



IES INDOOR REPORT

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

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from UL #12326812.05

[TESTLAB] UL Verification Services Inc.

[ISSUE DATE] 24-FEB-2021

[MANUFAC] WILLIAMS INDOOR

[OTHER] H.E. WILLIAMS INC. - CARTHAGE, MO.

[LUMCAT] 8CRDI-TL-L20-8TWU-L20-8TWD-xxx-DIM1-UNV-ON-CSU-ON-CSD-WM 4000k

[LUMINAIRE] White formed aluminum housing, specular reflector, clear glass cover

[MORE]

[LAMP] Two white LEDs

[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	4180
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	87
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	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
92.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
95.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
97.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
100.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
102.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
105.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
107.5	0.966	0.966	0.966	0.966	0.966	0.966	0.966	0.966	0.966	0.966
110.0	0.966	0.966	0.966	0.966	0.966	0.966	0.966	0.966	0.966	0.966
112.5	0.966	0.966	0.966	0.966	0.966	0.966	0.966	0.966	0.966	0.966
115.0	0.966	0.966	0.966	0.966	0.966	0.966	0.966	0.966	0.966	0.966
117.5	1.931	1.931	1.931	1.931	1.931	1.931	1.931	1.931	1.931	1.931
120.0	1.931	1.931	1.931	1.931	1.931	1.931	1.931	1.931	1.931	1.931
122.5	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897	2.897
125.0	3.863	3.863	3.863	3.863	3.863	3.863	3.863	3.863	3.863	3.863
127.5	4.829	4.829	4.829	4.829	4.829	4.829	4.829	4.829	4.829	4.829
130.0	7.726	7.726	7.726	7.726	7.726	7.726	7.726	7.726	7.726	7.726
132.5	9.657	9.657	9.657	9.657	9.657	9.657	9.657	9.657	9.657	9.657

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CANDELA TABULATION - (Cont.)

135.0	12.555	12.555	12.555	12.555	12.555	12.555	12.555	12.555	12.555	12.555
137.5	16.418	16.418	16.418	16.418	16.418	16.418	16.418	16.418	16.418	16.418
140.0	20.281	20.281	20.281	20.281	20.281	20.281	20.281	20.281	20.281	20.281
142.5	36.698	36.698	36.698	36.698	36.698	36.698	36.698	36.698	36.698	36.698
145.0	233.709	233.709	233.709	233.709	233.709	233.709	233.709	233.709	233.709	233.709
147.5	523.432	523.432	523.432	523.432	523.432	523.432	523.432	523.432	523.432	523.432
150.0	729.134	729.134	729.134	729.134	729.134	729.134	729.134	729.134	729.134	729.134
152.5	794.805	794.805	794.805	794.805	794.805	794.805	794.805	794.805	794.805	794.805
155.0	986.021	986.021	986.021	986.021	986.021	986.021	986.021	986.021	986.021	986.021
157.5	1273.812	1273.812	1273.812	1273.812	1273.812	1273.812	1273.812	1273.812	1273.812	1273.812
160.0	1504.624	1504.624	1504.624	1504.624	1504.624	1504.624	1504.624	1504.624	1504.624	1504.624
162.5	1691.978	1691.978	1691.978	1691.978	1691.978	1691.978	1691.978	1691.978	1691.978	1691.978
165.0	1962.385	1962.385	1962.385	1962.385	1962.385	1962.385	1962.385	1962.385	1962.385	1962.385
167.5	2441.393	2441.393	2441.393	2441.393	2441.393	2441.393	2441.393	2441.393	2441.393	2441.393
170.0	3405.202	3405.202	3405.202	3405.202	3405.202	3405.202	3405.202	3405.202	3405.202	3405.202
172.5	5341.520	5341.520	5341.520	5341.520	5341.520	5341.519	5341.519	5341.519	5341.519	5341.519
175.0	9493.251	9493.251	9493.251	9493.251	9493.251	9493.249	9493.249	9493.249	9493.249	9493.249
177.5	16736.303	16736.303	16736.303	16736.303	16736.302	16736.302	16736.301	16736.301	16736.301	16736.301
180.0	21246.298	21246.298	21246.298	21246.298	21246.298	21246.298	21246.298	21246.298	21246.298	21246.298

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	0.000	0.000	0.000	0.000	0.000	0.000	0.000
92.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
95.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
97.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
100.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
102.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
105.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
107.5	0.966	0.966	0.966	0.966	0.966	0.966	0.966
110.0	0.966	0.966	0.966	0.966	0.966	0.966	0.966
112.5	0.966	0.966	0.966	0.966	0.966	0.966	0.966
115.0	0.966	0.966	0.966	0.966	0.966	0.966	0.966
117.5	1.931	1.931	1.931	1.931	1.931	1.931	1.931
120.0	1.931	1.931	1.931	1.931	1.931	1.931	1.931
122.5	2.897	2.897	2.897	2.897	2.897	2.897	2.897
125.0	3.863	3.863	3.863	3.863	3.863	3.863	3.863
127.5	4.829	4.829	4.829	4.829	4.829	4.829	4.829
130.0	7.726	7.726	7.726	7.726	7.726	7.726	7.726
132.5	9.657	9.657	9.657	9.657	9.657	9.657	9.657
135.0	12.555	12.555	12.555	12.555	12.555	12.555	12.555
137.5	16.418	16.418	16.418	16.418	16.418	16.418	16.418
140.0	20.281	20.281	20.281	20.281	20.281	20.281	20.281
142.5	36.698	36.698	36.698	36.698	36.698	36.698	36.698
145.0	233.709	233.709	233.709	233.709	233.709	233.709	233.709
147.5	523.432	523.432	523.432	523.432	523.432	523.432	523.432
150.0	729.134	729.134	729.134	729.134	729.134	729.134	729.134
152.5	794.805	794.805	794.805	794.805	794.805	794.805	794.805
155.0	986.021	986.021	986.021	986.021	986.021	986.021	986.021
157.5	1273.812	1273.812	1273.812	1273.812	1273.812	1273.812	1273.812
160.0	1504.624	1504.624	1504.624	1504.624	1504.624	1504.624	1504.624
162.5	1691.978	1691.978	1691.978	1691.978	1691.978	1691.978	1691.978
165.0	1962.385	1962.385	1962.385	1962.385	1962.385	1962.385	1962.385
167.5	2441.393	2441.393	2441.393	2441.393	2441.393	2441.393	2441.393
170.0	3405.202	3405.202	3405.202	3405.202	3405.202	3405.202	3405.202
172.5	5341.519	5341.519	5341.520	5341.520	5341.520	5341.520	5341.520
175.0	9493.249	9493.249	9493.251	9493.251	9493.251	9493.251	9493.251
177.5	16736.301	16736.302	16736.302	16736.302	16736.303	16736.303	16736.303
180.0	21246.298	21246.298	21246.298	21246.298	21246.298	21246.298	21246.298

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Zone	Lumens	%Lamp	%Fixt
0-20	1462.83	N.A.	35.00
0-30	1979.83	N.A.	47.40
0-40	2170.22	N.A.	51.90
0-60	2185.25	N.A.	52.30
0-80	2187.1	N.A.	52.30
0-90	2187.1	N.A.	52.30
10-90	1361.52	N.A.	32.60
20-40	707.39	N.A.	16.90
20-50	718.42	N.A.	17.20
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	0.00	N.A.	0.00
90-110	0.38	N.A.	0.00
90-120	1.69	N.A.	0.00
90-130	5.33	N.A.	0.10
90-150	188.91	N.A.	4.50
90-180	1993.38	N.A.	47.70
110-180	1993.00	N.A.	47.70
0-180	4180.48	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	0.00
90-100	0.00
100-110	0.38
110-120	1.31
120-130	3.64
130-140	10.05
140-150	173.53
150-160	471.21
160-170	580.81
170-180	752.45

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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	108	108	108	108	100	100	100	100	85	85	85	71	71	71	58	58	58	52
1	101	98	96	93	94	92	89	87	79	77	76	67	66	65	56	56	55	50
2	96	90	86	83	89	85	81	78	74	71	69	64	62	61	54	53	53	48
3	90	84	78	74	84	79	74	71	69	66	64	61	58	57	52	51	50	47
4	85	78	72	68	80	73	69	65	65	62	59	58	55	53	51	49	48	45
5	81	73	67	63	76	69	64	60	62	58	55	55	53	51	49	47	46	43
6	77	68	62	58	72	65	60	56	59	55	52	53	50	48	47	46	44	42
7	73	64	59	55	69	61	56	53	56	52	49	51	48	46	46	44	43	40
8	70	61	55	51	66	58	53	50	53	50	47	49	46	44	44	43	41	39
9	67	58	52	49	63	56	51	47	51	47	45	47	44	42	43	41	40	38
10	64	55	50	46	61	53	48	45	49	45	43	45	43	41	42	40	39	37

IES INDOOR REPORT

PHOTOMETRIC FILENAME : 8CRDI-TL-L20-8TWU-L20-8TWD-XXX-DALI-UNV-ON-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	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

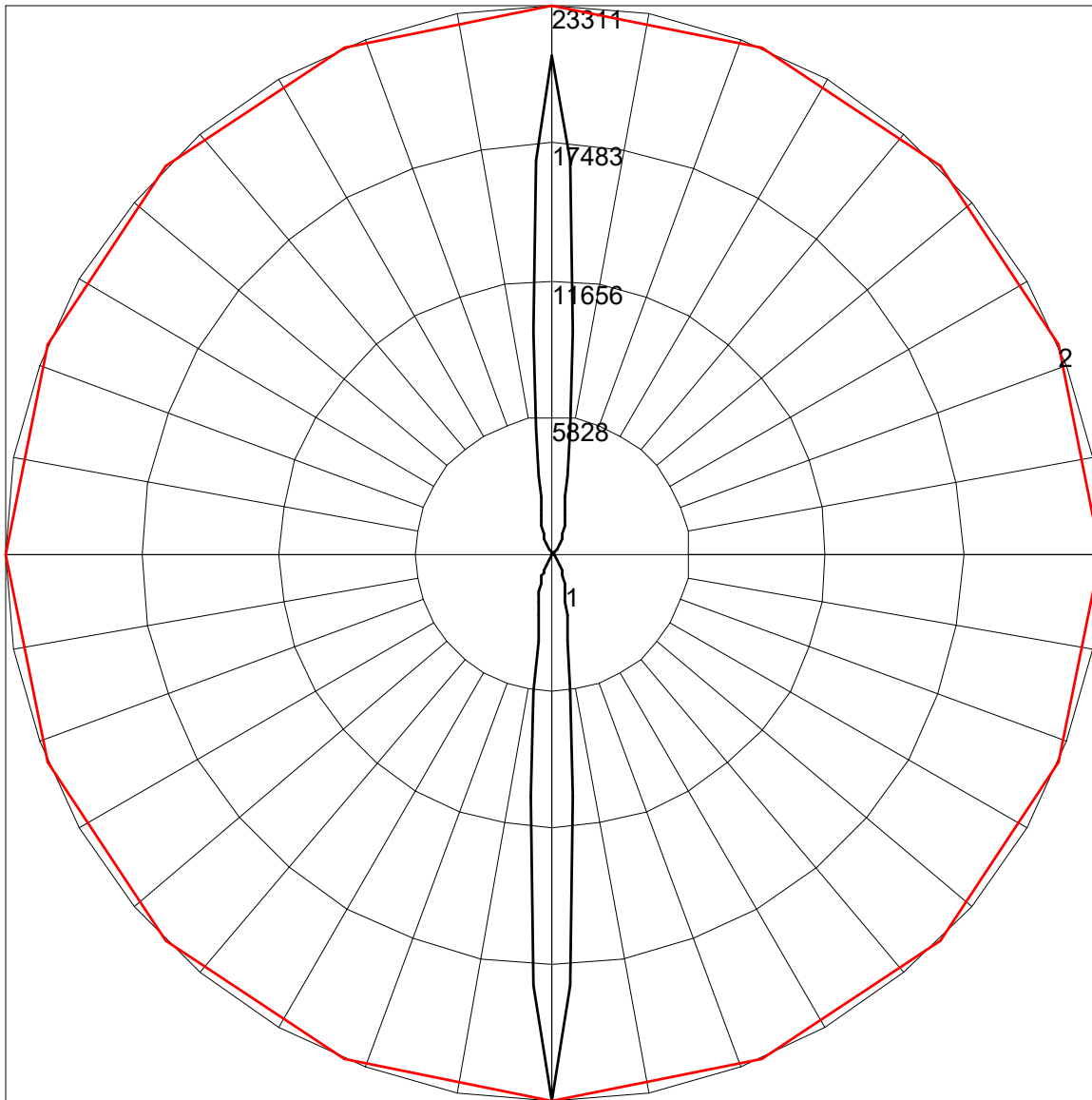
4H	2H	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
	3H	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
	4H	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
	6H	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
	8H	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
	12H	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
8H	4H	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
	6H	5.2	5.2	5.2	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-ON-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.)