



IES INDOOR REPORT

PHOTOMETRIC FILENAME : 8CRDI-TL-L20-8TWU-L20-8TWD-XXX-DALI-UNV-OM-CSU-OM-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-OM-CSD-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	4367
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	91
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	4109	4109	4109
55	1513	1513	1513
65	595	595	595
75	267	267	267
85	216	216	216

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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>
0.0	4607.891	4607.891	4607.891	4607.891	4607.891	4607.891	4607.891	4607.891	4607.891	4607.891
2.5	4664.155	4664.155	4664.155	4664.155	4664.155	4664.155	4664.155	4664.155	4664.155	4664.155
5.0	4560.813	4560.813	4560.813	4560.813	4560.813	4560.813	4560.813	4560.813	4560.813	4560.813
7.5	4101.517	4101.517	4101.517	4101.517	4101.517	4101.517	4101.517	4101.517	4101.517	4101.517
10.0	3436.685	3436.685	3436.685	3436.685	3436.685	3436.685	3436.685	3436.685	3436.685	3436.685
12.5	2990.020	2990.020	2990.020	2990.020	2990.020	2990.020	2990.020	2990.020	2990.020	2990.020
15.0	2669.660	2669.660	2669.660	2669.660	2669.660	2669.660	2669.660	2669.660	2669.660	2669.660
17.5	2418.196	2418.196	2418.196	2418.196	2418.196	2418.196	2418.196	2418.196	2418.196	2418.196
20.0	2195.437	2195.437	2195.437	2195.437	2195.437	2195.437	2195.437	2195.437	2195.437	2195.437
22.5	1924.452	1924.452	1924.452	1924.452	1924.452	1924.452	1924.452	1924.452	1924.452	1924.452
25.0	1621.316	1621.316	1621.316	1621.316	1621.316	1621.316	1621.316	1621.316	1621.316	1621.316
27.5	1351.480	1351.480	1351.480	1351.480	1351.480	1351.480	1351.480	1351.480	1351.480	1351.480
30.0	1151.686	1151.686	1151.686	1151.686	1151.686	1151.686	1151.686	1151.686	1151.686	1151.686
32.5	816.629	816.629	816.629	816.629	816.629	816.629	816.629	816.629	816.629	816.629
35.0	454.129	454.129	454.129	454.129	454.129	454.129	454.129	454.129	454.129	454.129
37.5	198.072	198.072	198.072	198.072	198.072	198.072	198.072	198.072	198.072	198.072
40.0	132.966	132.966	132.966	132.966	132.966	132.966	132.966	132.966	132.966	132.966
42.5	74.980	74.980	74.980	74.980	74.980	74.980	74.980	74.980	74.980	74.980
45.0	53.049	53.049	53.049	53.049	53.049	53.049	53.049	53.049	53.049	53.049
47.5	41.107	41.107	41.107	41.107	41.107	41.107	41.107	41.107	41.107	41.107
50.0	30.773	30.773	30.773	30.773	30.773	30.773	30.773	30.773	30.773	30.773
52.5	22.276	22.276	22.276	22.276	22.276	22.276	22.276	22.276	22.276	22.276
55.0	15.846	15.846	15.846	15.846	15.846	15.846	15.846	15.846	15.846	15.846
57.5	11.482	11.482	11.482	11.482	11.482	11.482	11.482	11.482	11.482	11.482
60.0	8.382	8.382	8.382	8.382	8.382	8.382	8.382	8.382	8.382	8.382
62.5	6.200	6.200	6.200	6.200	6.200	6.200	6.200	6.200	6.200	6.200
65.0	4.593	4.593	4.593	4.593	4.593	4.593	4.593	4.593	4.593	4.593
67.5	3.330	3.330	3.330	3.330	3.330	3.330	3.330	3.330	3.330	3.330
70.0	2.526	2.526	2.526	2.526	2.526	2.526	2.526	2.526	2.526	2.526
72.5	1.837	1.837	1.837	1.837	1.837	1.837	1.837	1.837	1.837	1.837
75.0	1.263	1.263	1.263	1.263	1.263	1.263	1.263	1.263	1.263	1.263
77.5	0.919	0.919	0.919	0.919	0.919	0.919	0.919	0.919	0.919	0.919
80.0	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689	0.689
82.5	0.459	0.459	0.459	0.459	0.459	0.459	0.459	0.459	0.459	0.459
85.0	0.344	0.344	0.344	0.344	0.344	0.344	0.344	0.344	0.344	0.344
87.5	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230
90.0	0.219	0.219	0.219	0.219	0.219	0.219	0.219	0.219	0.219	0.219
92.5	0.209	0.209	0.209	0.209	0.209	0.209	0.209	0.209	0.209	0.209
95.0	0.314	0.314	0.314	0.314	0.314	0.314	0.314	0.314	0.314	0.314
97.5	0.418	0.418	0.418	0.418	0.418	0.418	0.418	0.418	0.418	0.418
100.0	0.628	0.628	0.628	0.628	0.628	0.628	0.628	0.628	0.628	0.628
102.5	0.837	0.837	0.837	0.837	0.837	0.837	0.837	0.837	0.837	0.837
105.0	1.151	1.151	1.151	1.151	1.151	1.151	1.151	1.151	1.151	1.151
107.5	1.674	1.674	1.674	1.674	1.674	1.674	1.674	1.674	1.674	1.674
110.0	2.301	2.301	2.301	2.301	2.301	2.301	2.301	2.301	2.301	2.301
112.5	3.034	3.034	3.034	3.034	3.034	3.034	3.034	3.034	3.034	3.034
115.0	4.185	4.185	4.185	4.185	4.185	4.185	4.185	4.185	4.185	4.185
117.5	5.649	5.649	5.649	5.649	5.649	5.649	5.649	5.649	5.649	5.649
120.0	7.637	7.637	7.637	7.637	7.637	7.637	7.637	7.637	7.637	7.637
122.5	10.462	10.462	10.462	10.462	10.462	10.462	10.462	10.462	10.462	10.462
125.0	14.437	14.437	14.437	14.437	14.437	14.437	14.437	14.437	14.437	14.437
127.5	20.295	20.295	20.295	20.295	20.295	20.295	20.295	20.295	20.295	20.295
130.0	28.038	28.038	28.038	28.038	28.038	28.038	28.038	28.038	28.038	28.038
132.5	37.453	37.453	37.453	37.453	37.453	37.453	37.453	37.453	37.453	37.453

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CANDELA TABULATION - (Cont.)

135.0	48.333	48.333	48.333	48.333	48.333	48.333	48.333	48.333	48.333	48.333
137.5	68.314	68.314	68.314	68.314	68.314	68.314	68.314	68.314	68.314	68.314
140.0	121.147	121.147	121.147	121.147	121.147	121.147	121.147	121.147	121.147	121.147
142.5	180.464	180.464	180.464	180.464	180.464	180.464	180.464	180.464	180.464	180.464
145.0	413.760	413.760	413.760	413.760	413.760	413.760	413.760	413.760	413.760	413.760
147.5	744.034	744.034	744.034	744.034	744.034	744.034	744.034	744.034	744.034	744.034
150.0	1049.306	1049.306	1049.306	1049.306	1049.306	1049.306	1049.306	1049.306	1049.306	1049.306
152.5	1231.340	1231.340	1231.340	1231.340	1231.340	1231.340	1231.340	1231.340	1231.340	1231.340
155.0	1477.189	1477.189	1477.189	1477.189	1477.189	1477.189	1477.189	1477.189	1477.189	1477.189
157.5	1753.377	1753.377	1753.377	1753.377	1753.377	1753.377	1753.377	1753.377	1753.377	1753.377
160.0	2000.273	2000.273	2000.273	2000.273	2000.273	2000.273	2000.273	2000.273	2000.273	2000.273
162.5	2203.229	2203.229	2203.229	2203.229	2203.229	2203.229	2203.229	2203.229	2203.229	2203.229
165.0	2432.340	2432.340	2432.340	2432.340	2432.340	2432.340	2432.340	2432.340	2432.340	2432.340
167.5	2724.221	2724.221	2724.221	2724.221	2724.221	2724.221	2724.221	2724.221	2724.221	2724.221
170.0	3131.180	3131.180	3131.180	3131.180	3131.180	3131.180	3131.180	3131.180	3131.180	3131.180
172.5	3736.912	3736.912	3736.912	3736.912	3736.912	3736.912	3736.912	3736.912	3736.912	3736.912
175.0	4155.380	4155.380	4155.380	4155.380	4155.380	4155.380	4155.380	4155.380	4155.380	4155.380
177.5	4249.534	4249.534	4249.534	4249.534	4249.534	4249.534	4249.534	4249.534	4249.534	4249.534
180.0	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>
0.0	4607.891	4607.891	4607.891	4607.891	4607.891	4607.891	4607.891
2.5	4664.155	4664.155	4664.155	4664.155	4664.155	4664.155	4664.155
5.0	4560.813	4560.813	4560.813	4560.813	4560.813	4560.813	4560.813
7.5	4101.517	4101.517	4101.517	4101.517	4101.517	4101.517	4101.517
10.0	3436.685	3436.685	3436.685	3436.685	3436.685	3436.685	3436.685
12.5	2990.020	2990.020	2990.020	2990.020	2990.020	2990.020	2990.020
15.0	2669.660	2669.660	2669.660	2669.660	2669.660	2669.660	2669.660
17.5	2418.196	2418.196	2418.196	2418.196	2418.196	2418.196	2418.196
20.0	2195.437	2195.437	2195.437	2195.437	2195.437	2195.437	2195.437
22.5	1924.452	1924.452	1924.452	1924.452	1924.452	1924.452	1924.452
25.0	1621.316	1621.316	1621.316	1621.316	1621.316	1621.316	1621.316
27.5	1351.480	1351.480	1351.480	1351.480	1351.480	1351.480	1351.480
30.0	1151.686	1151.686	1151.686	1151.686	1151.686	1151.686	1151.686
32.5	816.629	816.629	816.629	816.629	816.629	816.629	816.629
35.0	454.129	454.129	454.129	454.129	454.129	454.129	454.129
37.5	198.072	198.072	198.072	198.072	198.072	198.072	198.072
40.0	132.966	132.966	132.966	132.966	132.966	132.966	132.966
42.5	74.980	74.980	74.980	74.980	74.980	74.980	74.980
45.0	53.049	53.049	53.049	53.049	53.049	53.049	53.049
47.5	41.107	41.107	41.107	41.107	41.107	41.107	41.107
50.0	30.773	30.773	30.773	30.773	30.773	30.773	30.773
52.5	22.276	22.276	22.276	22.276	22.276	22.276	22.276
55.0	15.846	15.846	15.846	15.846	15.846	15.846	15.846
57.5	11.482	11.482	11.482	11.482	11.482	11.482	11.482
60.0	8.382	8.382	8.382	8.382	8.382	8.382	8.382
62.5	6.200	6.200	6.200	6.200	6.200	6.200	6.200
65.0	4.593	4.593	4.593	4.593	4.593	4.593	4.593
67.5	3.330	3.330	3.330	3.330	3.330	3.330	3.330
70.0	2.526	2.526	2.526	2.526	2.526	2.526	2.526
72.5	1.837	1.837	1.837	1.837	1.837	1.837	1.837
75.0	1.263	1.263	1.263	1.263	1.263	1.263	1.263
77.5	0.919	0.919	0.919	0.919	0.919	0.919	0.919
80.0	0.689	0.689	0.689	0.689	0.689	0.689	0.689

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82.5	0.459	0.459	0.459	0.459	0.459	0.459	0.459
85.0	0.344	0.344	0.344	0.344	0.344	0.344	0.344
87.5	0.230	0.230	0.230	0.230	0.230	0.230	0.230
90.0	0.219	0.219	0.219	0.219	0.219	0.219	0.219
92.5	0.209	0.209	0.209	0.209	0.209	0.209	0.209
95.0	0.314	0.314	0.314	0.314	0.314	0.314	0.314
97.5	0.418	0.418	0.418	0.418	0.418	0.418	0.418
100.0	0.628	0.628	0.628	0.628	0.628	0.628	0.628
102.5	0.837	0.837	0.837	0.837	0.837	0.837	0.837
105.0	1.151	1.151	1.151	1.151	1.151	1.151	1.151
107.5	1.674	1.674	1.674	1.674	1.674	1.674	1.674
110.0	2.301	2.301	2.301	2.301	2.301	2.301	2.301
112.5	3.034	3.034	3.034	3.034	3.034	3.034	3.034
115.0	4.185	4.185	4.185	4.185	4.185	4.185	4.185
117.5	5.649	5.649	5.649	5.649	5.649	5.649	5.649
120.0	7.637	7.637	7.637	7.637	7.637	7.637	7.637
122.5	10.462	10.462	10.462	10.462	10.462	10.462	10.462
125.0	14.437	14.437	14.437	14.437	14.437	14.437	14.437
127.5	20.295	20.295	20.295	20.295	20.295	20.295	20.295
130.0	28.038	28.038	28.038	28.038	28.038	28.038	28.038
132.5	37.453	37.453	37.453	37.453	37.453	37.453	37.453
135.0	48.333	48.333	48.333	48.333	48.333	48.333	48.333
137.5	68.314	68.314	68.314	68.314	68.314	68.314	68.314
140.0	121.147	121.147	121.147	121.147	121.147	121.147	121.147
142.5	180.464	180.464	180.464	180.464	180.464	180.464	180.464
145.0	413.760	413.760	413.760	413.760	413.760	413.760	413.760
147.5	744.034	744.034	744.034	744.034	744.034	744.034	744.034
150.0	1049.306	1049.306	1049.306	1049.306	1049.306	1049.306	1049.306
152.5	1231.340	1231.340	1231.340	1231.340	1231.340	1231.340	1231.340
155.0	1477.189	1477.189	1477.189	1477.189	1477.189	1477.189	1477.189
157.5	1753.377	1753.377	1753.377	1753.377	1753.377	1753.377	1753.377
160.0	2000.273	2000.273	2000.273	2000.273	2000.273	2000.273	2000.273
162.5	2203.229	2203.229	2203.229	2203.229	2203.229	2203.229	2203.229
165.0	2432.340	2432.340	2432.340	2432.340	2432.340	2432.340	2432.340
167.5	2724.221	2724.221	2724.221	2724.221	2724.221	2724.221	2724.221
170.0	3131.180	3131.180	3131.180	3131.180	3131.180	3131.180	3131.180
172.5	3736.912	3736.912	3736.912	3736.912	3736.912	3736.912	3736.912
175.0	4155.380	4155.380	4155.380	4155.380	4155.380	4155.380	4155.380
177.5	4249.534	4249.534	4249.534	4249.534	4249.534	4249.534	4249.534
180.0	4197.303	4197.303	4197.303	4197.303	4197.303	4197.303	4197.303

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Zone	Lumens	%Lamp	%Fixt
0-20	1151.52	N.A.	26.40
0-30	1897.17	N.A.	43.40
0-40	2215.16	N.A.	50.70
0-60	2278.15	N.A.	52.20
0-80	2284.45	N.A.	52.30
0-90	2284.86	N.A.	52.30
10-90	1887.99	N.A.	43.20
20-40	1063.65	N.A.	24.40
20-50	1111.3	N.A.	25.50
40-70	67.81	N.A.	1.60
60-80	6.30	N.A.	0.10
70-80	1.48	N.A.	0.00
80-90	0.40	N.A.	0.00
90-110	1.72	N.A.	0.00
90-120	6.11	N.A.	0.10
90-130	20.08	N.A.	0.50
90-150	353.22	N.A.	8.10
90-180	2081.74	N.A.	47.70
110-180	2080.02	N.A.	47.60
0-180	4366.6	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	396.86
10-20	754.66
20-30	745.66
30-40	317.99
40-50	47.66
50-60	15.33
60-70	4.82
70-80	1.48
80-90	0.40
90-100	0.37
100-110	1.35
110-120	4.39
120-130	13.96
130-140	43.42
140-150	289.72
150-160	679.37
160-170	687.57
170-180	361.58

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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	58	58	58	52
1	101	98	95	92	94	91	89	86	78	77	75	66	65	64	56	55	54	50
2	95	89	85	81	88	83	79	76	72	70	67	62	61	59	53	52	51	47
3	89	82	76	72	83	77	72	68	67	64	61	59	56	54	50	49	48	44
4	83	75	69	65	78	71	66	62	63	59	56	55	52	50	48	46	45	42
5	79	70	63	59	73	66	60	56	59	55	52	52	49	47	46	44	42	39
6	74	65	58	54	69	61	56	52	55	51	48	49	46	44	44	41	40	37
7	70	60	54	50	66	57	52	48	52	48	44	46	43	41	42	39	38	35
8	66	56	50	46	62	54	48	45	49	45	42	44	41	39	40	37	36	34
9	63	53	47	43	59	51	45	42	46	42	39	42	39	36	38	36	34	32
10	60	50	44	40	56	48	43	39	44	40	37	40	37	35	36	34	32	31

IES INDOOR REPORT

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

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

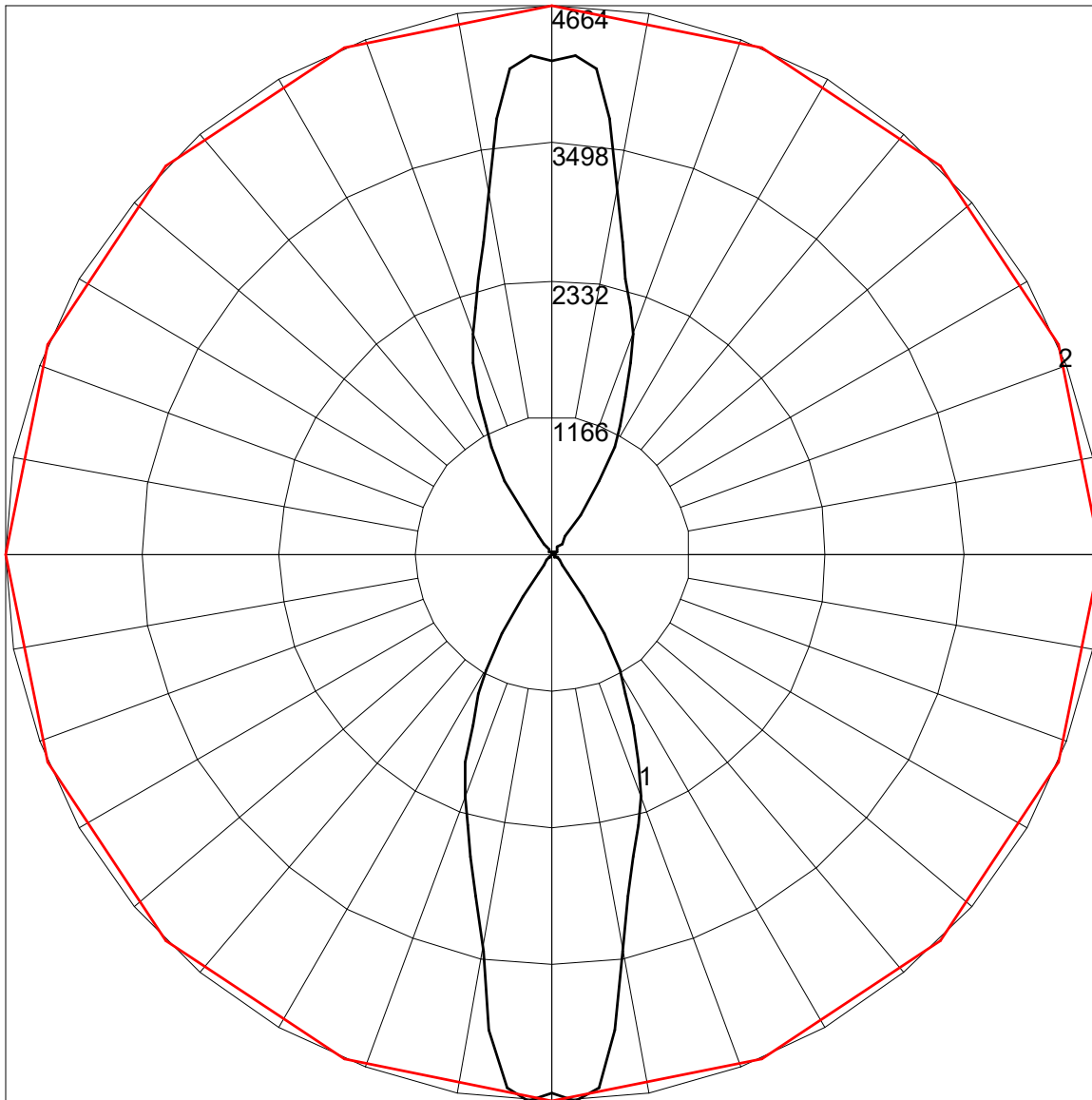
4H	2H	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
	3H	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
	4H	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
	6H	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
	8H	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
	12H	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
8H	4H	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
	6H	5.2	5.2	5.2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

IES INDOOR REPORT

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

POLAR GRAPH



Maximum Candela = 4664.155 Located At Horizontal Angle = 0, Vertical Angle = 2.5

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

2 - Horizontal Cone Through Vertical Angle (2.5) (Through Max. Cd.)