



IES INDOOR REPORT

PHOTOMETRIC FILENAME : 8CRDI-TL-L20-8TWU-L20-8TWD-XXX-DALI-UNV-OM-CSU-ON-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-ON-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	4269
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	89
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	1067	1067	1067
55	405	405	405
65	137	137	137
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>
0.0	23311.046	23311.046	23311.046	23311.046	23311.046	23311.046	23311.046	23311.046	23311.046	23311.046
2.5	18362.747	18362.747	18362.747	18362.747	18362.747	18362.747	18362.747	18362.747	18362.747	18362.747
5.0	10415.799	10415.799	10415.799	10415.799	10415.799	10415.799	10415.799	10415.799	10415.799	10415.799
7.5	5860.609	5860.609	5860.609	5860.609	5860.609	5860.609	5860.609	5860.609	5860.609	5860.609
10.0	3736.125	3736.125	3736.125	3736.125	3736.125	3736.125	3736.125	3736.125	3736.125	3736.125
12.5	2678.651	2678.651	2678.651	2678.651	2678.651	2678.651	2678.651	2678.651	2678.651	2678.651
15.0	2153.093	2153.093	2153.093	2153.093	2153.093	2153.093	2153.093	2153.093	2153.093	2153.093
17.5	1856.407	1856.407	1856.407	1856.407	1856.407	1856.407	1856.407	1856.407	1856.407	1856.407
20.0	1650.846	1650.846	1650.846	1650.846	1650.846	1650.846	1650.846	1650.846	1650.846	1650.846
22.5	1397.603	1397.603	1397.603	1397.603	1397.603	1397.603	1397.603	1397.603	1397.603	1397.603
25.0	1081.844	1081.844	1081.844	1081.844	1081.844	1081.844	1081.844	1081.844	1081.844	1081.844
27.5	872.045	872.045	872.045	872.045	872.045	872.045	872.045	872.045	872.045	872.045
30.0	799.993	799.993	799.993	799.993	799.993	799.993	799.993	799.993	799.993	799.993
32.5	574.299	574.299	574.299	574.299	574.299	574.299	574.299	574.299	574.299	574.299
35.0	256.421	256.421	256.421	256.421	256.421	256.421	256.421	256.421	256.421	256.421
37.5	40.264	40.264	40.264	40.264	40.264	40.264	40.264	40.264	40.264	40.264
40.0	22.252	22.252	22.252	22.252	22.252	22.252	22.252	22.252	22.252	22.252
42.5	18.013	18.013	18.013	18.013	18.013	18.013	18.013	18.013	18.013	18.013
45.0	13.775	13.775	13.775	13.775	13.775	13.775	13.775	13.775	13.775	13.775
47.5	10.596	10.596	10.596	10.596	10.596	10.596	10.596	10.596	10.596	10.596
50.0	8.477	8.477	8.477	8.477	8.477	8.477	8.477	8.477	8.477	8.477
52.5	5.298	5.298	5.298	5.298	5.298	5.298	5.298	5.298	5.298	5.298
55.0	4.238	4.238	4.238	4.238	4.238	4.238	4.238	4.238	4.238	4.238
57.5	3.179	3.179	3.179	3.179	3.179	3.179	3.179	3.179	3.179	3.179
60.0	2.119	2.119	2.119	2.119	2.119	2.119	2.119	2.119	2.119	2.119
62.5	2.119	2.119	2.119	2.119	2.119	2.119	2.119	2.119	2.119	2.119
65.0	1.060	1.060	1.060	1.060	1.060	1.060	1.060	1.060	1.060	1.060
67.5	1.060	1.060	1.060	1.060	1.060	1.060	1.060	1.060	1.060	1.060
70.0	1.060	1.060	1.060	1.060	1.060	1.060	1.060	1.060	1.060	1.060
72.5	1.060	1.060	1.060	1.060	1.060	1.060	1.060	1.060	1.060	1.060
75.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
77.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
80.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
82.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
85.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
87.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
90.0	0.104	0.104	0.104	0.104	0.104	0.104	0.104	0.104	0.104	0.104
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	23311.046	23311.046	23311.046	23311.046	23311.046	23311.046	23311.046
2.5	18362.747	18362.747	18362.747	18362.747	18362.747	18362.747	18362.747
5.0	10415.799	10415.799	10415.799	10415.799	10415.799	10415.799	10415.799
7.5	5860.609	5860.609	5860.609	5860.609	5860.609	5860.609	5860.609
10.0	3736.125	3736.125	3736.125	3736.125	3736.125	3736.125	3736.125
12.5	2678.651	2678.651	2678.651	2678.651	2678.651	2678.651	2678.651
15.0	2153.093	2153.093	2153.093	2153.093	2153.093	2153.093	2153.093
17.5	1856.407	1856.407	1856.407	1856.407	1856.407	1856.407	1856.407
20.0	1650.846	1650.846	1650.846	1650.846	1650.846	1650.846	1650.846
22.5	1397.603	1397.603	1397.603	1397.603	1397.603	1397.603	1397.603
25.0	1081.844	1081.844	1081.844	1081.844	1081.844	1081.844	1081.844
27.5	872.045	872.045	872.045	872.045	872.045	872.045	872.045
30.0	799.993	799.993	799.993	799.993	799.993	799.993	799.993
32.5	574.299	574.299	574.299	574.299	574.299	574.299	574.299
35.0	256.421	256.421	256.421	256.421	256.421	256.421	256.421
37.5	40.264	40.264	40.264	40.264	40.264	40.264	40.264
40.0	22.252	22.252	22.252	22.252	22.252	22.252	22.252
42.5	18.013	18.013	18.013	18.013	18.013	18.013	18.013
45.0	13.775	13.775	13.775	13.775	13.775	13.775	13.775
47.5	10.596	10.596	10.596	10.596	10.596	10.596	10.596
50.0	8.477	8.477	8.477	8.477	8.477	8.477	8.477
52.5	5.298	5.298	5.298	5.298	5.298	5.298	5.298
55.0	4.238	4.238	4.238	4.238	4.238	4.238	4.238
57.5	3.179	3.179	3.179	3.179	3.179	3.179	3.179
60.0	2.119	2.119	2.119	2.119	2.119	2.119	2.119
62.5	2.119	2.119	2.119	2.119	2.119	2.119	2.119
65.0	1.060	1.060	1.060	1.060	1.060	1.060	1.060
67.5	1.060	1.060	1.060	1.060	1.060	1.060	1.060
70.0	1.060	1.060	1.060	1.060	1.060	1.060	1.060
72.5	1.060	1.060	1.060	1.060	1.060	1.060	1.060
75.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
77.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
80.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000

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82.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
85.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
87.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
90.0	0.104	0.104	0.104	0.104	0.104	0.104	0.104
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	1462.83	N.A.	34.30
0-30	1979.83	N.A.	46.40
0-40	2170.22	N.A.	50.80
0-60	2185.25	N.A.	51.20
0-80	2187.1	N.A.	51.20
0-90	2187.11	N.A.	51.20
10-90	1361.54	N.A.	31.90
20-40	707.39	N.A.	16.60
20-50	718.42	N.A.	16.80
40-70	16.46	N.A.	0.40
60-80	1.85	N.A.	0.00
70-80	0.41	N.A.	0.00
80-90	0.01	N.A.	0.00
90-110	1.71	N.A.	0.00
90-120	6.10	N.A.	0.10
90-130	20.06	N.A.	0.50
90-150	353.21	N.A.	8.30
90-180	2081.73	N.A.	48.80
110-180	2080.02	N.A.	48.70
0-180	4268.84	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	825.58
10-20	637.26
20-30	517.00
30-40	190.39
40-50	11.03
50-60	3.99
60-70	1.44
70-80	0.41
80-90	0.01
90-100	0.36
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 RW	80				70				50			30			10			0
	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
0	107	107	107	107	99	99	99	99	84	84	84	70	70	70	57	57	57	51
1	101	98	95	93	94	91	89	87	78	77	75	66	65	64	55	55	54	49
2	95	90	86	82	88	84	80	77	73	71	68	63	61	60	53	52	52	47
3	90	83	78	74	84	78	74	70	69	65	63	60	58	56	52	50	49	46
4	85	77	72	67	79	73	68	64	65	61	58	57	55	53	50	48	47	44
5	80	72	66	62	75	68	63	60	61	57	55	54	52	50	48	46	45	42
6	76	68	62	58	72	64	59	56	58	54	51	52	49	47	46	45	43	41
7	73	64	58	54	69	61	56	52	55	51	49	50	47	45	45	43	42	40
8	69	60	55	51	66	58	53	49	53	49	46	48	45	43	44	42	40	38
9	66	57	52	48	63	55	50	47	50	47	44	46	44	42	42	40	39	37
10	64	55	49	46	60	53	48	45	48	45	42	45	42	40	41	39	38	36

IES INDOOR REPORT

PHOTOMETRIC FILENAME : 8CRDI-TL-L20-8TWU-L20-8TWD-XXX-DALI-UNV-OM-CSU-ON-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
	3H	5.2	5.2	5.2	5.2	5.2
	4H	5.2	5.2	5.2	5.2	5.2
	6H	5.2	5.2	5.2	5.2	5.2
	8H	5.2	5.2	5.2	5.2	5.2
	12H	5.2	5.2	5.2	5.2	5.2

UGR Viewed Endwise

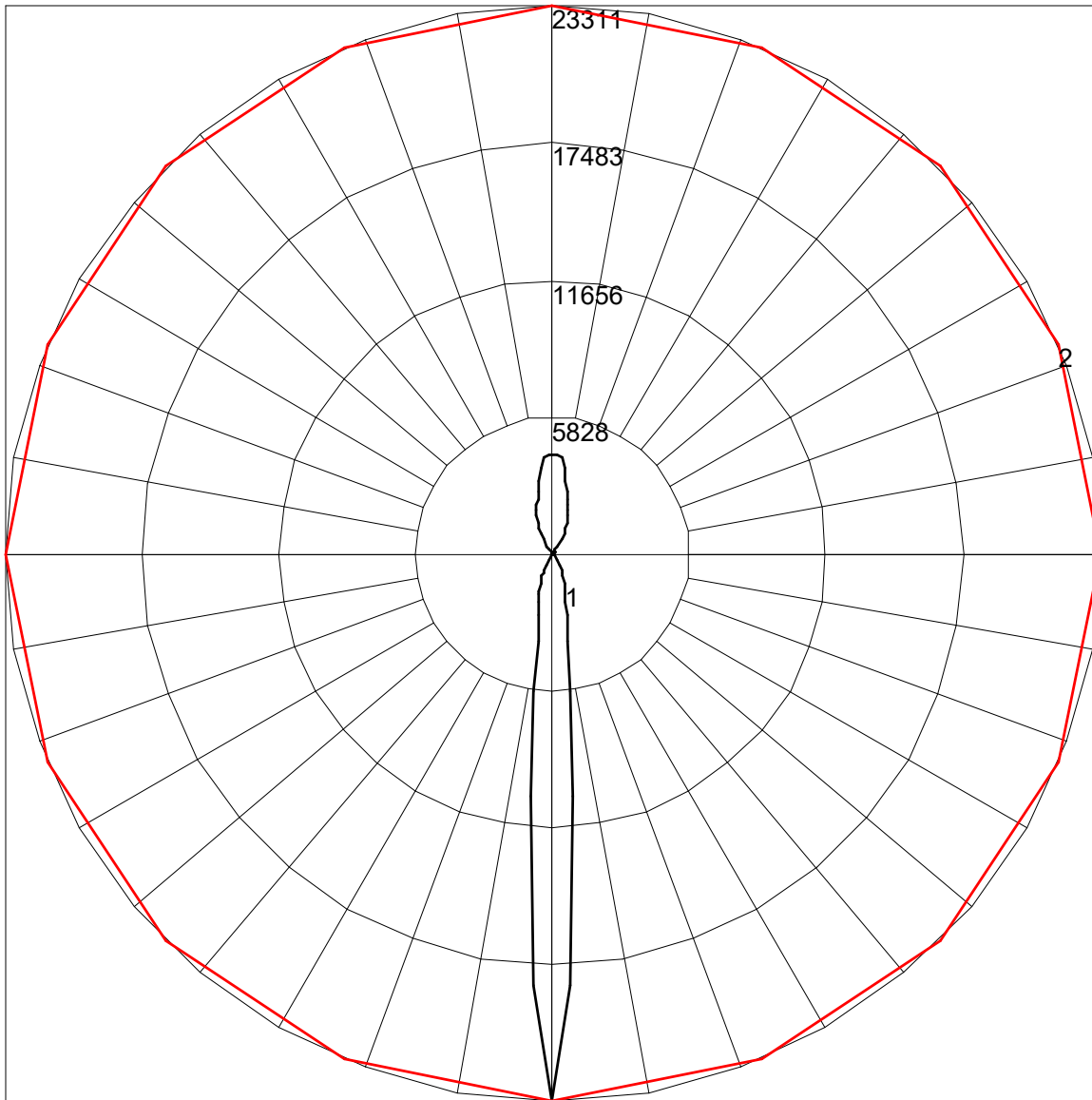
		5.2	5.2	5.2	5.2	5.2
		5.2	5.2	5.2	5.2	5.2
		5.2	5.2	5.2	5.2	5.2
		5.2	5.2	5.2	5.2	5.2
		5.2	5.2	5.2	5.2	5.2
		5.2	5.2	5.2	5.2	5.2
4H	2H	5.2	5.2	5.2	5.2	5.2
	3H	5.2	5.2	5.2	5.2	5.2
	4H	5.2	5.2	5.2	5.2	5.2
	6H	5.2	5.2	5.2	5.2	5.2
	8H	5.2	5.2	5.2	5.2	5.2
	12H	5.2	5.2	5.2	5.2	5.2
8H	4H	5.2	5.2	5.2	5.2	5.2
	6H	5.2	5.2	5.2	5.2	5.2
	8H	5.2	5.2	5.2	5.2	5.2
	12H	5.2	5.2	5.2	5.2	5.2
12H	4H	5.2	5.2	5.2	5.2	5.2
	6H	5.2	5.2	5.2	5.2	5.2
	8H	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-ON-CSD-WM 4000K_.IES

POLAR GRAPH



Maximum Candela = 23311.046 Located At Horizontal Angle = 0, Vertical Angle = 0

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

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