	N.A.	0.00
110-180	0.00	N.A.	0.00
0-180	2757.12	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	219.18
10-20	595.73
20-30	763.80
30-40	420.59
40-50	318.72
50-60	227.78
60-70	136.92
70-80	62.02
80-90	12.40
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

Effective Floor Cavity Reflectance 0.20

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
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	112	108	105	102	109	106	103	101	102	100	98	98	96	95	95	93	92	90
2	105	99	94	89	102	97	92	88	93	90	86	90	87	84	87	85	83	81
3	98	90	84	79	96	89	83	78	86	81	77	83	79	76	81	77	75	73
4	92	83	76	71	90	81	75	70	79	74	69	77	72	69	75	71	68	66
5	86	76	69	64	84	75	69	64	73	68	63	72	66	63	70	65	62	60
6	81	71	64	58	80	70	63	58	68	62	58	67	61	57	65	61	57	55
7	77	66	59	54	75	65	58	54	64	58	53	62	57	53	61	56	53	51
8	72	61	54	50	71	61	54	50	60	54	49	58	53	49	57	53	49	47
9	69	58	51	46	67	57	51	46	56	50	46	55	50	46	54	49	46	44
10	65	54	48	43	64	54	47	43	53	47	43	52	47	43	51	46	43	41

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UGR TABLE - CORRECTED

Reflectances

Ceiling Cavity	70	70	50	50	30	70	70	50	50	30
Walls	50	30	50	30	30	50	30	50	30	30
Floor Cavity	20	20	20	20	20	20	20	20	20	20

Room Size UGR Viewed Crosswise

X=2H	Y=2H	22.0	23.2	22.3	23.6	23.9	22.0	23.2	22.3	23.6	23.9
	3H	23.2	24.3	23.5	24.6	25.0	23.2	24.3	23.5	24.6	25.0
	4H	23.5	24.5	23.9	24.9	25.3	23.5	24.5	23.9	24.9	25.3
	6H	23.7	24.6	24.1	25.0	25.4	23.7	24.6	24.1	25.0	25.4
	8H	23.7	24.6	24.1	25.0	25.4	23.7	24.6	24.1	25.0	25.4
	12H	23.7	24.6	24.1	24.9	25.4	23.7	24.6	24.1	24.9	25.4

UGR Viewed Endwise

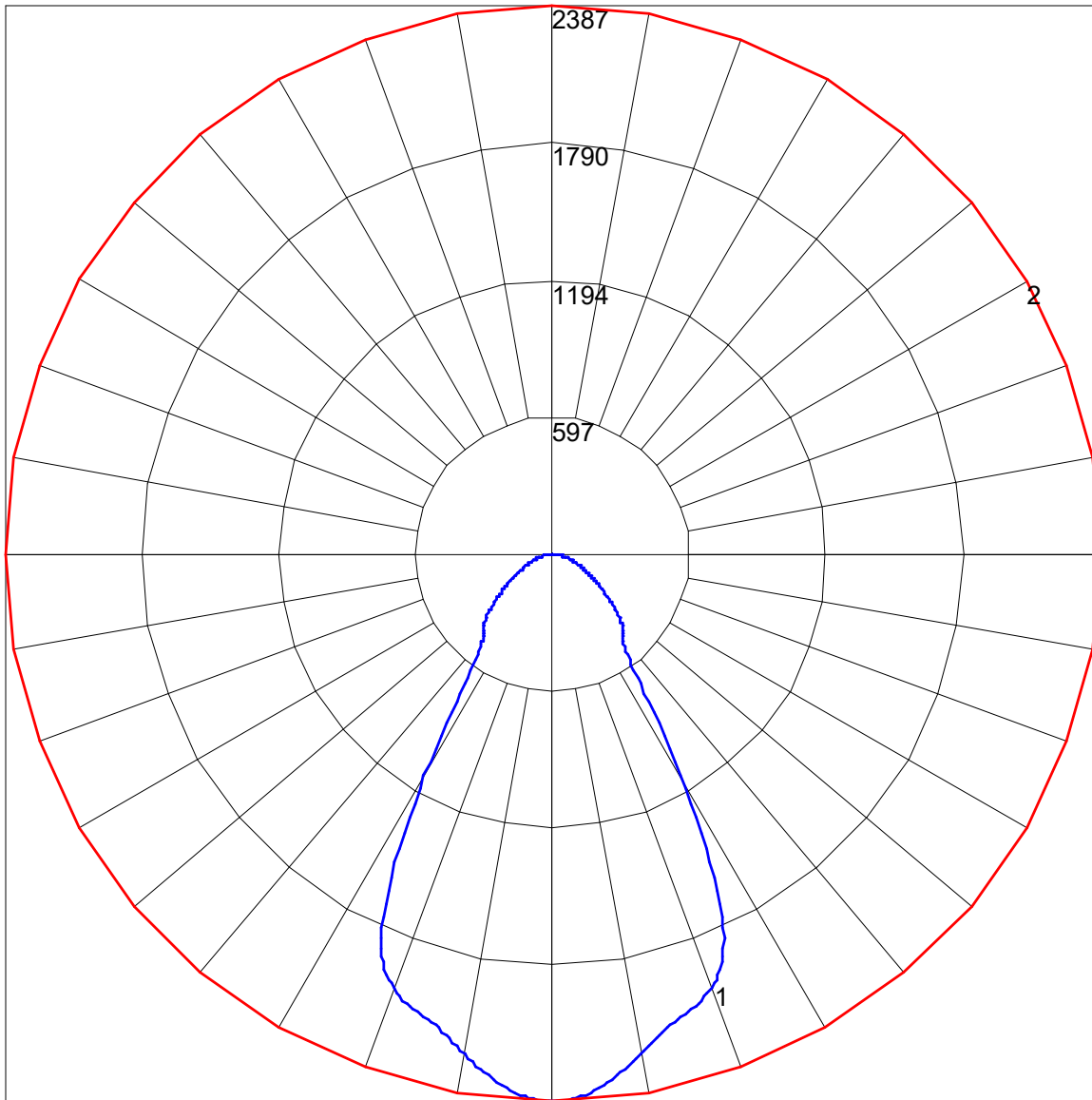
4H	2H	22.4	23.4	22.8	23.8	24.1	22.4	23.4	22.8	23.8	24.1
	3H	23.7	24.6	24.1	25.0	25.4	23.7	24.6	24.1	25.0	25.4
	4H	24.1	24.9	24.6	25.3	25.8	24.1	24.9	24.6	25.3	25.8
	6H	24.4	25.1	24.9	25.5	26.0	24.4	25.1	24.9	25.5	26.0
	8H	24.4	25.1	24.9	25.5	26.0	24.4	25.1	24.9	25.5	26.0
	12H	24.5	25.0	24.9	25.5	25.9	24.5	25.0	24.9	25.5	25.9
8H	4H	24.2	24.9	24.7	25.3	25.8	24.2	24.9	24.7	25.3	25.8
	6H	24.6	25.1	25.1	25.6	26.1	24.6	25.1	25.1	25.6	26.1
	8H	24.7	25.1	25.2	25.6	26.1	24.7	25.1	25.2	25.6	26.1
	12H	24.7	25.1	25.2	25.6	26.1	24.7	25.1	25.2	25.6	26.1
12H	4H	24.2	24.8	24.7	25.2	25.7	24.2	24.8	24.7	25.2	25.7
	6H	24.6	25.0	25.1	25.5	26.0	24.6	25.0	25.1	25.5	26.0
	8H	24.7	25.1	25.2	25.6	26.1	24.7	25.1	25.2	25.6	26.1

Maximum UGR = 26.1

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POLAR GRAPH



Maximum Candela = 2387.088 Located At Horizontal Angle = 0, Vertical Angle = 0

1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)

2 - Horizontal Cone Through Vertical Angle (0) (Through Max. Cd.)