



IES INDOOR REPORT

PHOTOMETRIC FILENAME : AT1-22-P16-8TW-D-POE 4000K_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from BALLABS TEST NO. 18872.0

[TESTLAB] BUILDING ACOUSTICS & LIGHTING LABORATORIES, INC

[ISSUEDATE] 26-JUN-2020

[MANUFAC] WILLIAMS LINEAR

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

[LUMINAIRE] 22" LED ARRAYS-SERIES 2x2' RECESSED LUMINAIRE w/WHITE

[MORE] REFL, FROST CONCAVE ACRYLIC LENS w/SHALLOW ACRYLIC CENTER

[MORE] DIFFUSER

[LUMCAT] AT1-22-P16-8TW-D-PoE 4000k

[_SEARCH_SOURCETYPE] LED

[_SEARCH_APPLICATION] Indoor, Architectural, Classroom, Commercial, Educational, Office, Direct

[_SEARCH_MOUNTING] Ceiling, Recessed

[_SEARCH_CERTIFICATION] DLC

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	1605
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	104
Total Luminaire Watts	15.4
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.16
Spacing Criterion (90-270)	1.30
Spacing Criterion (Diagonal)	1.32
Basic Luminous Shape	Rectangular
Luminous Length (0-180)	1.76 ft
Luminous Width (90-270)	1.77 ft
Luminous Height	0.00 ft

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	1601	1808	2010
55	1411	1699	1865
65	1218	1578	1798
75	1028	1512	1681
85	676	828	741

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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>
0	606.199	606.199	606.199	606.199	606.199
5	606.748	604.552	604.003	603.454	603.454
10	594.119	593.570	593.021	595.766	598.512
15	572.155	573.803	578.744	583.137	588.628
20	541.955	546.897	556.781	566.664	576.548
25	504.617	512.304	527.130	543.602	556.781
30	466.180	475.515	493.635	518.344	532.071
35	424.449	431.038	456.297	487.595	499.675
40	376.678	385.464	413.467	449.707	459.042
45	327.260	338.241	369.540	403.584	410.722
50	278.939	291.019	325.612	353.616	360.205
55	233.914	246.543	281.685	304.198	309.140
60	188.888	205.361	237.208	256.976	264.114
65	148.804	165.277	192.732	209.205	219.637
70	112.564	124.644	154.295	164.728	174.063
75	76.873	88.404	113.113	116.408	125.742
80	43.927	53.262	68.088	54.360	54.909
85	17.022	18.669	20.866	17.571	18.669
90	0.000	0.000	0.000	0.000	0.000

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	220.64	N.A.	13.70
0-30	464.25	N.A.	28.90
0-40	751.15	N.A.	46.80
0-60	1284.18	N.A.	80.00
0-80	1579.71	N.A.	98.40
0-90	1605.22	N.A.	100.00
10-90	1547.86	N.A.	96.40
20-40	530.51	N.A.	33.00
20-50	816.11	N.A.	50.80
40-70	719.71	N.A.	44.80
60-80	295.53	N.A.	18.40
70-80	108.86	N.A.	6.80
80-90	25.52	N.A.	1.60
90-110	0.00	N.A.	0.00
90-120	0.00	N.A.	0.00
90-130	0.00	N.A.	0.00
90-150	0.00	N.A.	0.00
90-180	0.00	N.A.	0.00
110-180	0.00	N.A.	0.00
0-180	1605.22	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	57.36
10-20	163.28
20-30	243.61
30-40	286.90
40-50	285.61
50-60	247.43
60-70	186.67
70-80	108.86
80-90	25.52
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

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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	116	116	116	116	113	113	113	113	108	108	108	104	104	104	99	99	99	97
1	106	102	97	94	103	99	96	92	95	92	89	91	89	87	88	86	84	82
2	97	89	82	77	94	87	81	76	83	78	74	80	76	72	77	74	71	69
3	88	78	70	64	86	77	69	63	74	67	62	71	66	61	68	64	60	58
4	81	69	61	54	79	68	60	54	66	59	53	63	57	53	61	56	52	50
5	74	62	53	47	72	61	53	47	59	52	46	57	51	46	55	50	45	43
6	69	56	47	41	67	55	47	41	53	46	41	52	45	40	50	44	40	38
7	64	51	42	36	62	50	42	36	49	41	36	47	41	36	46	40	35	34
8	59	46	38	33	58	46	38	32	44	37	32	43	37	32	42	36	32	30
9	56	43	35	29	54	42	34	29	41	34	29	40	34	29	39	33	29	27
10	52	39	32	27	51	39	32	27	38	31	26	37	31	26	36	30	26	25

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UGR TABLE - CORRECTED

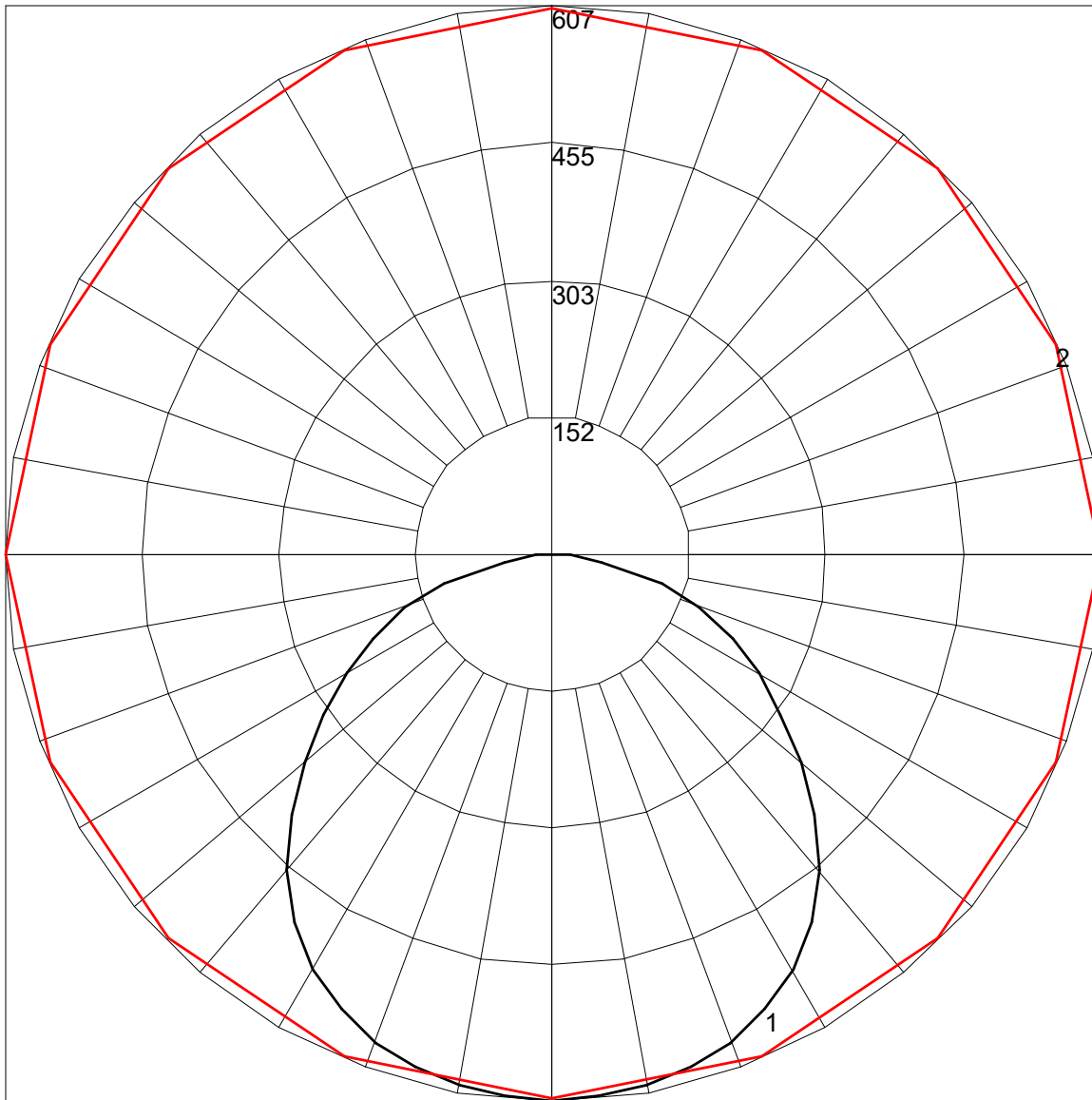
Reflectances

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	12.9	14.5	13.3	14.8	15.2	14.5	16.1	14.9	16.5	16.8
	3H	14.5	16.0	14.9	16.3	16.7	16.5	17.9	16.9	18.3	18.6
	4H	15.1	16.5	15.5	16.9	17.2	17.2	18.6	17.6	19.0	19.3
	6H	15.5	16.8	16.0	17.2	17.6	17.6	18.9	18.0	19.3	19.7
	8H	15.7	16.9	16.1	17.3	17.7	17.7	18.9	18.1	19.3	19.7
	12H	15.7	16.9	16.1	17.3	17.7	17.7	18.9	18.2	19.3	19.7
4H	2H	13.8	15.2	14.2	15.5	15.9	15.1	16.4	15.5	16.8	17.2
	3H	15.7	16.8	16.1	17.2	17.6	17.2	18.4	17.7	18.8	19.2
	4H	16.4	17.4	16.8	17.8	18.3	18.1	19.2	18.6	19.6	20.0
	6H	16.9	17.8	17.3	18.2	18.7	18.6	19.5	19.1	20.0	20.4
	8H	17.0	17.9	17.5	18.3	18.8	18.7	19.6	19.2	20.0	20.5
	12H	17.1	17.9	17.6	18.4	18.8	18.8	19.6	19.3	20.0	20.5
8H	4H	16.9	17.7	17.3	18.2	18.6	18.4	19.2	18.9	19.7	20.2
	6H	17.5	18.2	18.0	18.7	19.2	19.0	19.7	19.5	20.2	20.7
	8H	17.7	18.4	18.2	18.9	19.4	19.1	19.8	19.7	20.3	20.8
	12H	17.9	18.4	18.4	18.9	19.5	19.3	19.8	19.8	20.3	20.9
12H	4H	16.9	17.7	17.4	18.2	18.6	18.4	19.2	18.9	19.7	20.1
	6H	17.6	18.3	18.1	18.7	19.3	19.0	19.7	19.6	20.1	20.7
	8H	17.9	18.5	18.4	18.9	19.5	19.2	19.8	19.7	20.3	20.8

Maximum UGR = 20.9

POLAR GRAPH



Maximum Candela = 606.748 Located At Horizontal Angle = 0, Vertical Angle = 5
1 - Vertical Plane Through Horizontal Angles (90 - 270)
2 - Horizontal Cone Through Vertical Angle (5) (Through Max. Cd.)