



IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4DS-L20-830-DIM-UNV-RW-OF-BL_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN FROM BALLABS TEST NO. 20321.0

[TESTLAB] BUILDING ACOUSTICS & LIGHTING LABORATORIES, INC

[ISSUEDATE] 12-22-2022

[MANUFAC] WILLIAMS INDOOR

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

[LUMINAIRE] 4"SHORT HEATSINK 4"SQ CAST HOUSING DOWNLIGHT

[MORE] WHITE MIXING CHAMBER & 4"CAST REGRESS TRIM

[LUMCAT] 4DS-L20-830-DIM-UNV-RW-OF-BL

[LAMPCAT] BXRE-35E2000

[_SEARCH_SOURCETYPE] LED

[_SEARCH_APPLICATION] Indoor, Classroom, Office, Downlight

[_SEARCH_MOUNTING] Recessed

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	1526
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	61
Total Luminaire Watts	25
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.02
Spacing Criterion (90-270)	1.02
Spacing Criterion (Diagonal)	1.06
Basic Luminous Shape	Rectangular
Luminous Length (0-180)	0.33 ft
Luminous Width (90-270)	0.33 ft
Luminous Height	0.00 ft

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	28549	31839	28443
55	21981	21196	21588
65	14206	13318	13851
75	6379	6959	6669
85	3444	2584	3444

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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	1164.620	1164.620	1164.620	1164.620	1164.620
5	1157.655	1157.655	1156.881	1158.429	1161.524
10	1135.988	1134.440	1139.857	1146.822	1151.465
15	1104.261	1103.487	1108.904	1118.190	1123.607
20	1062.474	1060.926	1067.890	1067.890	1061.700
25	930.922	958.780	1000.567	967.292	927.827
30	610.555	694.903	873.658	756.809	610.555
35	347.451	390.012	641.508	441.085	348.225
40	249.948	269.294	366.797	286.318	256.913
45	208.161	214.352	232.150	222.090	207.387
50	170.243	173.339	172.565	170.243	164.827
55	130.004	133.099	125.361	127.683	127.683
60	94.408	94.408	88.991	91.312	92.860
65	61.907	62.681	58.038	60.359	60.359
70	30.953	34.049	34.049	33.275	31.727
75	17.024	17.024	18.572	17.024	17.798
80	10.834	10.834	7.738	9.286	9.286
85	3.095	2.322	2.322	2.322	3.095
90	0.000	0.000	0.000	0.000	0.000

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	422.95	N.A.	27.70
0-30	850.60	N.A.	55.70
0-40	1150.68	N.A.	75.40
0-60	1440.69	N.A.	94.40
0-80	1522.00	N.A.	99.70
0-90	1525.95	N.A.	100.00
10-90	1415.92	N.A.	92.80
20-40	727.73	N.A.	47.70
20-50	901.54	N.A.	59.10
40-70	350.85	N.A.	23.00
60-80	81.31	N.A.	5.30
70-80	20.47	N.A.	1.30
80-90	3.95	N.A.	0.30
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	1525.95	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	110.02
10-20	312.93
20-30	427.65
30-40	300.08
40-50	173.80
50-60	116.20
60-70	60.84
70-80	20.47
80-90	3.95
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	112	109	106	103	110	107	104	101	102	100	98	99	97	95	95	94	93	91
2	105	99	94	90	103	97	93	89	94	90	87	91	88	85	88	86	83	82
3	98	91	85	80	96	89	84	79	86	82	78	84	80	77	82	78	75	74
4	92	83	77	72	90	82	76	71	80	74	70	78	73	69	76	72	69	67
5	87	77	70	65	85	76	69	64	74	68	64	72	67	63	70	66	63	61
6	81	71	64	59	80	70	64	59	69	63	58	67	62	58	66	61	57	56
7	77	66	59	54	75	65	59	54	64	58	54	63	57	53	61	57	53	51
8	72	61	55	50	71	61	54	50	60	54	49	59	53	49	58	53	49	47
9	69	57	51	46	67	57	50	46	56	50	46	55	50	46	54	49	46	44
10	65	54	47	43	64	53	47	43	53	47	43	52	46	43	51	46	42	41

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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

X=2H	Y=2H	20.4	21.6	20.7	21.9	22.2	20.1	21.4	20.5	21.7	22.0
	3H	21.0	22.1	21.4	22.4	22.8	20.8	21.9	21.2	22.2	22.6
	4H	21.1	22.1	21.5	22.5	22.9	20.9	21.9	21.3	22.3	22.7
	6H	21.2	22.1	21.6	22.5	22.9	21.0	21.9	21.4	22.3	22.7
	8H	21.2	22.1	21.6	22.4	22.9	21.0	21.8	21.4	22.2	22.6
	12H	21.1	22.0	21.6	22.4	22.8	20.9	21.8	21.4	22.2	22.6

UGR Viewed Endwise

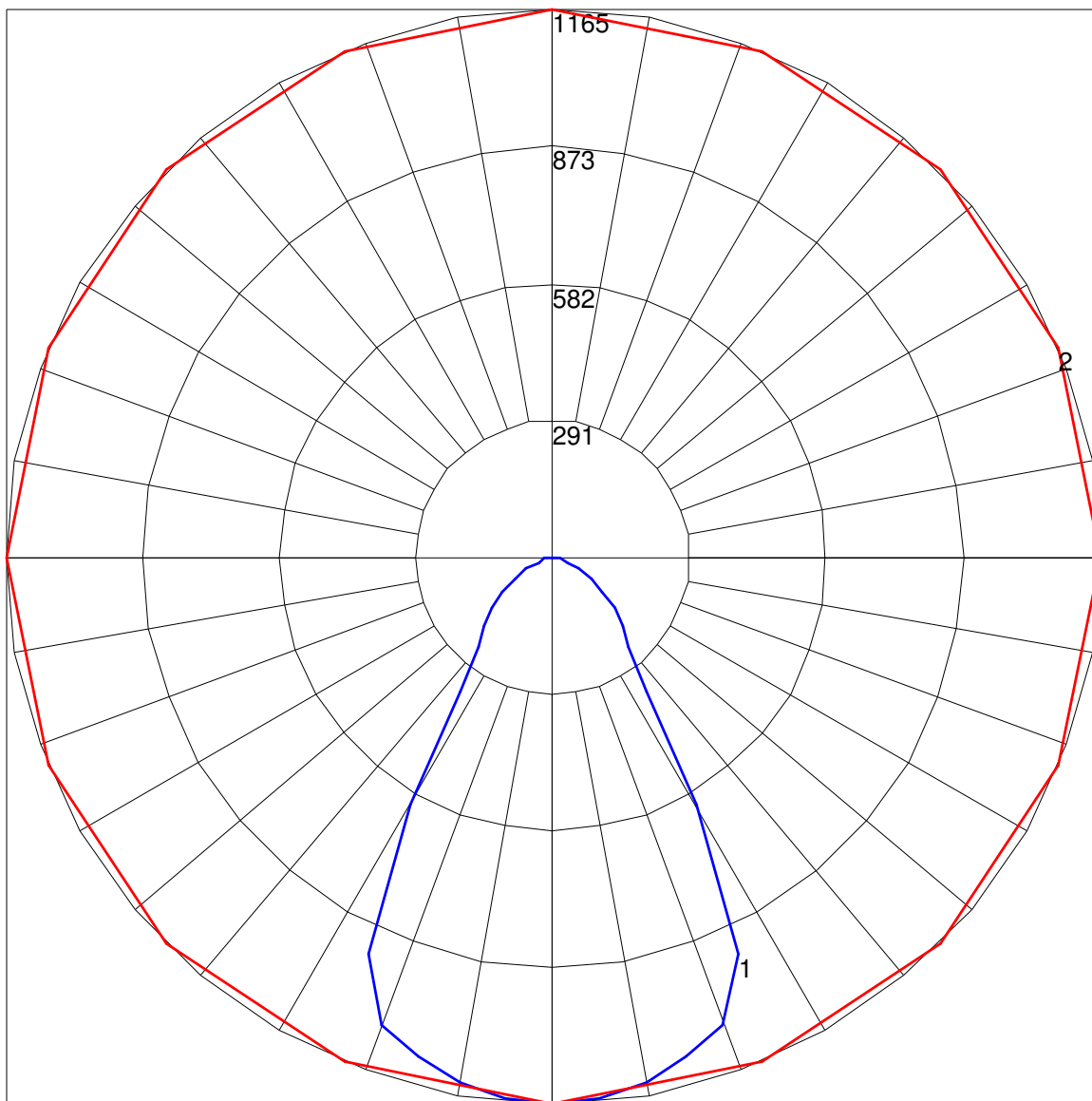
4H	2H	20.6	21.6	21.0	21.9	22.3	20.4	21.4	20.8	21.7	22.1
	3H	21.3	22.2	21.7	22.6	23.0	21.2	22.0	21.6	22.4	22.8
	4H	21.5	22.2	21.9	22.6	23.1	21.3	22.0	21.7	22.5	22.9
	6H	21.6	22.2	22.1	22.7	23.1	21.4	22.0	21.9	22.5	23.0
	8H	21.6	22.2	22.1	22.6	23.1	21.4	22.0	21.9	22.4	22.9
	12H	21.6	22.1	22.1	22.6	23.1	21.4	21.9	21.9	22.4	22.9

8H	4H	21.4	22.0	21.9	22.5	23.0	21.3	21.9	21.8	22.3	22.8
	6H	21.6	22.1	22.1	22.6	23.1	21.4	21.9	21.9	22.4	22.9
	8H	21.6	22.1	22.2	22.6	23.1	21.4	21.9	22.0	22.4	22.9
	12H	21.7	22.0	22.2	22.5	23.1	21.5	21.8	22.0	22.3	22.9

12H	4H	21.4	21.9	21.9	22.4	22.9	21.3	21.8	21.7	22.3	22.7
	6H	21.6	22.0	22.1	22.5	23.0	21.4	21.8	21.9	22.3	22.8
	8H	21.6	22.0	22.2	22.5	23.1	21.4	21.8	22.0	22.3	22.9

Maximum UGR = 23.1

POLAR GRAPH



Maximum Candela = 1164.62 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.)