



IES INDOOR REPORT

PHOTOMETRIC FILENAME : 8CRDI-TL-L20-8TWU-L20-8TWD-XXX-DALI-UNV-ON-CSU-RW-WHD-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-DALI-UNV-ON-CSU-RW-WHD-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	3896
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	81
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	23546	23546	23546
55	19637	19637	19637
65	13854	13854	13854
75	8486	8486	8486
85	6692	6692	6692

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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	1405.606	1405.606	1405.606	1405.606	1405.606	1405.606	1405.606	1405.606	1405.606	1405.606
2.5	1395.087	1395.087	1395.087	1395.087	1395.087	1395.087	1395.087	1395.087	1395.087	1395.087
5.0	1371.419	1371.419	1371.419	1371.419	1371.419	1371.419	1371.419	1371.419	1371.419	1371.419
7.5	1345.121	1345.121	1345.121	1345.121	1345.121	1345.121	1345.121	1345.121	1345.121	1345.121
10.0	1316.194	1316.194	1316.194	1316.194	1316.194	1316.194	1316.194	1316.194	1316.194	1316.194
12.5	1284.637	1284.637	1284.637	1284.637	1284.637	1284.637	1284.637	1284.637	1284.637	1284.637
15.0	1253.080	1253.080	1253.080	1253.080	1253.080	1253.080	1253.080	1253.080	1253.080	1253.080
17.5	1224.547	1224.547	1224.547	1224.547	1224.547	1224.547	1224.547	1224.547	1224.547	1224.547
20.0	1198.907	1198.907	1198.907	1198.907	1198.907	1198.907	1198.907	1198.907	1198.907	1198.907
22.5	1161.959	1161.959	1161.959	1161.959	1161.959	1161.959	1161.959	1161.959	1161.959	1161.959
25.0	1099.765	1099.765	1099.765	1099.765	1099.765	1099.765	1099.765	1099.765	1099.765	1099.765
27.5	1001.938	1001.938	1001.938	1001.938	1001.938	1001.938	1001.938	1001.938	1001.938	1001.938
30.0	860.983	860.983	860.983	860.983	860.983	860.983	860.983	860.983	860.983	860.983
32.5	682.685	682.685	682.685	682.685	682.685	682.685	682.685	682.685	682.685	682.685
35.0	518.325	518.325	518.325	518.325	518.325	518.325	518.325	518.325	518.325	518.325
37.5	414.976	414.976	414.976	414.976	414.976	414.976	414.976	414.976	414.976	414.976
40.0	361.460	361.460	361.460	361.460	361.460	361.460	361.460	361.460	361.460	361.460
42.5	328.720	328.720	328.720	328.720	328.720	328.720	328.720	328.720	328.720	328.720
45.0	304.000	304.000	304.000	304.000	304.000	304.000	304.000	304.000	304.000	304.000
47.5	281.253	281.253	281.253	281.253	281.253	281.253	281.253	281.253	281.253	281.253
50.0	257.848	257.848	257.848	257.848	257.848	257.848	257.848	257.848	257.848	257.848
52.5	232.208	232.208	232.208	232.208	232.208	232.208	232.208	232.208	232.208	232.208
55.0	205.647	205.647	205.647	205.647	205.647	205.647	205.647	205.647	205.647	205.647
57.5	178.561	178.561	178.561	178.561	178.561	178.561	178.561	178.561	178.561	178.561
60.0	153.052	153.052	153.052	153.052	153.052	153.052	153.052	153.052	153.052	153.052
62.5	129.121	129.121	129.121	129.121	129.121	129.121	129.121	129.121	129.121	129.121
65.0	106.900	106.900	106.900	106.900	106.900	106.900	106.900	106.900	106.900	106.900
67.5	86.519	86.519	86.519	86.519	86.519	86.519	86.519	86.519	86.519	86.519
70.0	68.242	68.242	68.242	68.242	68.242	68.242	68.242	68.242	68.242	68.242
72.5	52.332	52.332	52.332	52.332	52.332	52.332	52.332	52.332	52.332	52.332
75.0	40.104	40.104	40.104	40.104	40.104	40.104	40.104	40.104	40.104	40.104
77.5	31.294	31.294	31.294	31.294	31.294	31.294	31.294	31.294	31.294	31.294
80.0	23.799	23.799	23.799	23.799	23.799	23.799	23.799	23.799	23.799	23.799
82.5	16.831	16.831	16.831	16.831	16.831	16.831	16.831	16.831	16.831	16.831
85.0	10.650	10.650	10.650	10.650	10.650	10.650	10.650	10.650	10.650	10.650
87.5	4.865	4.865	4.865	4.865	4.865	4.865	4.865	4.865	4.865	4.865
90.0	1.315	1.315	1.315	1.315	1.315	1.315	1.315	1.315	1.315	1.315
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	1405.606	1405.606	1405.606	1405.606	1405.606	1405.606	1405.606
2.5	1395.087	1395.087	1395.087	1395.087	1395.087	1395.087	1395.087
5.0	1371.419	1371.419	1371.419	1371.419	1371.419	1371.419	1371.419
7.5	1345.121	1345.121	1345.121	1345.121	1345.121	1345.121	1345.121
10.0	1316.194	1316.194	1316.194	1316.194	1316.194	1316.194	1316.194
12.5	1284.637	1284.637	1284.637	1284.637	1284.637	1284.637	1284.637
15.0	1253.080	1253.080	1253.080	1253.080	1253.080	1253.080	1253.080
17.5	1224.547	1224.547	1224.547	1224.547	1224.547	1224.547	1224.547
20.0	1198.907	1198.907	1198.907	1198.907	1198.907	1198.907	1198.907
22.5	1161.959	1161.959	1161.959	1161.959	1161.959	1161.959	1161.959
25.0	1099.765	1099.765	1099.765	1099.765	1099.765	1099.765	1099.765
27.5	1001.938	1001.938	1001.938	1001.938	1001.938	1001.938	1001.938
30.0	860.983	860.983	860.983	860.983	860.983	860.983	860.983
32.5	682.685	682.685	682.685	682.685	682.685	682.685	682.685
35.0	518.325	518.325	518.325	518.325	518.325	518.325	518.325
37.5	414.976	414.976	414.976	414.976	414.976	414.976	414.976
40.0	361.460	361.460	361.460	361.460	361.460	361.460	361.460
42.5	328.720	328.720	328.720	328.720	328.720	328.720	328.720
45.0	304.000	304.000	304.000	304.000	304.000	304.000	304.000
47.5	281.253	281.253	281.253	281.253	281.253	281.253	281.253
50.0	257.848	257.848	257.848	257.848	257.848	257.848	257.848
52.5	232.208	232.208	232.208	232.208	232.208	232.208	232.208
55.0	205.647	205.647	205.647	205.647	205.647	205.647	205.647
57.5	178.561	178.561	178.561	178.561	178.561	178.561	178.561
60.0	153.052	153.052	153.052	153.052	153.052	153.052	153.052
62.5	129.121	129.121	129.121	129.121	129.121	129.121	129.121
65.0	106.900	106.900	106.900	106.900	106.900	106.900	106.900
67.5	86.519	86.519	86.519	86.519	86.519	86.519	86.519
70.0	68.242	68.242	68.242	68.242	68.242	68.242	68.242
72.5	52.332	52.332	52.332	52.332	52.332	52.332	52.332
75.0	40.104	40.104	40.104	40.104	40.104	40.104	40.104
77.5	31.294	31.294	31.294	31.294	31.294	31.294	31.294
80.0	23.799	23.799	23.799	23.799	23.799	23.799	23.799

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82.5	16.831	16.831	16.831	16.831	16.831	16.831	16.831
85.0	10.650	10.650	10.650	10.650	10.650	10.650	10.650
87.5	4.865	4.865	4.865	4.865	4.865	4.865	4.865
90.0	1.315	1.315	1.315	1.315	1.315	1.315	1.315
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	483.23	N.A.	12.40
0-30	975.60	N.A.	25.00
0-40	1319.08	N.A.	33.90
0-60	1738.36	N.A.	44.60
0-80	1890.04	N.A.	48.50
0-90	1902.26	N.A.	48.80
10-90	1773.06	N.A.	45.50
20-40	835.85	N.A.	21.50
20-50	1071.7	N.A.	27.50
40-70	526.24	N.A.	13.50
60-80	151.69	N.A.	3.90
70-80	44.73	N.A.	1.10
80-90	12.22	N.A.	0.30
90-110	0.56	N.A.	0.00
90-120	1.87	N.A.	0.00
90-130	5.51	N.A.	0.10
90-150	189.09	N.A.	4.90
90-180	1993.56	N.A.	51.20
110-180	1993.00	N.A.	51.20
0-180	3895.82	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	129.20
10-20	354.03
20-30	492.37
30-40	343.48
40-50	235.85
50-60	183.43
60-70	106.96
70-80	44.73
80-90	12.22
90-100	0.18
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	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	107	107	107	107	98	98	98	98	83	83	83	68	68	68	55	55	55	49
1	99	95	92	88	91	88	85	82	74	72	70	62	61	59	51	50	49	44
2	91	84	79	75	84	78	74	70	67	63	61	56	54	52	46	45	43	39
3	84	76	69	64	77	70	65	60	60	56	53	51	48	45	42	40	39	35
4	78	68	61	55	72	63	57	52	55	50	46	46	43	40	39	37	35	31
5	72	61	54	49	66	57	51	46	50	45	41	43	39	36	36	33	31	28
6	67	56	48	43	62	52	46	41	45	40	37	39	35	33	33	31	28	26
7	62	51	44	39	58	48	41	37	42	37	33	36	32	30	31	28	26	23
8	58	47	40	35	54	44	38	33	39	34	30	34	30	27	29	26	24	22
9	54	43	36	32	51	41	34	30	36	31	27	31	27	25	27	24	22	20
10	51	40	33	29	48	38	32	28	33	29	25	29	25	23	25	22	20	19

IES INDOOR REPORT

PHOTOMETRIC FILENAME : 8CRDI-TL-L20-8TWU-L20-8TWD-XXX-DALI-UNV-ON-CSU-RW-WHD-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	15.6	16.3	16.6	17.3	18.6	UGR Viewed Endwise	15.6	16.3	16.6	17.3	18.6
	3H	16.5	17.2	17.5	18.2	19.5		16.5	17.2	17.5	18.2	19.5
	4H	16.8	17.4	17.8	18.4	19.7		16.8	17.4	17.8	18.4	19.7
	6H	16.9	17.5	17.9	18.5	19.8		16.9	17.5	17.9	18.5	19.8
	8H	16.9	17.5	18.0	18.5	19.9		16.9	17.5	18.0	18.5	19.9
	12H	16.9	17.5	18.0	18.5	19.9		16.9	17.5	18.0	18.5	19.9

4H	2H	15.9	16.5	16.9	17.5	18.8	15.9	16.5	16.9	17.5	18.8
	3H	17.0	17.5	18.0	18.5	19.9	17.0	17.5	18.0	18.5	19.9
	4H	17.3	17.7	18.3	18.8	20.1	17.3	17.7	18.3	18.8	20.1
	6H	17.5	17.9	18.6	19.0	20.3	17.5	17.9	18.6	19.0	20.3
	8H	17.6	18.0	18.6	19.0	20.4	17.6	18.0	18.6	19.0	20.4
	12H	17.6	18.0	18.7	19.0	20.4	17.6	18.0	18.7	19.0	20.4

8H	4H	17.3	17.7	18.4	18.7	20.1	17.3	17.7	18.4	18.7	20.1
	6H	17.7	18.0	18.7	19.0	20.4	17.7	18.0	18.7	19.0	20.4
	8H	17.8	18.1	18.9	19.1	20.5	17.8	18.1	18.9	19.1	20.5
	12H	17.9	18.1	19.0	19.2	20.6	17.9	18.1	19.0	19.2	20.6

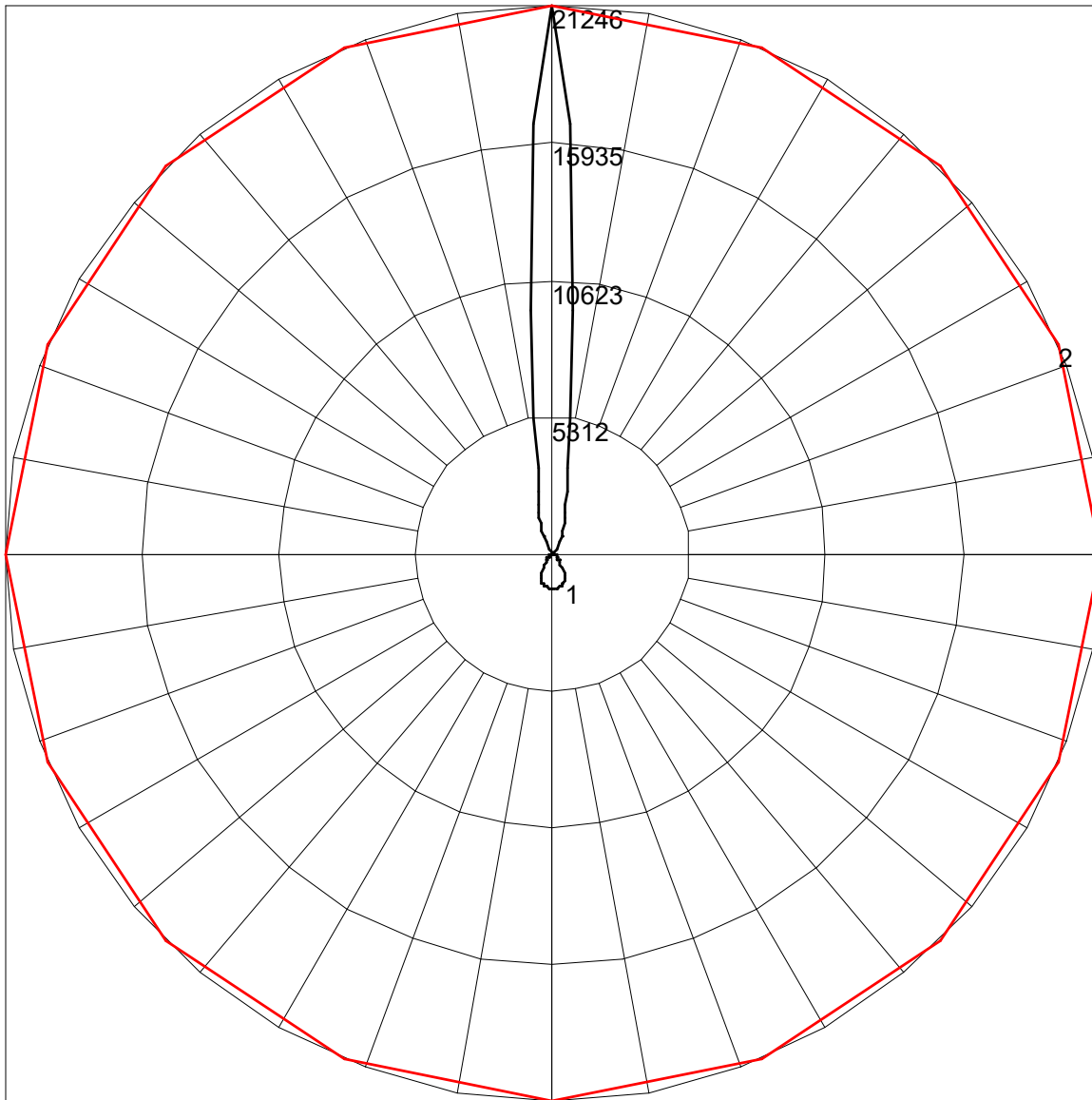
12H	4H	17.3	17.6	18.4	18.7	20.1	17.3	17.6	18.4	18.7	20.1
	6H	17.6	17.9	18.7	19.0	20.4	17.6	17.9	18.7	19.0	20.4
	8H	17.8	18.0	18.9	19.1	20.5	17.8	18.0	18.9	19.1	20.5

Maximum UGR = 20.6

IES INDOOR REPORT

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POLAR GRAPH



Maximum Candela = 21246.298 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.)