



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : 192\_168\_37\_234-16\_39\_20-MERGED.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from UL #13537338.04 & #12326812.05

[TESTLAB] UL Verification Services Inc.

[ISSUE DATE] 19-FEB-2021

[MANUFAC] WILLIAMS INDOOR

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

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

[LUMINAIRE] White formed aluminum housing, wide distribution reflector

[MORE] trims, flush upright frosted lens enclosure, no downlight enclosure

[LAMP] Two white LEDs (one up/one down)

[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	4135
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	86
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 w/ Sides
Luminous Length (0-180)	0.65 ft (Diameter)
Luminous Width (90-270)	0.65 ft (Diameter)
Luminous Height	2.17 ft

### LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	121	121	121
55	34	34	34
65	8	8	8
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>
<b>0.0</b>	23311.046	23311.046	23311.046	23311.046	23311.046	23311.046	23311.046	23311.046	23311.046	23311.046
<b>2.5</b>	18362.747	18362.747	18362.747	18362.747	18362.747	18362.747	18362.747	18362.747	18362.747	18362.747
<b>5.0</b>	10415.799	10415.799	10415.799	10415.799	10415.799	10415.799	10415.799	10415.799	10415.799	10415.799
<b>7.5</b>	5860.609	5860.609	5860.609	5860.609	5860.609	5860.609	5860.609	5860.609	5860.609	5860.609
<b>10.0</b>	3736.125	3736.125	3736.125	3736.125	3736.125	3736.125	3736.125	3736.125	3736.125	3736.125
<b>12.5</b>	2678.651	2678.651	2678.651	2678.651	2678.651	2678.651	2678.651	2678.651	2678.651	2678.651
<b>15.0</b>	2153.093	2153.093	2153.093	2153.093	2153.093	2153.093	2153.093	2153.093	2153.093	2153.093
<b>17.5</b>	1856.407	1856.407	1856.407	1856.407	1856.407	1856.407	1856.407	1856.407	1856.407	1856.407
<b>20.0</b>	1650.846	1650.846	1650.846	1650.846	1650.846	1650.846	1650.846	1650.846	1650.846	1650.846
<b>22.5</b>	1397.603	1397.603	1397.603	1397.603	1397.603	1397.603	1397.603	1397.603	1397.603	1397.603
<b>25.0</b>	1081.844	1081.844	1081.844	1081.844	1081.844	1081.844	1081.844	1081.844	1081.844	1081.844
<b>27.5</b>	872.045	872.045	872.045	872.045	872.045	872.045	872.045	872.045	872.045	872.045
<b>30.0</b>	799.993	799.993	799.993	799.993	799.993	799.993	799.993	799.993	799.993	799.993
<b>32.5</b>	574.299	574.299	574.299	574.299	574.299	574.299	574.299	574.299	574.299	574.299
<b>35.0</b>	256.422	256.422	256.422	256.422	256.422	256.422	256.422	256.422	256.422	256.422
<b>37.5</b>	40.265	40.265	40.265	40.265	40.265	40.265	40.265	40.265	40.265	40.265
<b>40.0</b>	22.251	22.251	22.251	22.251	22.251	22.251	22.251	22.251	22.251	22.251
<b>42.5</b>	18.013	18.013	18.013	18.013	18.013	18.013	18.013	18.013	18.013	18.013
<b>45.0</b>	13.775	13.775	13.775	13.775	13.775	13.775	13.775	13.775	13.775	13.775
<b>47.5</b>	10.596	10.596	10.596	10.596	10.596	10.596	10.596	10.596	10.596	10.596
<b>50.0</b>	8.477	8.477	8.477	8.477	8.477	8.477	8.477	8.477	8.477	8.477
<b>52.5</b>	5.298	5.298	5.298	5.298	5.298	5.298	5.298	5.298	5.298	5.298
<b>55.0</b>	4.238	4.238	4.238	4.238	4.238	4.238	4.238	4.238	4.238	4.238
<b>57.5</b>	3.179	3.179	3.179	3.179	3.179	3.179	3.179	3.179	3.179	3.179
<b>60.0</b>	2.119	2.119	2.119	2.119	2.119	2.119	2.119	2.119	2.119	2.119
<b>62.5</b>	2.119	2.119	2.119	2.119	2.119	2.119	2.119	2.119	2.119	2.119
<b>65.0</b>	1.060	1.060	1.060	1.060	1.060	1.060	1.060	1.060	1.060	1.060
<b>67.5</b>	1.060	1.060	1.060	1.060	1.060	1.060	1.060	1.060	1.060	1.060
<b>70.0</b>	1.060	1.060	1.060	1.060	1.060	1.060	1.060	1.060	1.060	1.060
<b>72.5</b>	1.060	1.060	1.060	1.060	1.060	1.060	1.060	1.060	1.060	1.060
<b>75.0</b>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>77.5</b>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>80.0</b>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>82.5</b>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>85.0</b>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>87.5</b>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>90.0</b>	4.622	4.622	4.622	4.622	4.622	4.622	4.622	4.622	4.622	4.622
<b>92.5</b>	7.118	7.118	7.118	7.118	7.118	7.118	7.118	7.118	7.118	7.118
<b>95.0</b>	12.438	12.438	12.438	12.438	12.438	12.438	12.438	12.438	12.438	12.438
<b>97.5</b>	21.096	21.096	21.096	21.096	21.096	21.096	21.096	21.096	21.096	21.096
<b>100.0</b>	31.405	31.405	31.405	31.405	31.405	31.405	31.405	31.405	31.405	31.405
<b>102.5</b>	42.228	42.228	42.228	42.228	42.228	42.228	42.228	42.228	42.228	42.228
<b>105.0</b>	53.896	53.896	53.896	53.896	53.896	53.896	53.896	53.896	53.896	53.896
<b>107.5</b>	67.067	67.067	67.067	67.067	67.067	67.067	67.067	67.067	67.067	67.067
<b>110.0</b>	82.403	82.403	82.403	82.403	82.403	82.403	82.403	82.403	82.403	82.403
<b>112.5</b>	99.646	99.646	99.646	99.646	99.646	99.646	99.646	99.646	99.646	99.646
<b>115.0</b>	119.165	119.165	119.165	119.165	119.165	119.165	119.165	119.165	119.165	119.165
<b>117.5</b>	141.032	141.032	141.032	141.032	141.032	141.032	141.032	141.032	141.032	141.032
<b>120.0</b>	165.503	165.503	165.503	165.503	165.503	165.503	165.503	165.503	165.503	165.503
<b>122.5</b>	192.726	192.726	192.726	192.726	192.726	192.726	192.726	192.726	192.726	192.726
<b>125.0</b>	222.811	222.811	222.811	222.811	222.811	222.811	222.811	222.811	222.811	222.811
<b>127.5</b>	254.913	254.913	254.913	254.913	254.913	254.913	254.913	254.913	254.913	254.913
<b>130.0</b>	288.300	288.300	288.300	288.300	288.300	288.300	288.300	288.300	288.300	288.300
<b>132.5</b>	321.870	321.870	321.870	321.870	321.870	321.870	321.870	321.870	321.870	321.870

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**CANDELA TABULATION - (Cont.)**

135.0	355.405	355.405	355.405	355.405	355.405	355.405	355.405	355.405	355.405	355.405	355.405
137.5	390.369	390.369	390.369	390.369	390.369	390.369	390.369	390.369	390.369	390.369	390.369
140.0	430.726	430.726	430.726	430.726	430.726	430.726	430.726	430.726	430.726	430.726	430.726
142.5	482.458	482.458	482.458	482.458	482.458	482.458	482.458	482.458	482.458	482.458	482.458
145.0	552.166	552.166	552.166	552.166	552.166	552.166	552.166	552.166	552.166	552.166	552.166
147.5	642.421	642.421	642.421	642.421	642.421	642.421	642.421	642.421	642.421	642.421	642.421
150.0	754.322	754.322	754.322	754.322	754.322	754.322	754.322	754.322	754.322	754.322	754.322
152.5	870.992	870.992	870.992	870.992	870.992	870.992	870.992	870.992	870.992	870.992	870.992
155.0	989.497	989.497	989.497	989.497	989.497	989.497	989.497	989.497	989.497	989.497	989.497
157.5	1095.160	1095.160	1095.160	1095.160	1095.160	1095.160	1095.160	1095.160	1095.160	1095.160	1095.160
160.0	1177.710	1177.710	1177.710	1177.710	1177.710	1177.710	1177.710	1177.710	1177.710	1177.710	1177.710
162.5	1233.110	1233.110	1233.110	1233.110	1233.110	1233.110	1233.110	1233.110	1233.110	1233.110	1233.110
165.0	1264.663	1264.663	1264.663	1264.663	1264.663	1264.663	1264.663	1264.663	1264.663	1264.663	1264.663
167.5	1281.539	1281.539	1281.539	1281.539	1281.539	1281.539	1281.539	1281.539	1281.539	1281.539	1281.539
170.0	1291.078	1291.078	1291.078	1291.078	1291.078	1291.078	1291.078	1291.078	1291.078	1291.078	1291.078
172.5	1298.049	1298.049	1298.049	1298.049	1298.049	1298.049	1298.049	1298.049	1298.049	1298.049	1298.049
175.0	1304.286	1304.286	1304.286	1304.286	1304.286	1304.286	1304.286	1304.286	1304.286	1304.286	1304.286
177.5	1307.222	1307.222	1307.222	1307.222	1307.222	1307.222	1307.222	1307.222	1307.222	1307.222	1307.222
180.0	1306.570	1306.570	1306.570	1306.570	1306.570	1306.570	1306.570	1306.570	1306.570	1306.570	1306.570

**Vert.  
Angles**

**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	256.422	256.422	256.422	256.422	256.422	256.422	256.422
37.5	40.265	40.265	40.265	40.265	40.265	40.265	40.265
40.0	22.251	22.251	22.251	22.251	22.251	22.251	22.251
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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<b>82.5</b>	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>85.0</b>	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>87.5</b>	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>90.0</b>	4.622	4.622	4.622	4.622	4.622	4.622	4.622
<b>92.5</b>	7.118	7.118	7.118	7.118	7.118	7.118	7.118
<b>95.0</b>	12.438	12.438	12.438	12.438	12.438	12.438	12.438
<b>97.5</b>	21.096	21.096	21.096	21.096	21.096	21.096	21.096
<b>100.0</b>	31.405	31.405	31.405	31.405	31.405	31.405	31.405
<b>102.5</b>	42.228	42.228	42.228	42.228	42.228	42.228	42.228
<b>105.0</b>	53.896	53.896	53.896	53.896	53.896	53.896	53.896
<b>107.5</b>	67.067	67.067	67.067	67.067	67.067	67.067	67.067
<b>110.0</b>	82.403	82.403	82.403	82.403	82.403	82.403	82.403
<b>112.5</b>	99.646	99.646	99.646	99.646	99.646	99.646	99.646
<b>115.0</b>	119.165	119.165	119.165	119.165	119.165	119.165	119.165
<b>117.5</b>	141.032	141.032	141.032	141.032	141.032	141.032	141.032
<b>120.0</b>	165.503	165.503	165.503	165.503	165.503	165.503	165.503
<b>122.5</b>	192.726	192.726	192.726	192.726	192.726	192.726	192.726
<b>125.0</b>	222.811	222.811	222.811	222.811	222.811	222.811	222.811
<b>127.5</b>	254.913	254.913	254.913	254.913	254.913	254.913	254.913
<b>130.0</b>	288.300	288.300	288.300	288.300	288.300	288.300	288.300
<b>132.5</b>	321.870	321.870	321.870	321.870	321.870	321.870	321.870
<b>135.0</b>	355.405	355.405	355.405	355.405	355.405	355.405	355.405
<b>137.5</b>	390.369	390.369	390.369	390.369	390.369	390.369	390.369
<b>140.0</b>	430.726	430.726	430.726	430.726	430.726	430.726	430.726
<b>142.5</b>	482.458	482.458	482.458	482.458	482.458	482.458	482.458
<b>145.0</b>	552.166	552.166	552.166	552.166	552.166	552.166	552.166
<b>147.5</b>	642.421	642.421	642.421	642.421	642.421	642.421	642.421
<b>150.0</b>	754.322	754.322	754.322	754.322	754.322	754.322	754.322
<b>152.5</b>	870.992	870.992	870.992	870.992	870.992	870.992	870.992
<b>155.0</b>	989.497	989.497	989.497	989.497	989.497	989.497	989.497
<b>157.5</b>	1095.160	1095.160	1095.160	1095.160	1095.160	1095.160	1095.160
<b>160.0</b>	1177.710	1177.710	1177.710	1177.710	1177.710	1177.710	1177.710
<b>162.5</b>	1233.110	1233.110	1233.110	1233.110	1233.110	1233.110	1233.110
<b>165.0</b>	1264.663	1264.663	1264.663	1264.663	1264.663	1264.663	1264.663
<b>167.5</b>	1281.539	1281.539	1281.539	1281.539	1281.539	1281.539	1281.539
<b>170.0</b>	1291.078	1291.078	1291.078	1291.078	1291.078	1291.078	1291.078
<b>172.5</b>	1298.049	1298.049	1298.049	1298.049	1298.049	1298.049	1298.049
<b>175.0</b>	1304.286	1304.286	1304.286	1304.286	1304.286	1304.286	1304.286
<b>177.5</b>	1307.222	1307.222	1307.222	1307.222	1307.222	1307.222	1307.222
<b>180.0</b>	1306.570	1306.570	1306.570	1306.570	1306.570	1306.570	1306.570

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**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	1462.83	N.A.	35.40
0-30	1979.83	N.A.	47.90
0-40	2170.22	N.A.	52.50
0-60	2185.25	N.A.	52.90
0-80	2187.1	N.A.	52.90
0-90	2187.73	N.A.	52.90
10-90	1362.16	N.A.	32.90
20-40	707.39	N.A.	17.10
20-50	718.42	N.A.	17.40
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	0.63	N.A.	0.00
90-110	73.98	N.A.	1.80
90-120	193.51	N.A.	4.70
90-130	393.72	N.A.	9.50
90-150	1021.04	N.A.	24.70
90-180	1946.78	N.A.	47.10
110-180	1872.8	N.A.	45.30
0-180	4134.51	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	0.63
90-100	15.97
100-110	58.01
110-120	119.53
120-130	200.21
130-140	274.83
140-150	352.49
150-160	447.93
160-170	353.77
170-180	124.04

# IES INDOOR REPORT

PHOTOMETRIC FILENAME : 192\_168\_37\_234-16\_39\_20-MERGED.IES

## 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	102	98	96	93	94	92	89	87	79	78	76	68	67	66	57	56	56	51
2	96	91	86	83	89	85	81	78	74	72	69	64	62	61	55	54	53	49
3	90	84	79	75	84	79	74	71	70	66	64	61	59	57	53	52	51	47
4	86	78	72	68	80	74	69	65	66	62	59	58	56	54	51	50	48	45
5	81	73	67	63	76	69	64	60	62	58	56	56	53	51	49	48	46	44
6	77	68	63	59	73	65	60	56	59	55	52	53	51	49	48	46	45	42
7	73	65	59	55	69	62	57	53	56	52	50	51	48	46	46	44	43	41
8	70	61	56	52	66	59	54	50	54	50	47	49	46	44	45	43	42	40
9	67	58	53	49	64	56	51	48	52	48	45	47	45	43	43	42	40	38
10	64	56	50	47	61	53	49	46	49	46	43	46	43	41	42	40	39	37

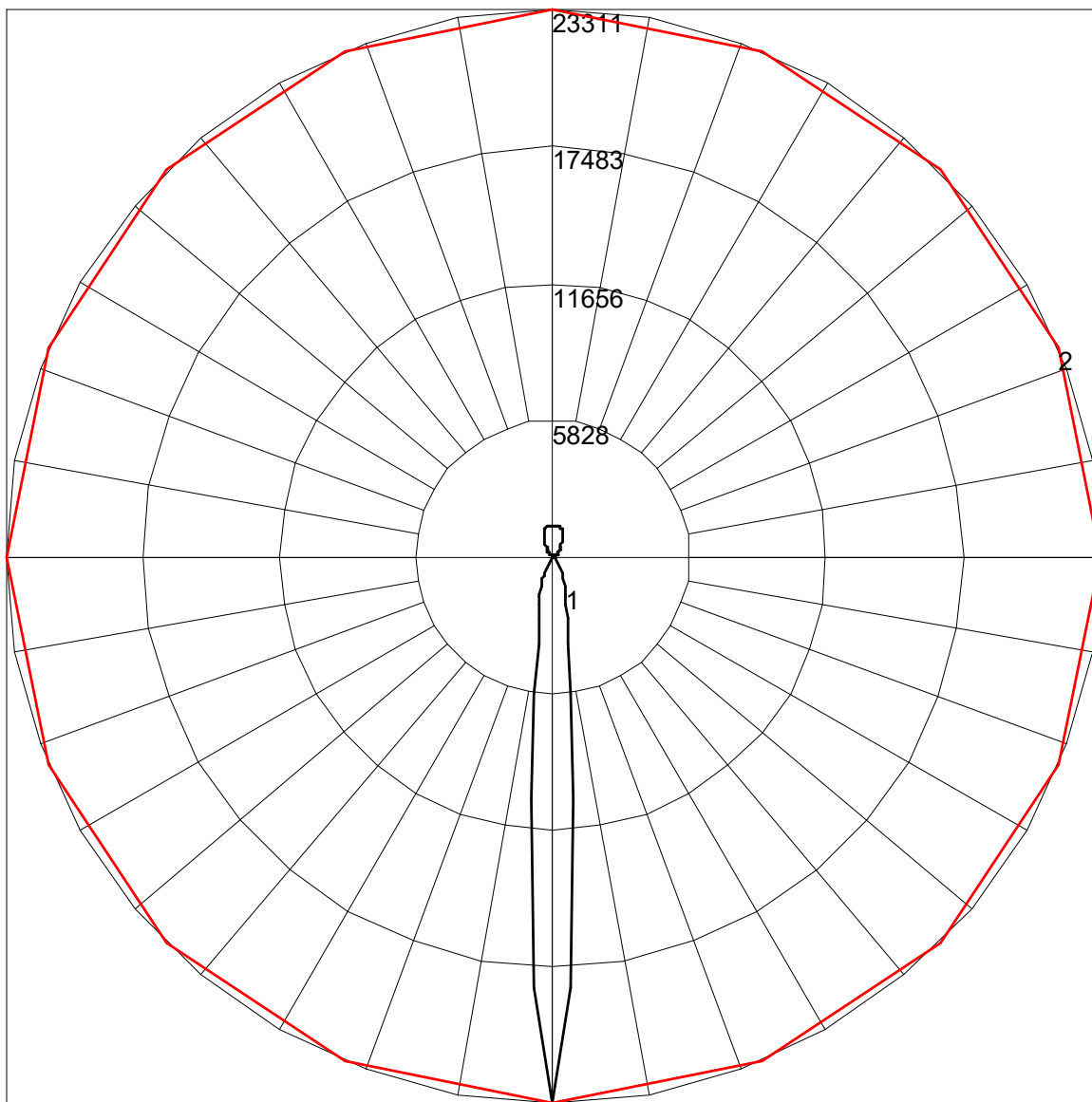
**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : 192\_168\_37\_234-16\_39\_20-MERGED.IES**

**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					UGR Viewed Endwise				
X=2H	Y=2H	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
	3H	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
	4H	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
	6H	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
	8H	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
	12H	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
4H	2H	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
	3H	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
	4H	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
	6H	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
	8H	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
	12H	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
8H	4H	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
	6H	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
	8H	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
	12H	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
12H	4H	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
	6H	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
	8H	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0

Maximum UGR = 5.0

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.)