



IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4DS-L21-9DW-DIM-UNV-RW-OF-WH_3000K_.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] 20-DEC-2023
 [MANUFAC] WILLIAMS INDOOR
 [OTHER] H.E. WILLIAMS, INC - CARTHAGE, MO
 [LUMINAIRE] 4"SQ CAST HOUSING LED DOWNLIGHT
 [MORE] WHITE MIXING CHAMBER & 4"CAST WHITE REGRESS w/SOLITE LENS
 [MORE] 0-10V DIMMING DRIVER
 [LUMCAT] 4DS-L21-9DW-DIM-UNV-RW-OF-WH 3000K
 [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	1878
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	50
Total Luminaire Watts	37.7
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	35134	39183	35004
55	27051	26085	26568
65	17483	16390	17046
75	7850	8564	8207
85	4238	3179	4238

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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	1433.261	1433.261	1433.261	1433.261	1433.261
5	1424.690	1424.690	1423.737	1425.642	1429.451
10	1398.024	1396.120	1402.786	1411.357	1417.071
15	1358.979	1358.026	1364.693	1376.121	1382.787
20	1307.553	1305.648	1314.219	1314.219	1306.600
25	1145.656	1179.940	1231.366	1190.416	1141.847
30	751.390	855.195	1075.184	931.381	751.390
35	427.597	479.976	789.484	542.830	428.550
40	307.603	331.412	451.406	352.363	316.174
45	256.177	263.796	285.700	273.319	255.225
50	209.513	213.323	212.370	209.513	202.847
55	159.992	163.801	154.278	157.135	157.135
60	116.185	116.185	109.518	112.375	114.280
65	76.187	77.139	71.425	74.282	74.282
70	38.093	41.903	41.903	40.950	39.046
75	20.951	20.951	22.856	20.951	21.904
80	13.333	13.333	9.523	11.428	11.428
85	3.809	2.857	2.857	2.857	3.809
90	0.000	0.000	0.000	0.000	0.000

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	520.51	N.A.	27.70
0-30	1046.81	N.A.	55.70
0-40	1416.11	N.A.	75.40
0-60	1773.01	N.A.	94.40
0-80	1873.07	N.A.	99.70
0-90	1877.93	N.A.	100.00
10-90	1742.53	N.A.	92.80
20-40	895.60	N.A.	47.70
20-50	1109.49	N.A.	59.10
40-70	431.77	N.A.	23.00
60-80	100.07	N.A.	5.30
70-80	25.19	N.A.	1.30
80-90	4.86	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	1877.93	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	135.40
10-20	385.11
20-30	526.30
30-40	369.30
40-50	213.89
50-60	143.01
60-70	74.87
70-80	25.19
80-90	4.86
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	21.1	22.3	21.4	22.6	22.9	20.8	22.1	21.2	22.4	22.7
	3H	21.7	22.8	22.1	23.1	23.5	21.5	22.6	21.9	22.9	23.3
	4H	21.8	22.8	22.2	23.2	23.6	21.6	22.6	22.0	23.0	23.4
	6H	21.9	22.8	22.3	23.2	23.6	21.7	22.6	22.1	23.0	23.4
	8H	21.9	22.8	22.3	23.1	23.5	21.7	22.5	22.1	22.9	23.3
	12H	21.8	22.7	22.3	23.1	23.5	21.6	22.5	22.1	22.9	23.3

UGR Viewed Endwise

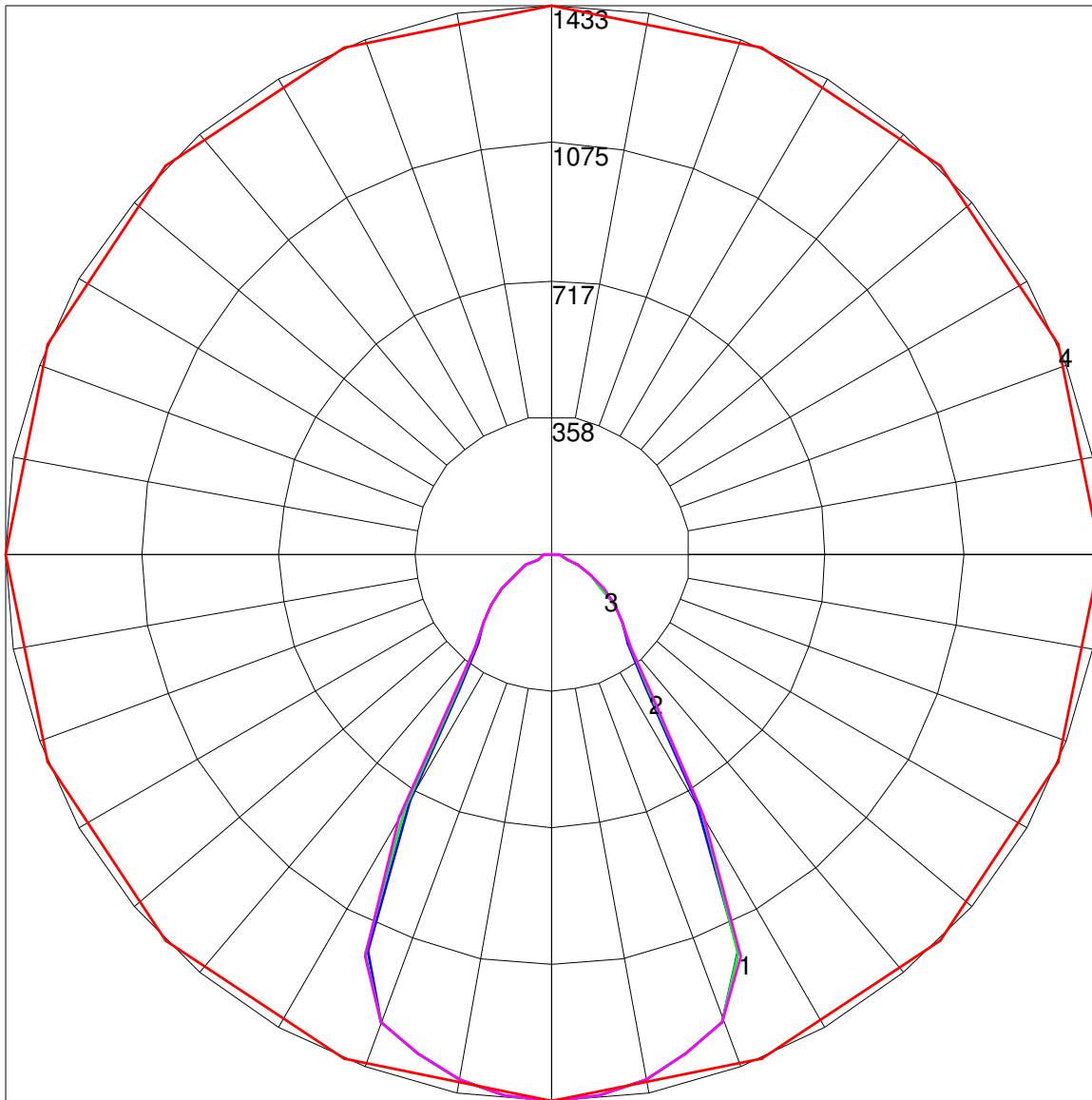
4H	2H	21.3	22.3	21.7	22.6	23.0	21.1	22.1	21.5	22.4	22.8
	3H	22.0	22.9	22.4	23.3	23.7	21.8	22.7	22.3	23.1	23.5
	4H	22.2	22.9	22.6	23.3	23.8	22.0	22.7	22.4	23.2	23.6
	6H	22.3	22.9	22.8	23.4	23.8	22.1	22.7	22.6	23.2	23.7
	8H	22.3	22.9	22.8	23.3	23.8	22.1	22.7	22.6	23.1	23.6
	12H	22.3	22.8	22.8	23.3	23.8	22.1	22.6	22.6	23.1	23.6

8H	4H	22.1	22.7	22.6	23.2	23.7	22.0	22.6	22.5	23.0	23.5
	6H	22.3	22.8	22.8	23.3	23.8	22.1	22.6	22.6	23.1	23.6
	8H	22.3	22.8	22.9	23.3	23.8	22.1	22.6	22.7	23.1	23.6
	12H	22.4	22.7	22.9	23.2	23.8	22.2	22.5	22.7	23.0	23.6

12H	4H	22.1	22.6	22.6	23.1	23.6	22.0	22.5	22.4	23.0	23.4
	6H	22.3	22.7	22.8	23.2	23.7	22.1	22.5	22.6	23.0	23.5
	8H	22.3	22.7	22.9	23.2	23.8	22.1	22.5	22.7	23.0	23.6

Maximum UGR = 23.8

POLAR GRAPH



Maximum Candela = 1433.261 Located At Horizontal Angle = 0, Vertical Angle = 0
1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)
2 - Vertical Plane Through Horizontal Angles (5 - 185)
3 - Vertical Plane Through Horizontal Angles (10 - 190)
4 - Horizontal Cone Through Vertical Angle (0) (Through Max. Cd.)