



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4DS-L20-935-DIM-UNV-OW-OF-SG\_.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] 05-24-2023  
 [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-L20-935-DIM-UNV-OW-OF-SG  
 [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	1552
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	62
Total Luminaire Watts	25
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	26158	30774	26414
55	9485	11540	9168
65	1931	2360	1716
75	350	350	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>	1605.290	1605.290	1605.290	1605.290	1605.290
<b>5</b>	1593.136	1590.331	1587.526	1587.526	1584.722
<b>10</b>	1542.649	1537.975	1537.040	1531.430	1525.820
<b>15</b>	1429.522	1433.262	1444.481	1426.717	1417.368
<b>20</b>	1234.120	1249.079	1277.127	1240.664	1227.575
<b>25</b>	970.467	1013.474	1050.871	1005.994	948.028
<b>30</b>	672.221	717.098	803.113	705.879	658.197
<b>35</b>	423.527	472.144	545.069	457.185	423.527
<b>40</b>	290.766	318.814	352.472	321.619	291.701
<b>45</b>	190.728	210.361	224.385	216.906	192.597
<b>50</b>	123.412	126.217	133.696	122.477	116.867
<b>55</b>	56.096	64.511	68.251	65.446	54.226
<b>60</b>	20.569	23.373	28.048	24.308	20.569
<b>65</b>	8.414	10.284	10.284	9.349	7.480
<b>70</b>	2.805	3.740	3.740	3.740	1.870
<b>75</b>	0.935	0.935	0.935	0.935	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	546.92	N.A.	35.20
0-30	1002.58	N.A.	64.60
0-40	1311.62	N.A.	84.50
0-60	1539.38	N.A.	99.20
0-80	1552.11	N.A.	100.00
0-90	1552.11	N.A.	100.00
10-90	1402.18	N.A.	90.30
20-40	764.70	N.A.	49.30
20-50	931.16	N.A.	60.00
40-70	239.17	N.A.	15.40
60-80	12.73	N.A.	0.80
70-80	1.32	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	1552.11	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	149.93
10-20	396.99
20-30	455.66
30-40	309.04
40-50	166.47
50-60	61.30
60-70	11.41
70-80	1.32
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	87	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	76	72	69	67
6	86	76	70	65	84	75	69	65	74	69	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**

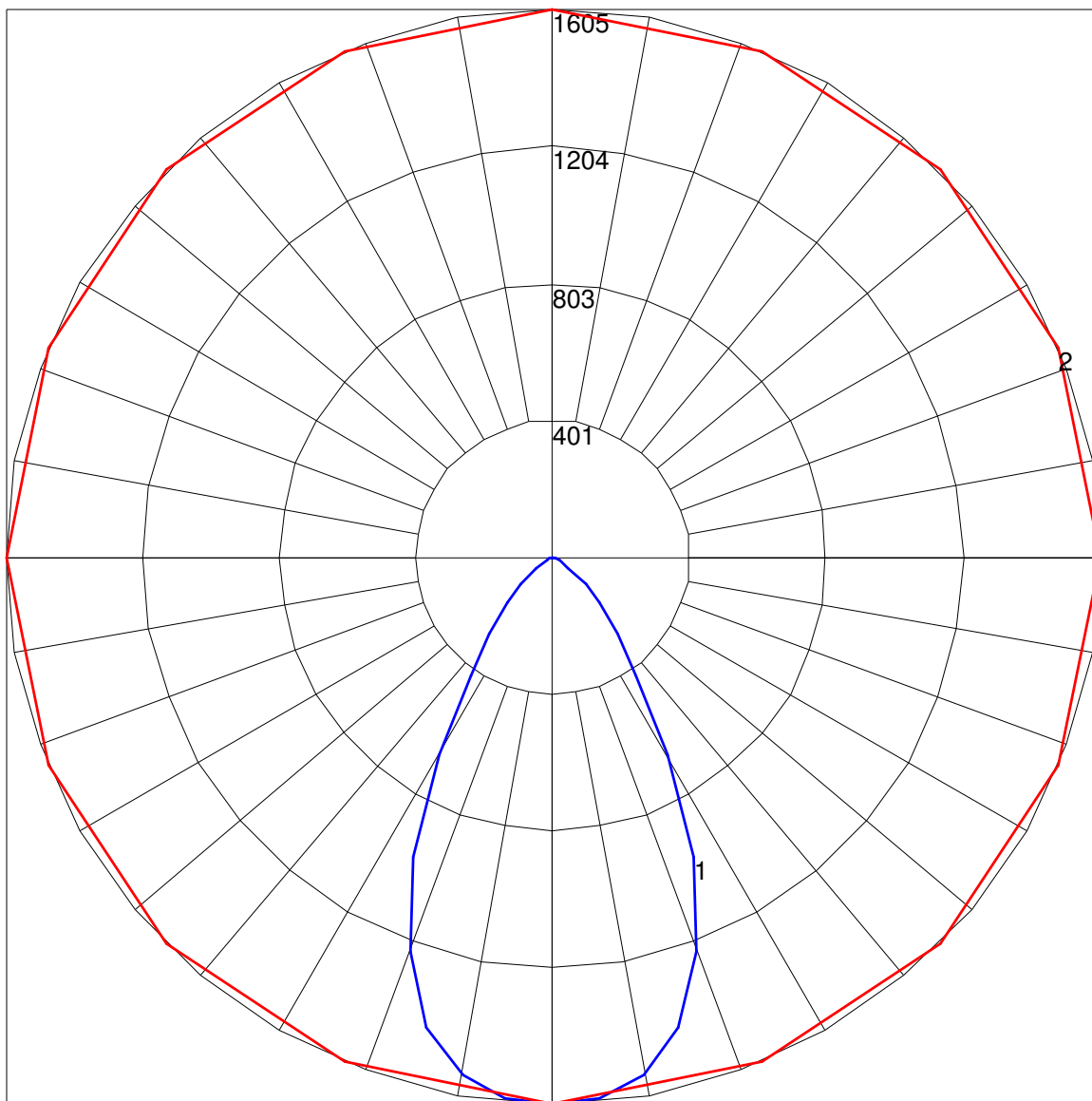
Reflectances

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	13.5	14.6	13.9	14.9	15.3	13.6	14.7	14.0	15.0	15.4
	3H	13.4	14.4	13.8	14.7	15.1	13.5	14.5	13.9	14.8	15.2
	4H	13.4	14.2	13.8	14.6	15.0	13.4	14.3	13.8	14.7	15.1
	6H	13.3	14.1	13.7	14.4	14.8	13.3	14.1	13.8	14.5	14.9
	8H	13.2	14.0	13.7	14.4	14.8	13.3	14.0	13.7	14.4	14.8
	12H	13.2	13.9	13.6	14.3	14.7	13.2	14.0	13.7	14.3	14.8
4H	2H	13.4	14.3	13.8	14.6	15.0	13.5	14.4	13.9	14.7	15.1
	3H	13.3	14.0	13.7	14.4	14.8	13.4	14.1	13.8	14.5	14.9
	4H	13.2	13.8	13.6	14.3	14.7	13.3	13.9	13.7	14.3	14.8
	6H	13.1	13.6	13.6	14.1	14.6	13.2	13.7	13.6	14.2	14.6
	8H	13.0	13.5	13.5	14.0	14.5	13.1	13.6	13.6	14.1	14.5
	12H	13.0	13.4	13.5	13.9	14.4	13.0	13.5	13.5	14.0	14.4
8H	4H	13.0	13.5	13.5	14.0	14.5	13.1	13.6	13.6	14.1	14.5
	6H	12.9	13.3	13.4	13.8	14.3	13.0	13.4	13.5	13.9	14.4
	8H	12.8	13.2	13.4	13.7	14.2	12.9	13.3	13.4	13.8	14.3
	12H	12.8	13.1	13.3	13.6	14.2	12.8	13.2	13.4	13.7	14.3
12H	4H	13.0	13.4	13.5	13.9	14.4	13.1	13.5	13.5	14.0	14.5
	6H	12.8	13.2	13.4	13.7	14.2	12.9	13.3	13.5	13.8	14.3
	8H	12.8	13.1	13.3	13.6	14.2	12.8	13.2	13.4	13.7	14.3

Maximum UGR = 15.4

POLAR GRAPH



Maximum Candela = 1605.29 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.)