



IES INDOOR REPORT

PHOTOMETRIC FILENAME : 192_168_37_234-16_33_38-MERGED.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from UL #13537338.04 & #12326812.04

[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-OM-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	4232
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	88
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	467	467	467
55	128	128	128
65	35	35	35
75	9	9	9
85	3	3	3

IES INDOOR REPORT
PHOTOMETRIC FILENAME : 192_168_37_234-16_33_38-MERGED.IES

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	4.737	4.737	4.737	4.737	4.737	4.737	4.737	4.737	4.737	4.737
92.5	7.118	7.118	7.118	7.118	7.118	7.118	7.118	7.118	7.118	7.118
95.0	12.438	12.438	12.438	12.438	12.438	12.438	12.438	12.438	12.438	12.438
97.5	21.096	21.096	21.096	21.096	21.096	21.096	21.096	21.096	21.096	21.096
100.0	31.405	31.405	31.405	31.405	31.405	31.405	31.405	31.405	31.405	31.405
102.5	42.228	42.228	42.228	42.228	42.228	42.228	42.228	42.228	42.228	42.228
105.0	53.896	53.896	53.896	53.896	53.896	53.896	53.896	53.896	53.896	53.896
107.5	67.067	67.067	67.067	67.067	67.067	67.067	67.067	67.067	67.067	67.067
110.0	82.403	82.403	82.403	82.403	82.403	82.403	82.403	82.403	82.403	82.403
112.5	99.646	99.646	99.646	99.646	99.646	99.646	99.646	99.646	99.646	99.646
115.0	119.165	119.165	119.165	119.165	119.165	119.165	119.165	119.165	119.165	119.165
117.5	141.032	141.032	141.032	141.032	141.032	141.032	141.032	141.032	141.032	141.032
120.0	165.503	165.503	165.503	165.503	165.503	165.503	165.503	165.503	165.503	165.503
122.5	192.726	192.726	192.726	192.726	192.726	192.726	192.726	192.726	192.726	192.726
125.0	222.811	222.811	222.811	222.811	222.811	222.811	222.811	222.811	222.811	222.811
127.5	254.913	254.913	254.913	254.913	254.913	254.913	254.913	254.913	254.913	254.913
130.0	288.300	288.300	288.300	288.300	288.300	288.300	288.300	288.300	288.300	288.300
132.5	321.870	321.870	321.870	321.870	321.870	321.870	321.870	321.870	321.870	321.870

IES INDOOR REPORT
PHOTOMETRIC FILENAME : 192_168_37_234-16_33_38-MERGED.IES

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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	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

IES INDOOR REPORT
PHOTOMETRIC FILENAME : 192_168_37_234-16_33_38-MERGED.IES

CANDELA TABULATION - (Cont.)

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	4.737	4.737	4.737	4.737	4.737	4.737	4.737
92.5	7.118	7.118	7.118	7.118	7.118	7.118	7.118
95.0	12.438	12.438	12.438	12.438	12.438	12.438	12.438
97.5	21.096	21.096	21.096	21.096	21.096	21.096	21.096
100.0	31.405	31.405	31.405	31.405	31.405	31.405	31.405
102.5	42.228	42.228	42.228	42.228	42.228	42.228	42.228
105.0	53.896	53.896	53.896	53.896	53.896	53.896	53.896
107.5	67.067	67.067	67.067	67.067	67.067	67.067	67.067
110.0	82.403	82.403	82.403	82.403	82.403	82.403	82.403
112.5	99.646	99.646	99.646	99.646	99.646	99.646	99.646
115.0	119.165	119.165	119.165	119.165	119.165	119.165	119.165
117.5	141.032	141.032	141.032	141.032	141.032	141.032	141.032
120.0	165.503	165.503	165.503	165.503	165.503	165.503	165.503
122.5	192.726	192.726	192.726	192.726	192.726	192.726	192.726
125.0	222.811	222.811	222.811	222.811	222.811	222.811	222.811
127.5	254.913	254.913	254.913	254.913	254.913	254.913	254.913
130.0	288.300	288.300	288.300	288.300	288.300	288.300	288.300
132.5	321.870	321.870	321.870	321.870	321.870	321.870	321.870
135.0	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
140.0	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
145.0	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
150.0	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
155.0	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
160.0	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
165.0	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
170.0	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
175.0	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
180.0	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	1151.52	N.A.	27.20
0-30	1897.17	N.A.	44.80
0-40	2215.16	N.A.	52.30
0-60	2278.15	N.A.	53.80
0-80	2284.45	N.A.	54.00
0-90	2285.47	N.A.	54.00
10-90	1888.61	N.A.	44.60
20-40	1063.65	N.A.	25.10
20-50	1111.3	N.A.	26.30
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	1.02	N.A.	0.00
90-110	74.00	N.A.	1.70
90-120	193.53	N.A.	4.60
90-130	393.73	N.A.	9.30
90-150	1021.05	N.A.	24.10
90-180	1946.8	N.A.	46.00
110-180	1872.8	N.A.	44.30
0-180	4232.27	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	1.02
90-100	15.98
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

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PHOTOMETRIC FILENAME : 192_168_37_234-16_33_38-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	86	86	86	72	72	72	60	60	60	54
1	101	98	95	93	94	92	89	87	79	77	76	68	67	66	57	57	56	51
2	95	90	85	81	89	84	80	77	73	71	68	64	62	60	54	53	52	48
3	89	82	77	72	83	77	73	69	68	65	62	60	57	55	52	50	49	46
4	84	76	70	65	79	72	66	62	64	60	57	56	54	51	49	48	46	43
5	79	70	64	59	74	67	61	57	60	56	52	53	50	48	47	45	43	41
6	75	65	59	55	70	62	57	53	56	52	49	50	47	45	45	43	41	39
7	71	61	55	50	66	58	53	49	53	48	45	48	44	42	43	41	39	37
8	67	57	51	47	63	55	49	45	50	45	42	45	42	40	41	39	37	35
9	63	54	48	44	60	51	46	42	47	43	40	43	40	37	39	37	35	33
10	60	51	45	41	57	49	43	40	45	40	38	41	38	35	37	35	33	32

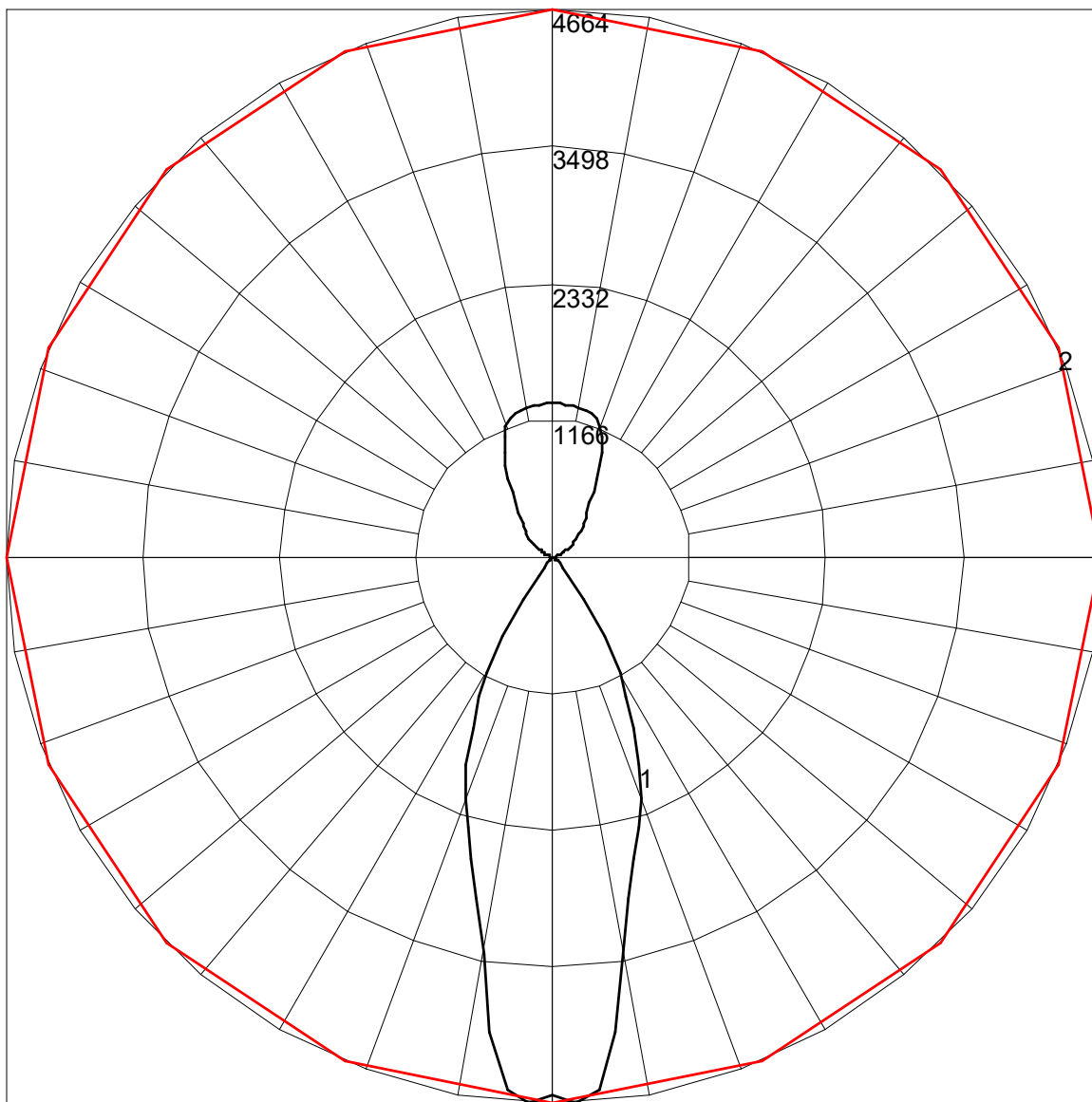
IES INDOOR REPORT
PHOTOMETRIC FILENAME : 192_168_37_234-16_33_38-MERGED.IES

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 = 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.)