



IES INDOOR REPORT

PHOTOMETRIC FILENAME : HETS-22-L38-840-A-DIM-UNV_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN FROM BALLABS TEST NO. 20211.0

[TESTLAB] BUILDING ACOUSTICS & LIGHTING LABORATORIES, INC

[ISSUEDATE] 03 APRIL 2020

[MANUFAC] WILLIAMS INDOOR

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

[LUMINAIRE] 2-56 LED 22"ARRAYS DUAL APERATURE 2x2'RECESSED LUMINAIRE

[MORE] WHITE REFLECTOR w/FROSTED ACRYLIC RIBBED LENSES

[LUMCAT] HES-22-L38-840-A-DIM-UNV

[LAMPCAT] HLM 80 CRI 4000K CCT

[_SEARCH_SOURCETYPE] LED

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

[_SEARCH_MOUNTING] Recessed

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	3991
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	121
Total Luminaire Watts	33
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.20
Spacing Criterion (90-270)	1.26
Spacing Criterion (Diagonal)	1.34
Basic Luminous Shape	Rectangular
Luminous Length (0-180)	1.91 ft
Luminous Width (90-270)	1.91 ft
Luminous Height	0.00 ft

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	3781	4170	4411
55	3142	3669	4036
65	2471	3013	2860
75	1793	1960	1251
85	867	526	217

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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	1615.904	1615.904	1615.904	1615.904	1615.904
5	1609.524	1612.258	1611.347	1605.879	1607.701
10	1584.005	1588.562	1584.916	1582.182	1588.562
15	1539.347	1549.372	1546.638	1548.461	1555.752
20	1468.258	1490.131	1489.220	1501.068	1504.714
25	1385.321	1407.194	1425.422	1438.182	1440.916
30	1285.067	1306.941	1339.751	1354.333	1368.004
35	1171.143	1196.662	1236.763	1257.726	1278.688
40	1045.370	1073.624	1123.750	1148.358	1173.877
45	903.193	929.623	996.155	1026.231	1053.573
50	753.724	781.066	856.712	895.902	922.332
55	608.812	637.065	710.888	759.192	781.977
60	474.837	500.356	574.179	594.230	606.989
65	352.710	370.938	430.179	418.330	408.305
70	247.900	270.684	294.381	257.925	228.760
75	156.760	177.722	171.342	133.975	109.367
80	81.114	88.405	72.000	56.507	41.013
85	25.519	25.519	15.494	13.671	6.380
90	0.000	0.000	0.000	0.000	0.000

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	589.25	N.A.	14.80
0-30	1243.11	N.A.	31.10
0-40	2011.11	N.A.	50.40
0-60	3393.42	N.A.	85.00
0-80	3962.84	N.A.	99.30
0-90	3991.35	N.A.	100.00
10-90	3838.5	N.A.	96.20
20-40	1421.87	N.A.	35.60
20-50	2178.91	N.A.	54.60
40-70	1782.3	N.A.	44.70
60-80	569.42	N.A.	14.30
70-80	169.42	N.A.	4.20
80-90	28.52	N.A.	0.70
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	3991.35	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	152.85
10-20	436.39
20-30	653.87
30-40	768.00
40-50	757.05
50-60	625.26
60-70	400.00
70-80	169.42
80-90	28.52
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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	110	106	102	98	107	103	100	97	99	96	94	95	93	91	92	90	88	86
2	101	93	87	82	98	91	86	81	88	83	79	85	81	77	82	78	75	73
3	92	82	75	69	90	81	74	68	78	72	67	75	70	66	73	68	65	63
4	85	73	65	59	83	72	64	58	70	63	58	67	62	57	65	60	56	54
5	78	66	57	51	76	65	57	51	63	56	50	61	55	50	59	54	49	47
6	72	60	51	45	70	59	51	45	57	50	44	55	49	44	54	48	43	42
7	67	54	46	40	65	53	45	40	52	45	39	50	44	39	49	43	39	37
8	63	50	41	36	61	49	41	36	48	40	35	46	40	35	45	39	35	33
9	59	46	38	32	57	45	37	32	44	37	32	43	36	32	42	36	32	30
10	55	42	34	29	54	42	34	29	41	34	29	40	33	29	39	33	29	27

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UGR TABLE - CORRECTED

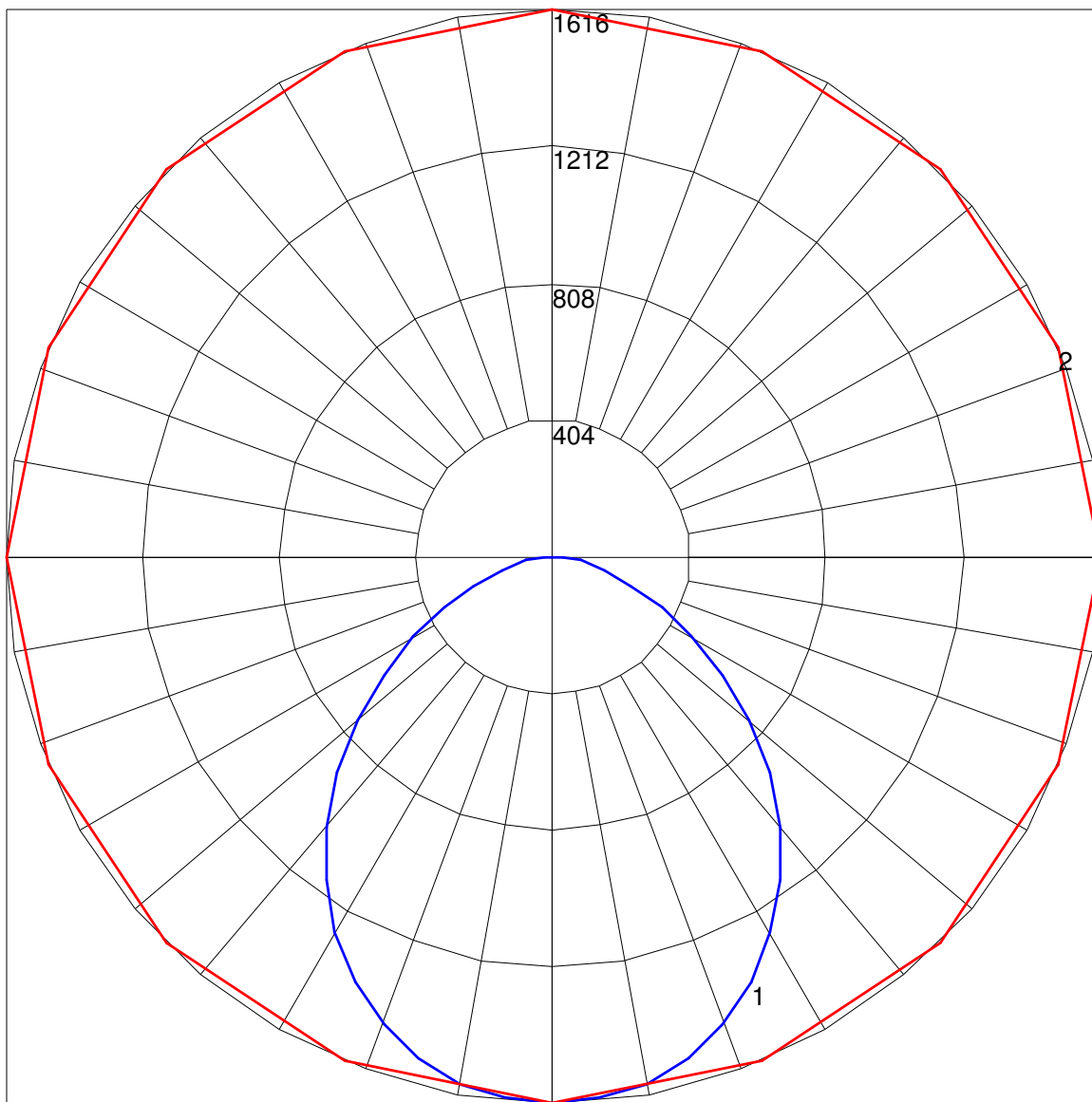
Reflectances

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	15.6	17.2	16.0	17.5	17.8	16.9	18.5	17.3	18.8	19.1
	3H	16.9	18.3	17.3	18.7	19.0	17.9	19.3	18.3	19.6	20.0
	4H	17.4	18.7	17.8	19.0	19.4	18.0	19.4	18.4	19.7	20.1
	6H	17.6	18.8	18.0	19.2	19.6	18.1	19.3	18.5	19.7	20.1
	8H	17.7	18.8	18.1	19.2	19.6	18.1	19.2	18.5	19.6	20.0
	12H	17.7	18.8	18.1	19.2	19.6	18.0	19.2	18.5	19.5	20.0
4H	2H	16.3	17.6	16.7	18.0	18.4	17.4	18.7	17.8	19.0	19.4
	3H	17.8	18.9	18.2	19.3	19.7	18.5	19.6	18.9	20.0	20.4
	4H	18.4	19.3	18.8	19.7	20.2	18.7	19.7	19.2	20.1	20.6
	6H	18.7	19.5	19.2	20.0	20.4	18.8	19.7	19.3	20.1	20.6
	8H	18.8	19.6	19.2	20.0	20.5	18.8	19.6	19.3	20.1	20.5
	12H	18.8	19.5	19.3	20.0	20.5	18.8	19.5	19.3	20.0	20.5
8H	4H	18.5	19.3	19.0	19.8	20.2	18.9	19.7	19.3	20.1	20.6
	6H	18.9	19.6	19.4	20.1	20.6	19.0	19.7	19.5	20.2	20.6
	8H	19.1	19.6	19.6	20.2	20.6	19.0	19.6	19.5	20.1	20.6
	12H	19.1	19.6	19.6	20.1	20.7	19.0	19.5	19.5	20.0	20.6
12H	4H	18.5	19.2	19.0	19.7	20.2	18.9	19.6	19.4	20.1	20.5
	6H	18.9	19.5	19.5	20.0	20.5	19.0	19.6	19.6	20.1	20.6
	8H	19.1	19.6	19.6	20.1	20.6	19.0	19.6	19.5	20.0	20.6

Maximum UGR = 20.7

POLAR GRAPH



Maximum Candela = 1615.904 Located At Horizontal Angle = 0, Vertical Angle = 0
1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (0) (Through Max. Cd.)