



IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4DS-L20-840-DIM-UNV-RW-OF-WH_.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] 13-MAY-2020
 [MANUFAC] WILLIAMS INDOOR
 [OTHER] H.E. WILLIAMS, INC - CARTHAGE, MO
 [LUMINAIRE] 4"SQ CAST HOUSING DOWNLIGHT
 [MORE] WITH 4"CAST WHITE REGRESS w/SOLITE LENS
 [LUMCAT] 4DS-L20-840-DIM-UNV-RW-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	1991
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	80
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	37248	41541	37110
55	28679	27654	28166
65	18535	17376	18071
75	8323	9079	8701
85	4494	3370	4494

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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	1519.501	1519.501	1519.501	1519.501	1519.501
5	1510.414	1510.414	1509.404	1511.424	1515.462
10	1482.144	1480.125	1487.192	1496.279	1502.337
15	1440.749	1439.739	1446.807	1458.923	1465.990
20	1386.229	1384.210	1393.296	1393.296	1385.219
25	1214.591	1250.938	1305.458	1262.044	1210.552
30	796.602	906.652	1139.878	987.423	796.602
35	453.326	508.856	836.987	575.492	454.336
40	326.112	351.353	478.567	373.565	335.199
45	271.592	279.669	302.890	289.765	270.582
50	222.120	226.158	225.149	222.120	215.052
55	169.619	173.657	163.561	166.590	166.590
60	123.175	123.175	116.108	119.137	121.156
65	80.771	81.780	75.723	78.752	78.752
70	40.385	44.424	44.424	43.414	41.395
75	22.212	22.212	24.231	22.212	23.222
80	14.135	14.135	10.096	12.116	12.116
85	4.039	3.029	3.029	3.029	4.039
90	0.000	0.000	0.000	0.000	0.000

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	551.83	N.A.	27.70
0-30	1109.8	N.A.	55.70
0-40	1501.32	N.A.	75.40
0-60	1879.69	N.A.	94.40
0-80	1985.78	N.A.	99.70
0-90	1990.93	N.A.	100.00
10-90	1847.38	N.A.	92.80
20-40	949.49	N.A.	47.70
20-50	1176.25	N.A.	59.10
40-70	457.75	N.A.	23.00
60-80	106.09	N.A.	5.30
70-80	26.71	N.A.	1.30
80-90	5.15	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	1990.93	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	143.55
10-20	408.28
20-30	557.97
30-40	391.52
40-50	226.76
50-60	151.61
60-70	79.38
70-80	26.71
80-90	5.15
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

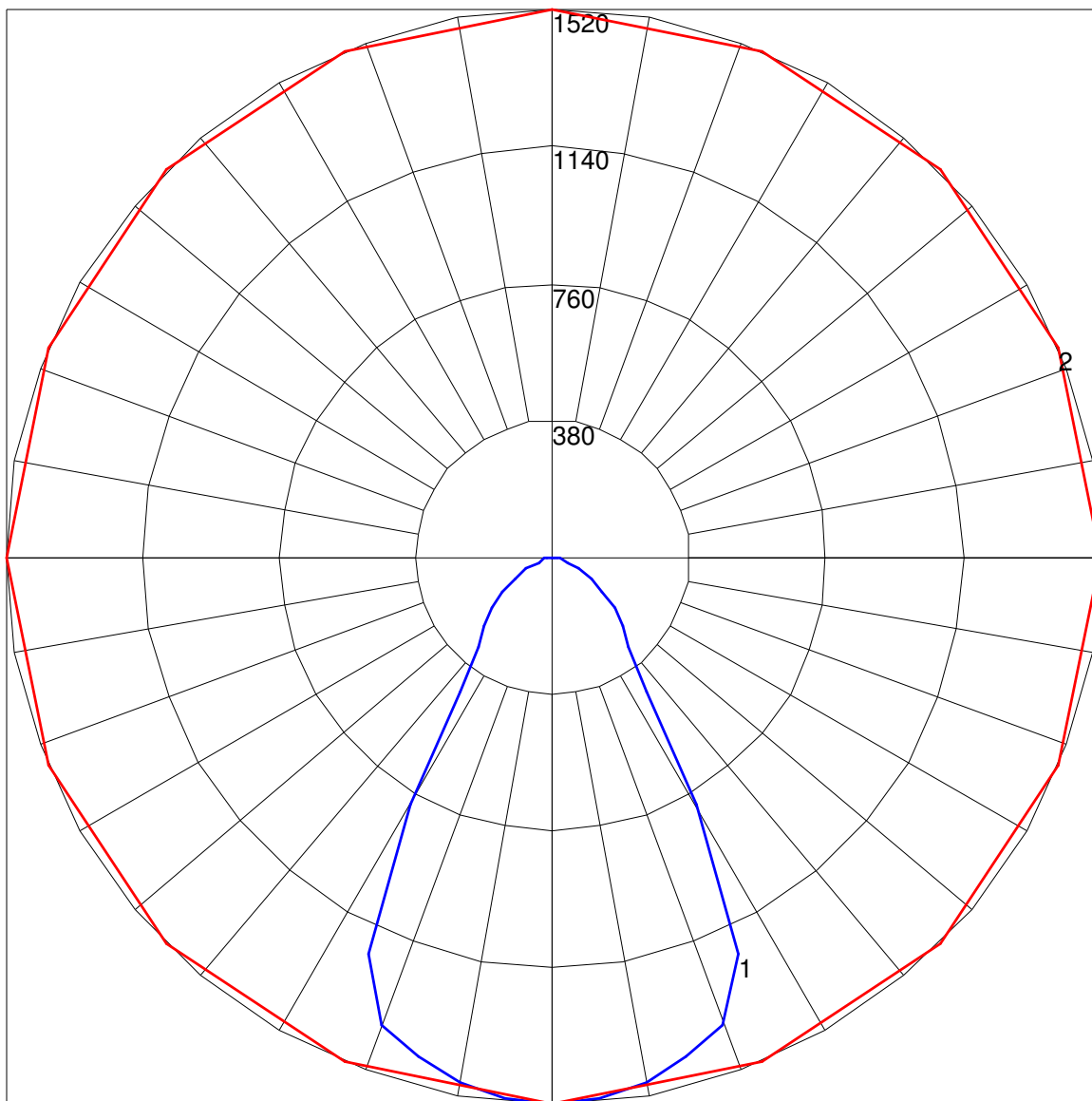
X=2H	Y=2H	21.3	22.5	21.6	22.8	23.1	21.0	22.3	21.4	22.6	22.9
	3H	21.9	23.0	22.3	23.3	23.7	21.7	22.8	22.1	23.1	23.5
	4H	22.0	23.0	22.4	23.4	23.8	21.8	22.8	22.2	23.2	23.6
	6H	22.1	23.0	22.5	23.4	23.8	21.9	22.8	22.3	23.2	23.6
	8H	22.1	23.0	22.5	23.3	23.7	21.9	22.7	22.3	23.1	23.5
	12H	22.0	22.9	22.5	23.3	23.7	21.8	22.7	22.3	23.1	23.5

UGR Viewed Endwise

4H	2H	21.5	22.5	21.9	22.8	23.2	21.3	22.3	21.7	22.6	23.0
	3H	22.2	23.1	22.6	23.5	23.9	22.1	22.9	22.5	23.3	23.7
	4H	22.4	23.1	22.8	23.5	24.0	22.2	22.9	22.6	23.4	23.8
	6H	22.5	23.1	23.0	23.6	24.0	22.3	22.9	22.8	23.4	23.9
	8H	22.5	23.1	23.0	23.5	24.0	22.3	22.9	22.8	23.3	23.8
	12H	22.5	23.0	23.0	23.5	24.0	22.3	22.8	22.8	23.3	23.8
8H	4H	22.3	22.9	22.8	23.4	23.9	22.2	22.8	22.7	23.2	23.7
	6H	22.5	23.0	23.0	23.5	24.0	22.3	22.8	22.8	23.3	23.8
	8H	22.5	23.0	23.1	23.5	24.0	22.3	22.8	22.9	23.3	23.8
	12H	22.6	22.9	23.1	23.4	24.0	22.4	22.7	22.9	23.2	23.8
12H	4H	22.3	22.8	22.8	23.3	23.8	22.2	22.7	22.6	23.2	23.6
	6H	22.5	22.9	23.0	23.4	23.9	22.3	22.7	22.8	23.2	23.7
	8H	22.5	22.9	23.1	23.4	24.0	22.3	22.7	22.9	23.2	23.8

Maximum UGR = 24.0

POLAR GRAPH



Maximum Candela = 1519.501 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.)