



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4DS-L21-9DW-DIM-UNV-OW-OF-WH\_.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002  
 [TEST] GEN FROM BALLABS TEST NO. 20315.0  
 [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"SATIN TRIM w/FROST FILM  
 [MORE] 0-10V DIMMING DRIVER  
 [LUMCAT] 4DS-L21-9DW-DIM-UNV-OW-OF-WH  
 [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	1607
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	43
Total Luminaire Watts	37.7
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	0.88
Spacing Criterion (90-270)	0.88
Spacing Criterion (Diagonal)	0.92
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	27076	31855	27342
55	9818	11945	9490
65	1999	2443	1777
75	363	363	0
85	0	0	0

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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>
<b>0</b>	1661.663	1661.663	1661.663	1661.663	1661.663
<b>5</b>	1649.082	1646.179	1643.275	1643.275	1640.372
<b>10</b>	1596.822	1591.983	1591.016	1585.209	1579.402
<b>15</b>	1479.722	1483.593	1495.206	1476.819	1467.141
<b>20</b>	1277.458	1292.942	1321.975	1284.232	1270.683
<b>25</b>	1004.546	1049.064	1087.775	1041.322	981.320
<b>30</b>	695.827	742.280	831.315	730.667	681.311
<b>35</b>	438.400	488.724	564.211	473.240	438.400
<b>40</b>	300.977	330.010	364.850	332.913	301.945
<b>45</b>	197.425	217.749	232.265	224.523	199.361
<b>50</b>	127.746	130.649	138.391	126.778	120.971
<b>55</b>	58.066	66.776	70.647	67.744	56.131
<b>60</b>	21.291	24.194	29.033	25.162	21.291
<b>65</b>	8.710	10.645	10.645	9.678	7.742
<b>70</b>	2.903	3.871	3.871	3.871	1.936
<b>75</b>	0.968	0.968	0.968	0.968	0.000
<b>80</b>	0.000	0.000	0.000	0.000	0.000
<b>85</b>	0.000	0.000	0.000	0.000	0.000
<b>90</b>	0.000	0.000	0.000	0.000	0.000

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**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	566.13	N.A.	35.20
0-30	1037.79	N.A.	64.60
0-40	1357.68	N.A.	84.50
0-60	1593.44	N.A.	99.20
0-80	1606.61	N.A.	100.00
0-90	1606.61	N.A.	100.00
10-90	1451.42	N.A.	90.30
20-40	791.55	N.A.	49.30
20-50	963.86	N.A.	60.00
40-70	247.57	N.A.	15.40
60-80	13.17	N.A.	0.80
70-80	1.36	N.A.	0.10
80-90	0.00	N.A.	0.00
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	1606.61	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	155.19
10-20	410.94
20-30	471.66
30-40	319.89
40-50	172.31
50-60	63.45
60-70	11.81
70-80	1.36
80-90	0.00
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	113	110	108	105	111	108	106	104	104	102	100	100	99	97	97	96	95	93
2	107	102	98	94	105	100	96	93	97	94	91	94	91	89	91	89	87	85
3	101	94	89	85	99	93	88	84	90	86	83	88	84	82	86	83	80	79
4	96	88	82	77	94	86	81	77	84	80	76	82	78	75	80	77	74	73
5	90	82	75	71	89	81	75	70	79	74	70	77	73	69	75	72	69	67
6	86	76	70	65	84	75	69	65	74	68	65	72	68	64	71	67	64	62
7	81	71	65	60	80	71	65	60	69	64	60	68	63	60	67	63	59	58
8	77	67	61	56	76	66	60	56	65	60	56	64	59	56	63	59	55	54
9	73	63	57	52	72	62	56	52	61	56	52	60	56	52	60	55	52	50
10	69	59	53	49	68	59	53	49	58	53	49	57	52	49	56	52	49	47

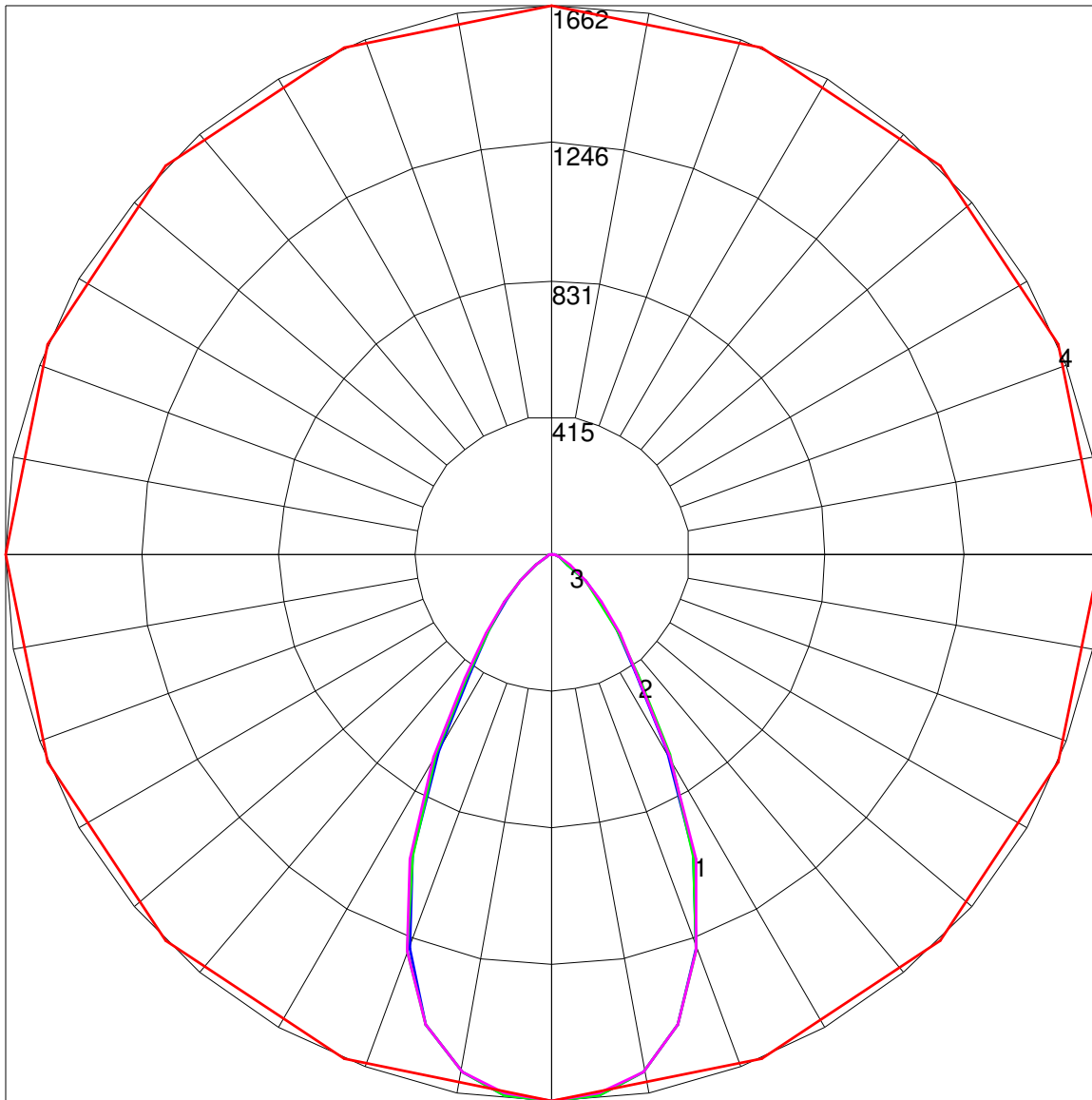
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**UGR TABLE - CORRECTED**

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	13.6	14.7	14.0	15.0	15.4	13.7	14.8	14.1	15.1	15.5
	3H	13.5	14.5	13.9	14.8	15.2	13.6	14.6	14.0	14.9	15.3
	4H	13.5	14.4	13.9	14.7	15.1	13.5	14.4	13.9	14.8	15.2
	6H	13.4	14.2	13.8	14.6	14.9	13.4	14.2	13.9	14.6	15.0
	8H	13.3	14.1	13.8	14.5	14.9	13.4	14.1	13.8	14.5	14.9
	12H	13.3	14.0	13.7	14.4	14.8	13.3	14.1	13.8	14.4	14.9
4H	2H	13.5	14.4	13.9	14.7	15.1	13.6	14.5	14.0	14.8	15.2
	3H	13.4	14.1	13.8	14.5	14.9	13.5	14.2	13.9	14.6	15.0
	4H	13.3	13.9	13.8	14.4	14.8	13.4	14.0	13.8	14.4	14.9
	6H	13.2	13.7	13.7	14.2	14.7	13.3	13.8	13.7	14.3	14.7
	8H	13.1	13.6	13.6	14.1	14.6	13.2	13.7	13.7	14.2	14.6
	12H	13.1	13.5	13.6	14.0	14.5	13.1	13.6	13.6	14.1	14.5
8H	4H	13.1	13.6	13.6	14.1	14.6	13.2	13.7	13.7	14.2	14.6
	6H	13.0	13.4	13.5	13.9	14.4	13.1	13.5	13.6	14.0	14.5
	8H	12.9	13.3	13.5	13.8	14.3	13.0	13.4	13.5	13.9	14.4
	12H	12.9	13.2	13.4	13.7	14.3	13.0	13.3	13.5	13.8	14.4
12H	4H	13.1	13.5	13.6	14.0	14.5	13.2	13.6	13.6	14.1	14.6
	6H	13.0	13.3	13.5	13.8	14.3	13.0	13.4	13.6	13.9	14.4
	8H	12.9	13.2	13.4	13.7	14.3	13.0	13.3	13.5	13.8	14.4

Maximum UGR = 15.5

POLAR GRAPH



Maximum Candela = 1661.663 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.)