



IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4DR-TL-L20-935-DIM-UNV-OW-OF-CS_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN FROM BALLABS TEST NO. 20685.0

[TESTLAB] BUILDING ACOUSTICS & LIGHTING LABORATORIES, INC

[ISSUEDATE] 10/02/2019

[MANUFAC] WILLIAMS INDOOR

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

[LUMINAIRE] 4" RND RECESSED LED DOWNLIGHT

[MORE] OPEN SEMI-SPEC SPUN ALUMINUM REFLECTOR (WIDE)

[LUMCAT] 4DR-TL-L20-935-DIM-UNV-OW-OF-CS

[LAMPCAT] V13 BXRE-35E2000

[_SEARCH_SOURCETYPE] LED

[_SEARCH_APPLICATION] Indoor, Classroom, Commercial, Corridor, Hotel, Industrial, Office, Downlight

[_SEARCH_MOUNTING] Recessed

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	1644
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	83
Total Luminaire Watts	19.8
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.22
Spacing Criterion (90-270)	1.22
Spacing Criterion (Diagonal)	0.94
Basic Luminous Shape	Circular
Luminous Length (0-180)	0.37 ft (Diameter)
Luminous Width (90-270)	0.37 ft (Diameter)
Luminous Height	0.00 ft

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	4985	4985	4985
55	1536	1536	1536
65	190	190	190
75	0	0	0
85	0	0	0

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CANDELA TABULATION

	<u>0</u>
0	1410.924
5	1453.018
10	1496.671
15	1527.852
20	1595.670
25	1739.101
30	1362.594
35	239.311
40	62.361
45	34.299
50	17.929
55	8.575
60	3.898
65	0.780
70	0.780
75	0.000
80	0.000
85	0.000
90	0.000

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	576.59	N.A.	35.10
0-30	1318.87	N.A.	80.20
0-40	1605.09	N.A.	97.60
0-60	1642.19	N.A.	99.90
0-80	1643.93	N.A.	100.00
0-90	1643.93	N.A.	100.00
10-90	1504.17	N.A.	91.50
20-40	1028.5	N.A.	62.60
20-50	1056.95	N.A.	64.30
40-70	38.63	N.A.	2.30
60-80	1.74	N.A.	0.10
70-80	0.20	N.A.	0.00
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	1643.93	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	139.76
10-20	436.83
20-30	742.28
30-40	286.22
40-50	28.45
50-60	8.65
60-70	1.53
70-80	0.20
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	114	111	109	106	111	109	107	105	105	103	102	101	100	98	98	97	96	94
2	108	104	100	96	106	102	98	95	99	96	93	96	93	91	93	91	89	88
3	103	97	92	88	101	95	91	87	93	89	86	90	87	85	88	86	83	82
4	98	91	85	81	96	90	85	81	87	83	80	85	82	79	84	81	78	77
5	93	85	79	75	92	84	79	75	82	78	74	81	77	74	79	76	73	72
6	89	80	74	70	87	79	74	70	78	73	69	76	72	69	75	71	68	67
7	84	75	69	65	83	75	69	65	73	68	65	72	68	64	71	67	64	63
8	80	71	65	61	79	70	65	61	69	64	61	68	64	60	67	63	60	59
9	76	67	61	57	75	66	61	57	66	60	57	65	60	57	64	60	57	55
10	73	63	58	54	72	63	57	54	62	57	54	61	57	53	61	56	53	52

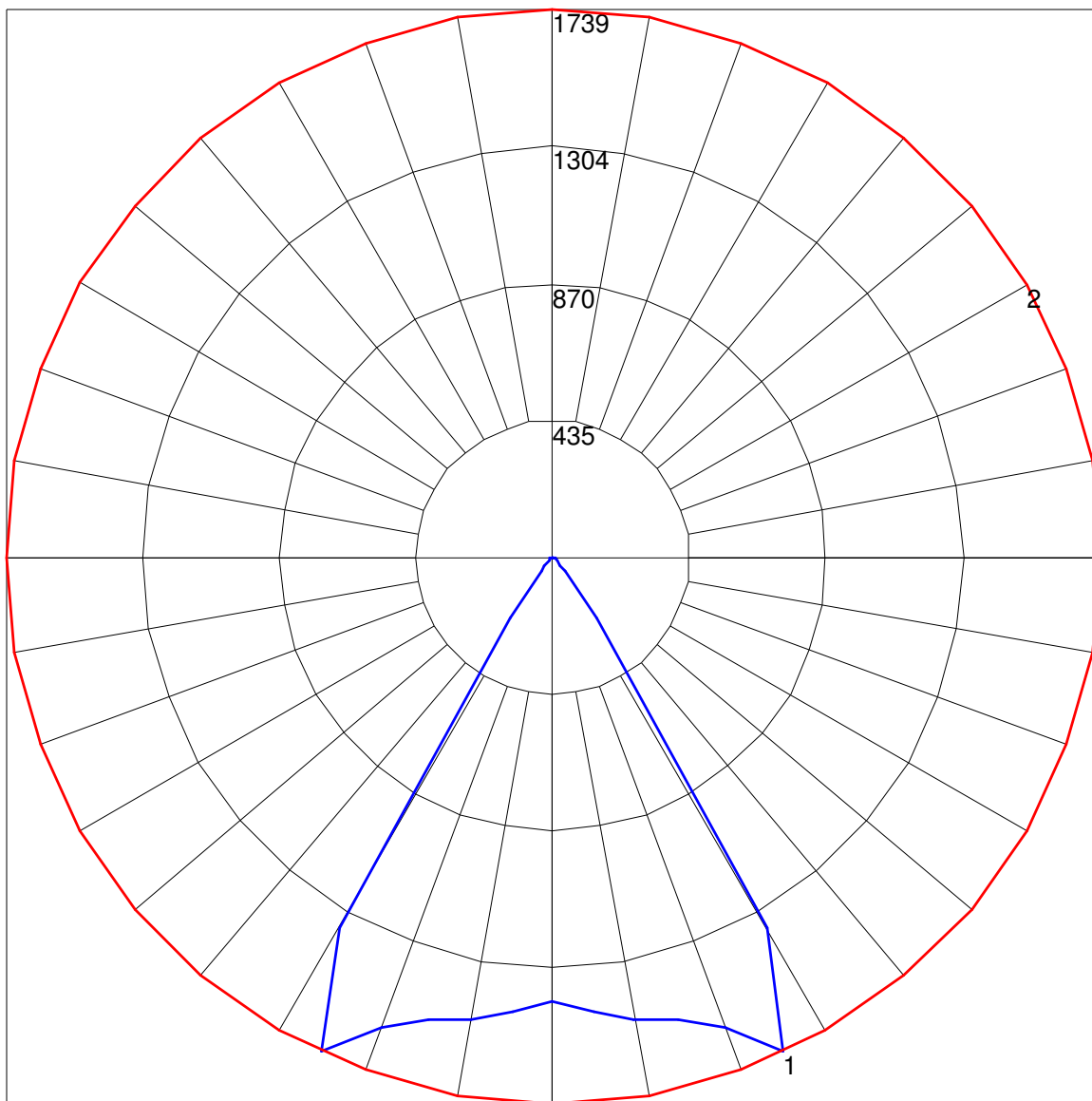
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UGR TABLE - CORRECTED

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	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
	3H	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
	4H	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
	6H	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
	8H	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
	12H	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
4H	2H	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
	3H	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
	4H	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
	6H	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
	8H	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
	12H	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
8H	4H	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
	6H	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
	8H	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
	12H	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
12H	4H	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
	6H	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
	8H	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7

Maximum UGR = 1.7

POLAR GRAPH



Maximum Candela = 1739.101 Located At Horizontal Angle = 0, Vertical Angle = 25
1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (25) (Through Max. Cd.)