



IES INDOOR REPORT  
PHOTOMETRIC FILENAME : 4DR-TL-L31-RGB940-DMX-UNV-OM-OF-CS-TD WHITE ONLY.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002  
[TEST] 15271106.09  
[TESTLAB] UL Verification Services Inc.  
[ISSUE DATE] 15 OCT, 2024  
[TEST DATE] 5/13/2024  
[MANUFAC] H E WILLIAMS INC  
[LUMCAT] 4DR-TL-L31-RGB940-DMX-UNV-OM-OF-CS 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, 119.967 V, 0.353798 A, 42.0162 W, 0.989915 PF, 60.0072 Hz  
[OTHER] This test was performed using the calibrated photodetector  
[MORE] method of absolute photometry.

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	3219
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	58
Total Luminaire Watts	55.4
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	0.74
Spacing Criterion (90-270)	0.74
Spacing Criterion (Diagonal)	0.76
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

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	26971	26971	26971
55	3019	3019	3019
65	2422	2422	2422
75	3564	3564	3564
85	5946	5946	5946

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## CANDELA TABULATION

	<u>0</u>
0.0	4910.334
0.5	4909.036
1.0	4903.844
1.5	4898.652
2.0	4890.864
2.5	4884.374
3.0	4877.884
3.5	4871.394
4.0	4864.904
4.5	4857.116
5.0	4846.732
5.5	4832.454
6.0	4811.686
6.5	4788.322
7.0	4755.872
7.5	4718.230
8.0	4676.694
8.5	4626.072
9.0	4570.258
9.5	4509.252
10.0	4443.054
10.5	4370.366
11.0	4293.784
11.5	4215.904
12.0	4135.428
12.5	4054.952
13.0	3971.880
13.5	3888.808
14.0	3807.034
14.5	3725.260
15.0	3644.784
15.5	3565.606
16.0	3487.726
16.5	3411.144
17.0	3335.860
17.5	3263.172
18.0	3193.080
18.5	3124.286
19.0	3058.088
19.5	2994.486
20.0	2932.182
20.5	2875.070
21.0	2820.554
21.5	2769.932
22.0	2723.204
22.5	2676.476
23.0	2629.748
23.5	2581.722
24.0	2528.504
24.5	2466.200
25.0	2396.108
25.5	2316.930
26.0	2231.262
26.5	2139.104

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

27.0	2043.052
27.5	1944.404
28.0	1845.756
28.5	1747.108
29.0	1651.056
29.5	1556.302
30.0	1465.442
30.5	1378.476
31.0	1293.587
31.5	1212.072
32.0	1133.284
32.5	1060.596
33.0	994.787
33.5	930.277
34.0	871.218
34.5	816.702
35.0	765.950
35.5	717.794
36.0	674.311
36.5	634.073
37.0	598.118
37.5	565.019
38.0	534.906
38.5	507.129
39.0	481.169
39.5	457.156
40.0	434.441
40.5	412.634
41.0	391.347
41.5	370.060
42.0	348.773
42.5	326.447
43.0	303.213
43.5	278.810
44.0	252.461
44.5	224.294
45.0	195.868
45.5	167.182
46.0	139.275
46.5	113.315
47.0	90.730
47.5	71.779
48.0	55.944
48.5	43.743
49.0	34.657
49.5	28.426
50.0	24.532
50.5	22.715
51.0	21.806
51.5	21.157
52.0	20.508
52.5	19.989
53.0	19.600
53.5	19.210
54.0	18.691
54.5	18.302

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55.0	17.783
55.5	17.263
56.0	16.614
56.5	15.965
57.0	15.446
57.5	14.797
58.0	14.278
58.5	13.759
59.0	13.240
59.5	12.850
60.0	12.461
60.5	12.071
61.0	11.812
61.5	11.552
62.0	11.293
62.5	11.033
63.0	10.903
63.5	10.773
64.0	10.644
64.5	10.514
65.0	10.514
65.5	10.384
66.0	10.384
66.5	10.514
67.0	10.514
67.5	10.644
68.0	10.773
68.5	10.903
69.0	11.033
69.5	11.163
70.0	11.163
70.5	11.293
71.0	11.422
71.5	11.422
72.0	11.422
72.5	11.293
73.0	11.033
73.5	10.773
74.0	10.384
74.5	9.995
75.0	9.475
75.5	9.086
76.0	8.697
76.5	8.307
77.0	7.918
77.5	7.658
78.0	7.399
78.5	7.139
79.0	7.009
79.5	6.750
80.0	6.620
80.5	6.490
81.0	6.490
81.5	6.360
82.0	6.360
82.5	6.230

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83.0	6.101
83.5	5.971
84.0	5.841
84.5	5.711
85.0	5.322
85.5	4.803
86.0	4.283
86.5	3.634
87.0	2.985
87.5	2.336
88.0	1.687
88.5	1.168
89.0	0.649
89.5	0.389
90.0	0.130
90.5	0.130
91.0	0.130
91.5	0.130
92.0	0.130
92.5	0.130
93.0	0.130
93.5	0.130
94.0	0.130
94.5	0.130
95.0	0.130
95.5	0.130
96.0	0.130
96.5	0.130
97.0	0.130
97.5	0.130
98.0	0.130
98.5	0.130
99.0	0.130
99.5	0.130
100.0	0.130
100.5	0.130
101.0	0.130
101.5	0.130
102.0	0.130
102.5	0.130
103.0	0.130
103.5	0.130
104.0	0.130
104.5	0.130
105.0	0.130
105.5	0.130
106.0	0.130
106.5	0.130
107.0	0.130
107.5	0.130
108.0	0.130
108.5	0.130
109.0	0.130
109.5	0.130
110.0	0.130
110.5	0.130

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111.0	0.130
111.5	0.130
112.0	0.130
112.5	0.130
113.0	0.130
113.5	0.130
114.0	0.130
114.5	0.130
115.0	0.130
115.5	0.130
116.0	0.130
116.5	0.130
117.0	0.130
117.5	0.130
118.0	0.130
118.5	0.130
119.0	0.130
119.5	0.130
120.0	0.130
120.5	0.130
121.0	0.130
121.5	0.130
122.0	0.130
122.5	0.130
123.0	0.130
123.5	0.130
124.0	0.260
124.5	0.260
125.0	0.260
125.5	0.260
126.0	0.260
126.5	0.260
127.0	0.260
127.5	0.389
128.0	0.389
128.5	0.389
129.0	0.389
129.5	0.389
130.0	0.519
130.5	0.519
131.0	0.519
131.5	0.519
132.0	0.649
132.5	0.649
133.0	0.649
133.5	0.779
134.0	0.779
134.5	0.779
135.0	0.909
135.5	0.909
136.0	0.909
136.5	1.038
137.0	1.038
137.5	1.168
138.0	1.168
138.5	1.168

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139.0	1.298
139.5	1.298
140.0	1.428
140.5	1.428
141.0	1.558
141.5	1.558
142.0	1.558
142.5	1.687
143.0	1.687
143.5	1.817
144.0	1.817
144.5	1.947
145.0	1.947
145.5	2.077
146.0	2.077
146.5	2.077
147.0	2.207
147.5	2.207
148.0	2.336
148.5	2.336
149.0	2.466
149.5	2.466
150.0	2.596
150.5	2.596
151.0	2.596
151.5	2.726
152.0	2.726
152.5	2.856
153.0	2.856
153.5	2.985
154.0	2.985
154.5	2.985
155.0	3.115
155.5	3.115
156.0	3.245
156.5	3.245
157.0	3.245
157.5	3.375
158.0	3.375
158.5	3.375
159.0	3.505
159.5	3.505
160.0	3.505
160.5	3.634
161.0	3.634
161.5	3.764
162.0	3.764
162.5	3.764
163.0	3.894
163.5	3.894
164.0	3.894
164.5	3.894
165.0	4.024
165.5	4.024
166.0	4.024
166.5	4.154

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**CANDELA TABULATION - (Cont.)**

<b>167.0</b>	4.154
<b>167.5</b>	4.154
<b>168.0</b>	4.154
<b>168.5</b>	4.283
<b>169.0</b>	4.283
<b>169.5</b>	4.283
<b>170.0</b>	4.283
<b>170.5</b>	4.283
<b>171.0</b>	4.283
<b>171.5</b>	4.413
<b>172.0</b>	4.413
<b>172.5</b>	4.413
<b>173.0</b>	4.413
<b>173.5</b>	4.413
<b>174.0</b>	4.543
<b>174.5</b>	4.543
<b>175.0</b>	4.543
<b>175.5</b>	4.543
<b>176.0</b>	4.543
<b>176.5</b>	4.543
<b>177.0</b>	4.543
<b>177.5</b>	4.543
<b>178.0</b>	4.543
<b>178.5</b>	4.543
<b>179.0</b>	4.543
<b>179.5</b>	4.543
<b>180.0</b>	4.543



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Zone	Lumens	%Lamp	%Fixt
0-20	1464.85	N.A.	45.50
0-30	2511.64	N.A.	78.00
0-40	3019.09	N.A.	93.80
0-60	3187.58	N.A.	99.00
0-80	3208.34	N.A.	99.70
0-90	3213.03	N.A.	99.80
10-90	2762.31	N.A.	85.80
20-40	1554.24	N.A.	48.30
20-50	1707.02	N.A.	53.00
40-70	179.36	N.A.	5.60
60-80	20.76	N.A.	0.60
70-80	9.89	N.A.	0.30
80-90	4.69	N.A.	0.10
90-110	0.28	N.A.	0.00
90-120	0.41	N.A.	0.00
90-130	0.63	N.A.	0.00
90-150	2.52	N.A.	0.10
90-180	5.47	N.A.	0.20
110-180	5.19	N.A.	0.20
0-180	3218.5	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	450.72
10-20	1014.13
20-30	1046.79
30-40	507.45
40-50	152.78
50-60	15.71
60-70	10.87
70-80	9.89
80-90	4.69
90-100	0.14
100-110	0.14
110-120	0.13
120-130	0.22
130-140	0.68
140-150	1.22
150-160	1.41
160-170	1.12
170-180	0.42

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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	114	111	109	106	111	109	107	105	105	103	101	101	100	98	98	97	96	94
2	108	104	100	97	106	102	99	96	99	96	93	96	94	91	93	91	90	88
3	103	97	93	89	101	96	92	88	93	90	87	91	88	85	89	86	84	82
4	99	91	86	82	97	90	85	82	88	84	81	86	83	80	84	81	79	77
5	94	86	81	77	92	85	80	76	83	79	76	82	78	75	80	77	74	73
6	90	81	76	72	88	81	75	71	79	74	71	78	74	70	76	73	70	69
7	86	77	71	67	84	76	71	67	75	70	67	74	70	66	73	69	66	65
8	82	73	67	63	81	72	67	63	71	66	63	70	66	63	69	65	62	61
9	78	69	64	60	77	69	63	60	68	63	60	67	63	59	66	62	59	58
10	75	66	60	57	74	65	60	57	65	60	57	64	60	56	63	59	56	55

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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	4.1	4.1	4.1	4.4	4.7	4.1	4.1	4.1	4.4	4.7
	3H	5.4	6.3	5.8	6.6	7.0	5.4	6.3	5.8	6.6	7.0
	4H	6.8	7.6	7.2	8.0	8.3	6.8	7.6	7.2	8.0	8.3
	6H	7.7	8.5	8.2	8.8	9.2	7.7	8.5	8.2	8.8	9.2
	8H	8.3	8.9	8.7	9.3	9.7	8.3	8.9	8.7	9.3	9.7
	12H	8.8	9.5	9.3	9.9	10.3	8.8	9.5	9.3	9.9	10.3

### UGR Viewed Endwise

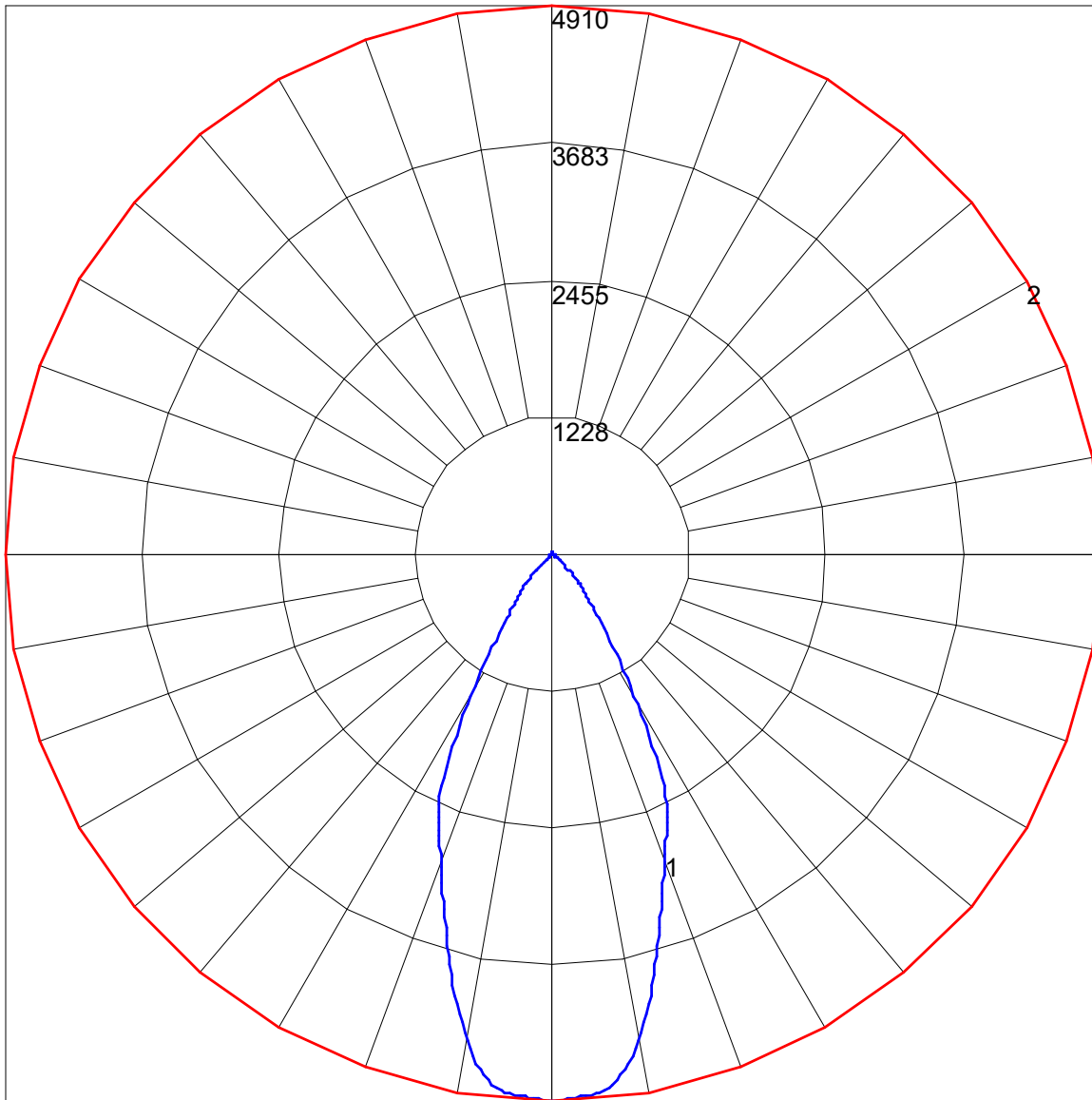
4H	2H	4.1	4.3	4.1	4.7	5.1	4.1	4.3	4.1	4.7	5.1
	3H	6.4	7.1	6.9	7.5	7.9	6.4	7.1	6.9	7.5	7.9
	4H	7.9	8.5	8.3	8.9	9.4	7.9	8.5	8.3	8.9	9.4
	6H	9.0	9.5	9.5	9.9	10.4	9.0	9.5	9.5	9.9	10.4
	8H	9.6	10.0	10.1	10.5	11.0	9.6	10.0	10.1	10.5	11.0
	12H	10.3	10.7	10.8	11.2	11.6	10.3	10.7	10.8	11.2	11.6
8H	4H	8.4	8.8	8.8	9.3	9.7	8.4	8.8	8.8	9.3	9.7
	6H	9.6	10.0	10.2	10.5	11.0	9.6	10.0	10.2	10.5	11.0
	8H	10.4	10.7	10.9	11.3	11.7	10.4	10.7	10.9	11.3	11.7
	12H	11.3	11.6	11.8	12.1	12.7	11.3	11.6	11.8	12.1	12.7
12H	4H	8.4	8.8	8.9	9.3	9.8	8.4	8.8	8.9	9.3	9.8
	6H	9.8	10.1	10.3	10.6	11.1	9.8	10.1	10.3	10.6	11.1
	8H	10.7	10.9	11.2	11.4	12.0	10.7	10.9	11.2	11.4	12.0

Maximum UGR = 12.7

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## POLAR GRAPH



Maximum Candela = 4910.334 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.)