



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : 8CRDI-TL-L20-8TWU-L20-8TWD-XXX-DALI-UNV-OM-CSU-OW-CSD-WM 4000K\_.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002  
 [TEST] GEN from UL #12326812.04  
 [TESTLAB]  
 [ISSUE DATE] 23-FEB-2021  
 [MANUFAC] WILLIAMS INDOOR  
 [OTHER] H.E. WILLIAMS, INC. - CARTHAGE, MO.  
 [LUMCAT] 8CRDI-TL-L20-8TWU-L20-8TWD-xxx-DIM1-UNV-OM-CSU-OW-CDS-WM 4000k  
 [LUMINAIRE] White formed aluminum housing, specular reflector, cover glass  
 [MORE]  
 [LAMP] One white LED  
 [SEARCH\_SOURCETYPE] LED  
 [SEARCH\_APPLICATION] INDOOR, DIRECT, INDIRECT  
 [SEARCH\_MOUNTING] WALL

### CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	4469
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	93
Total Luminaire Watts	48
Ballast Factor	1.00
CIE Type	General Diffuse
Spacing Criterion (0-180)	N.A.
Spacing Criterion (90-270)	N.A.
Spacing Criterion (Diagonal)	N.A.
Basic Luminous Shape	Circular
Luminous Length (0-180)	0.50 ft (Diameter)
Luminous Width (90-270)	0.50 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	4007	4007	4007
55	1396	1396	1396
65	291	291	291
75	0	0	0
85	0	0	0

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**CANDELA TABULATION**

	<u>0.0</u>	<u>22.5</u>	<u>45.0</u>	<u>67.5</u>	<u>90.0</u>	<u>112.5</u>	<u>135.0</u>	<u>157.5</u>	<u>180.0</u>	<u>202.5</u>
0	1880.203	1880.203	1880.203	1880.203	1880.203	1880.203	1880.203	1880.203	1880.203	1880.203
5	1775.622	1775.622	1775.622	1775.622	1775.622	1775.622	1775.622	1775.622	1775.622	1775.622
10	1954.421	1954.421	1954.421	1954.421	1954.421	1954.421	1954.421	1954.421	1954.421	1954.421
15	1951.047	1951.047	1951.047	1951.047	1951.047	1951.047	1951.047	1951.047	1951.047	1951.047
20	2037.636	2037.636	2037.636	2037.636	2037.636	2037.636	2037.636	2037.636	2037.636	2037.636
25	2228.805	2228.805	2228.805	2228.805	2228.805	2228.805	2228.805	2228.805	2228.805	2228.805
30	2189.446	2189.446	2189.446	2189.446	2189.446	2189.446	2189.446	2189.446	2189.446	2189.446
35	679.212	679.212	679.212	679.212	679.212	679.212	679.212	679.212	679.212	679.212
40	93.335	93.335	93.335	93.335	93.335	93.335	93.335	93.335	93.335	93.335
45	51.728	51.728	51.728	51.728	51.728	51.728	51.728	51.728	51.728	51.728
50	30.362	30.362	30.362	30.362	30.362	30.362	30.362	30.362	30.362	30.362
55	14.619	14.619	14.619	14.619	14.619	14.619	14.619	14.619	14.619	14.619
60	7.872	7.872	7.872	7.872	7.872	7.872	7.872	7.872	7.872	7.872
65	2.249	2.249	2.249	2.249	2.249	2.249	2.249	2.249	2.249	2.249
70	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
75	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
80	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
85	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
90	0.104	0.104	0.104	0.104	0.104	0.104	0.104	0.104	0.104	0.104
95	0.314	0.314	0.314	0.314	0.314	0.314	0.314	0.314	0.314	0.314
100	0.628	0.628	0.628	0.628	0.628	0.628	0.628	0.628	0.628	0.628
105	1.151	1.151	1.151	1.151	1.151	1.151	1.151	1.151	1.151	1.151
110	2.301	2.301	2.301	2.301	2.301	2.301	2.301	2.301	2.301	2.301
115	4.185	4.185	4.185	4.185	4.185	4.185	4.185	4.185	4.185	4.185
120	7.637	7.637	7.637	7.637	7.637	7.637	7.637	7.637	7.637	7.637
125	14.437	14.437	14.437	14.437	14.437	14.437	14.437	14.437	14.437	14.437
130	28.038	28.038	28.038	28.038	28.038	28.038	28.038	28.038	28.038	28.038
135	48.333	48.333	48.333	48.333	48.333	48.333	48.333	48.333	48.333	48.333
140	121.147	121.147	121.147	121.147	121.147	121.147	121.147	121.147	121.147	121.147
145	413.760	413.760	413.760	413.760	413.760	413.760	413.760	413.760	413.760	413.760
150	1049.306	1049.306	1049.306	1049.306	1049.306	1049.306	1049.306	1049.306	1049.306	1049.306
155	1477.189	1477.189	1477.189	1477.189	1477.189	1477.189	1477.189	1477.189	1477.189	1477.189
160	2000.273	2000.273	2000.273	2000.273	2000.273	2000.273	2000.273	2000.273	2000.273	2000.273
165	2432.340	2432.340	2432.340	2432.340	2432.340	2432.340	2432.340	2432.340	2432.340	2432.340
170	3131.180	3131.180	3131.180	3131.180	3131.180	3131.180	3131.180	3131.180	3131.180	3131.180
175	4155.380	4155.380	4155.380	4155.380	4155.380	4155.380	4155.380	4155.380	4155.380	4155.380
180	4197.303	4197.303	4197.303	4197.303	4197.303	4197.303	4197.303	4197.303	4197.303	4197.303

**Vert. Horizontal Angles**

	<u>225.0</u>	<u>247.5</u>	<u>270.0</u>	<u>292.5</u>	<u>315.0</u>	<u>337.5</u>	<u>360.0</u>
0	1880.203	1880.203	1880.203	1880.203	1880.203	1880.203	1880.203
5	1775.622	1775.622	1775.622	1775.622	1775.622	1775.622	1775.622
10	1954.421	1954.421	1954.421	1954.421	1954.421	1954.421	1954.421
15	1951.047	1951.047	1951.047	1951.047	1951.047	1951.047	1951.047
20	2037.636	2037.636	2037.636	2037.636	2037.636	2037.636	2037.636
25	2228.805	2228.805	2228.805	2228.805	2228.805	2228.805	2228.805
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35	679.212	679.212	679.212	679.212	679.212	679.212	679.212
40	93.335	93.335	93.335	93.335	93.335	93.335	93.335
45	51.728	51.728	51.728	51.728	51.728	51.728	51.728
50	30.362	30.362	30.362	30.362	30.362	30.362	30.362
55	14.619	14.619	14.619	14.619	14.619	14.619	14.619
60	7.872	7.872	7.872	7.872	7.872	7.872	7.872

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**CANDELA TABULATION - (Cont.)**

<b>65</b>	2.249	2.249	2.249	2.249	2.249	2.249	2.249
<b>70</b>	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>75</b>	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>80</b>	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>85</b>	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>90</b>	0.104	0.104	0.104	0.104	0.104	0.104	0.104
<b>95</b>	0.314	0.314	0.314	0.314	0.314	0.314	0.314
<b>100</b>	0.628	0.628	0.628	0.628	0.628	0.628	0.628
<b>105</b>	1.151	1.151	1.151	1.151	1.151	1.151	1.151
<b>110</b>	2.301	2.301	2.301	2.301	2.301	2.301	2.301
<b>115</b>	4.185	4.185	4.185	4.185	4.185	4.185	4.185
<b>120</b>	7.637	7.637	7.637	7.637	7.637	7.637	7.637
<b>125</b>	14.437	14.437	14.437	14.437	14.437	14.437	14.437
<b>130</b>	28.038	28.038	28.038	28.038	28.038	28.038	28.038
<b>135</b>	48.333	48.333	48.333	48.333	48.333	48.333	48.333
<b>140</b>	121.147	121.147	121.147	121.147	121.147	121.147	121.147
<b>145</b>	413.760	413.760	413.760	413.760	413.760	413.760	413.760
<b>150</b>	1049.306	1049.306	1049.306	1049.306	1049.306	1049.306	1049.306
<b>155</b>	1477.189	1477.189	1477.189	1477.189	1477.189	1477.189	1477.189
<b>160</b>	2000.273	2000.273	2000.273	2000.273	2000.273	2000.273	2000.273
<b>165</b>	2432.340	2432.340	2432.340	2432.340	2432.340	2432.340	2432.340
<b>170</b>	3131.180	3131.180	3131.180	3131.180	3131.180	3131.180	3131.180
<b>175</b>	4155.380	4155.380	4155.380	4155.380	4155.380	4155.380	4155.380
<b>180</b>	4197.303	4197.303	4197.303	4197.303	4197.303	4197.303	4197.303

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Zone	Lumens	%Lamp	%Fixt
0-20	737.53	N.A.	16.50
0-30	1744.14	N.A.	39.00
0-40	2295.46	N.A.	51.40
0-60	2353.89	N.A.	52.70
0-80	2356.92	N.A.	52.70
0-90	2356.95	N.A.	52.70
10-90	2179.81	N.A.	48.80
20-40	1557.93	N.A.	34.90
20-50	1601.38	N.A.	35.80
40-70	61.46	N.A.	1.40
60-80	3.03	N.A.	0.10
70-80	0.00	N.A.	0.00
80-90	0.03	N.A.	0.00
90-110	1.75	N.A.	0.00
90-120	6.26	N.A.	0.10
90-130	20.60	N.A.	0.50
90-150	372.11	N.A.	8.30
90-180	2112.41	N.A.	47.30
110-180	2110.66	N.A.	47.20
0-180	4469.36	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	177.14
10-20	560.39
20-30	1006.6
30-40	551.32
40-50	43.45
50-60	14.98
60-70	3.03
70-80	0.00
80-90	0.03
90-100	0.37
100-110	1.38
110-120	4.52
120-130	14.34
130-140	46.81
140-150	304.69
150-160	684.45
160-170	695.33
170-180	360.52

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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	108	108	108	108	100	100	100	100	85	85	85	71	71	71	59	59	59	53
1	101	97	94	92	93	91	88	86	78	76	75	66	65	64	56	55	54	49
2	94	88	84	80	87	83	79	75	72	69	66	62	60	58	52	51	50	46
3	88	81	75	70	82	76	71	67	66	63	60	57	55	53	49	48	46	43
4	82	74	67	62	77	69	64	60	61	57	54	53	51	48	46	44	43	40
5	77	67	61	56	72	64	58	54	57	52	49	50	47	44	44	41	40	37
6	72	62	55	51	67	59	53	49	52	48	45	47	43	41	41	39	37	34
7	68	57	51	46	63	54	49	44	49	44	41	44	40	38	39	36	34	32
8	64	53	47	42	60	51	45	41	46	41	38	41	37	35	36	34	32	30
9	60	49	43	39	56	47	41	37	43	38	35	38	35	32	34	32	30	28
10	56	46	40	36	53	44	38	35	40	35	32	36	33	30	32	30	28	26

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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	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
	3H	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
	4H	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
	6H	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
	8H	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
	12H	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2

### UGR Viewed Endwise

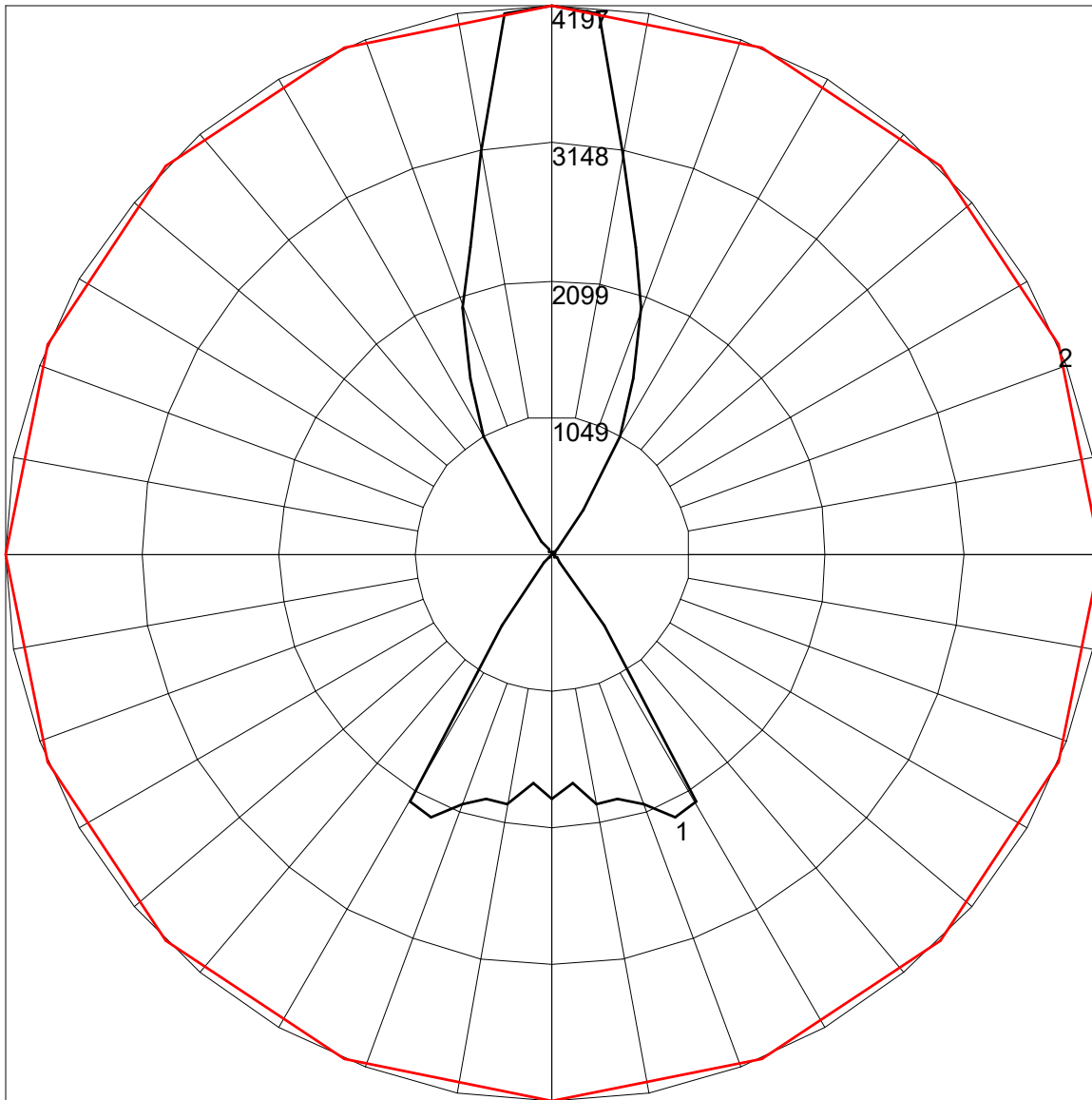
4H	2H	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
	3H	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
	4H	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
	6H	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
	8H	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
	12H	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
8H	4H	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
	6H	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
	8H	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
	12H	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
12H	4H	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
	6H	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
	8H	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2

Maximum UGR = 5.2

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## POLAR GRAPH



Maximum Candela = 4197.303 Located At Horizontal Angle = 0, Vertical Angle = 180

# 1 - Vertical Plane Through Horizontal Angles (90 - 270)

# 2 - Horizontal Cone Through Vertical Angle (180) (Through Max. Cd.)