

TOMAR Electronics, Inc.

IES INDOOR REPORT

PHOTOMETRIC FILENAME : TLB96WNNPGR SERIES WIDE ANGLE NORMAL EFFICACY 120-277VACA 250VDC.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST]17755-T
[TESTLAB]Cree Inc. - Durham Technology Center
[ISSUEDATE] 5/ 7/2015
[MANUFAC]Tomar
[LUMCAT]Highbay model TLB96WNNPGRD
[LUMINAIRE]Circular 8 LED Arrays on Heatsink with reflector and glass protective cover
[LAMP]Cree
[LAMPCAT]96 CREE XTE. LUMINAIRE OUTPUT = 29098 LM
[OTHER]Tested at 120 VAC at 60 Hz and 367.4W.

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	29122
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	79
Total Luminaire Watts	367.4
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	3.02
Spacing Criterion (90-270)	3.02
Spacing Criterion (Diagonal)	2.68
Basic Luminous Shape	Circular
Luminous Length (0-180)	1.75 ft (Diameter)
Luminous Width (90-270)	1.75 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	38359	36441	40817
55	79364	77130	80561
65	72357	73229	66506
75	13434	12436	9304
85	1559	1529	1277

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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>	<u>112.5</u>	<u>135.0</u>	<u>157.5</u>	<u>180.0</u>	<u>202.5</u>
0.0	3464.4	3464.4	3464.4	3464.4	3464.4	3464.4	3464.4	3464.4	3464.4	3464.4
2.5	3525.8	3528.0	3571.8	3604.6	3674.0	3833.5	3863.8	3910.8	3892.1	3910.8
5.0	4081.0	4091.9	4197.0	4234.4	4371.9	4587.7	4636.0	4719.9	4684.2	4719.9
7.5	4836.7	4861.6	4968.3	5008.7	5101.0	5240.5	5256.7	5321.1	5266.3	5321.1
10.0	5370.5	5421.2	5475.6	5516.2	5556.1	5687.1	5680.3	5693.6	5700.6	5693.6
12.5	5683.8	5738.1	5819.9	5779.1	5814.0	5858.5	5884.1	5815.5	5900.1	5815.5
15.0	5826.9	5849.3	5963.0	5852.9	5893.4	5886.4	5933.4	5832.3	5949.4	5832.3
17.5	5799.9	5842.1	5924.7	5832.3	5854.7	5832.6	5915.3	5778.3	5922.6	5778.3
20.0	5744.3	5776.7	5871.3	5760.4	5797.5	5769.9	5863.7	5709.9	5876.1	5709.9
22.5	5686.8	5687.9	5795.3	5692.3	5738.2	5698.1	5866.2	5638.3	5849.4	5638.3
25.0	5665.7	5615.4	5798.3	5632.1	5772.3	5642.8	5876.6	5561.5	5861.0	5561.5
27.5	5675.5	5586.9	5855.9	5585.0	5817.5	5576.2	5945.2	5496.8	5941.2	5496.8
30.0	5701.4	5512.9	5850.8	5481.3	5806.8	5534.4	5959.4	5449.3	5946.9	5449.3
32.5	5694.7	5409.6	5822.8	5415.4	5804.5	5465.4	5960.1	5393.7	5925.3	5393.7
35.0	5650.6	5277.8	5739.9	5288.0	5760.6	5304.7	5801.2	5242.1	5822.2	5242.1
37.5	5571.7	5099.6	5592.4	5134.7	5618.5	5146.6	5600.1	5102.3	5627.6	5102.3
40.0	5472.0	4970.7	5402.7	5048.2	5536.1	5038.9	5459.6	5020.1	5550.7	5020.1
42.5	5576.2	5088.4	5409.8	5321.4	5796.6	5357.4	5698.9	5430.1	5858.1	5430.1
45.0	6066.8	5699.8	5763.4	6091.7	6455.5	6273.2	6420.9	6414.3	6605.6	6414.3
47.5	6956.1	6798.8	6574.7	7268.0	7508.7	7633.6	7529.5	7750.1	7716.2	7750.1
50.0	8137.1	8146.3	7731.0	8609.7	8642.0	8890.8	8718.2	8978.8	8872.5	8978.8
52.5	9268.7	9334.1	8824.1	9698.7	9726.3	10052.3	9971.8	10030.8	9946.7	10030.8
55.0	10181.6	10221.7	9895.0	10283.8	10335.2	10542.0	10592.5	10288.9	10345.6	10288.9
57.5	10289.8	10181.7	10235.7	9937.3	10194.0	10205.8	10661.0	9973.7	10116.1	9973.7
60.0	9666.9	9215.3	9698.0	8950.7	9374.3	9179.1	9663.4	8841.3	9003.0	8841.3
62.5	8453.6	7877.2	8509.4	7637.5	7990.3	7436.4	8051.1	7240.9	7441.5	7240.9
65.0	6839.6	6373.1	6922.0	6169.7	6286.5	5837.9	6164.7	5654.7	5674.3	5654.7
67.5	5063.6	4822.7	5129.0	4638.7	4447.5	4262.3	4309.3	4079.6	3947.8	4079.6
70.0	3378.4	3363.9	3459.7	3179.8	2812.1	2663.3	2632.1	2466.3	2399.6	2466.3
72.5	1869.1	1848.5	1883.7	1665.3	1414.2	1247.9	1228.2	1100.6	1099.6	1100.6
75.0	777.7	654.2	719.9	545.0	538.6	380.9	441.9	334.2	412.5	334.2
77.5	312.7	241.7	285.3	223.9	233.1	190.8	184.7	178.0	183.3	178.0
80.0	131.9	142.4	123.6	141.5	109.1	128.1	88.6	119.5	85.3	119.5
82.5	64.4	96.4	62.9	91.8	54.5	76.9	45.2	68.9	44.4	68.9
85.0	30.4	49.2	29.8	45.8	24.9	29.1	18.5	23.5	18.7	23.5
87.5	9.6	9.2	7.7	6.9	5.1	3.3	2.4	2.0	2.0	2.0
90.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Vert. Angles Horizontal Angles

	<u>225.0</u>	<u>247.5</u>	<u>270.0</u>	<u>292.5</u>	<u>315.0</u>	<u>337.5</u>	<u>360.0</u>
0.0	3464.4	3464.4	3464.4	3464.4	3464.4	3464.4	3464.4
2.5	3863.8	3833.5	3674.0	3604.6	3571.8	3528.0	3525.8
5.0	4636.0	4587.7	4371.9	4234.4	4197.0	4091.9	4081.0
7.5	5256.7	5240.5	5101.0	5008.7	4968.3	4861.6	4836.7
10.0	5680.3	5687.1	5556.1	5516.2	5475.6	5421.2	5370.5
12.5	5884.1	5858.5	5814.0	5779.1	5819.9	5738.1	5683.8
15.0	5933.4	5886.4	5893.4	5852.9	5963.0	5849.3	5826.9
17.5	5915.3	5832.6	5854.7	5832.3	5924.7	5842.1	5799.9
20.0	5863.7	5769.9	5797.5	5760.4	5871.3	5776.7	5744.3
22.5	5866.2	5698.1	5738.2	5692.3	5795.3	5687.9	5686.8
25.0	5876.6	5642.8	5772.3	5632.1	5798.3	5615.4	5665.7
27.5	5945.2	5576.2	5817.5	5585.0	5855.9	5586.9	5675.5
30.0	5959.4	5534.4	5806.8	5481.3	5850.8	5512.9	5701.4

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CANDELA TABULATION - (Cont.)

32.5	5960.1	5465.4	5804.5	5415.4	5822.8	5409.6	5694.7
35.0	5801.2	5304.7	5760.6	5288.0	5739.9	5277.8	5650.6
37.5	5600.1	5146.6	5618.5	5134.7	5592.4	5099.6	5571.7
40.0	5459.6	5038.9	5536.1	5048.2	5402.7	4970.7	5472.0
42.5	5698.9	5357.4	5796.6	5321.4	5409.8	5088.4	5576.2
45.0	6420.9	6273.2	6455.5	6091.7	5763.4	5699.8	6066.8
47.5	7529.5	7633.6	7508.7	7268.0	6574.7	6798.8	6956.1
50.0	8718.2	8890.8	8642.0	8609.7	7731.0	8146.3	8137.1
52.5	9971.8	10052.3	9726.3	9698.7	8824.1	9334.1	9268.7
55.0	10592.5	10542.0	10335.2	10283.8	9895.0	10221.7	10181.6
57.5	10661.0	10205.8	10194.0	9937.3	10235.7	10181.7	10289.8
60.0	9663.4	9179.1	9374.3	8950.7	9698.0	9215.3	9666.9
62.5	8051.1	7436.4	7990.3	7637.5	8509.4	7877.2	8453.6
65.0	6164.7	5837.9	6286.5	6169.7	6922.0	6373.1	6839.6
67.5	4309.3	4262.3	4447.5	4638.7	5129.0	4822.7	5063.6
70.0	2632.1	2663.3	2812.1	3179.8	3459.7	3363.9	3378.4
72.5	1228.2	1247.9	1414.2	1665.3	1883.7	1848.5	1869.1
75.0	441.9	380.9	538.6	545.0	719.9	654.2	777.7
77.5	184.7	190.8	233.1	223.9	285.3	241.7	312.7
80.0	88.6	128.1	109.1	141.5	123.6	142.4	131.9
82.5	45.2	76.9	54.5	91.8	62.9	96.4	64.4
85.0	18.5	29.1	24.9	45.8	29.8	49.2	30.4
87.5	2.4	3.3	5.1	6.9	7.7	9.2	9.6
90.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	2107.79	N.A.	7.20
0-30	4755.11	N.A.	16.30
0-40	8201.03	N.A.	28.20
0-60	22010.68	N.A.	75.60
0-80	29077.31	N.A.	99.80
0-90	29122.15	N.A.	100.00
10-90	28663.58	N.A.	98.40
20-40	6093.25	N.A.	20.90
20-50	11133.66	N.A.	38.20
40-70	19892.47	N.A.	68.30
60-80	7066.64	N.A.	24.30
70-80	983.82	N.A.	3.40
80-90	44.82	N.A.	0.20
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	29122.15	N.A.	100.00

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	458.54
10-20	1649.25
20-30	2647.32
30-40	3445.93
40-50	5040.41
50-60	8769.24
60-70	6082.83
70-80	983.82
80-90	44.82
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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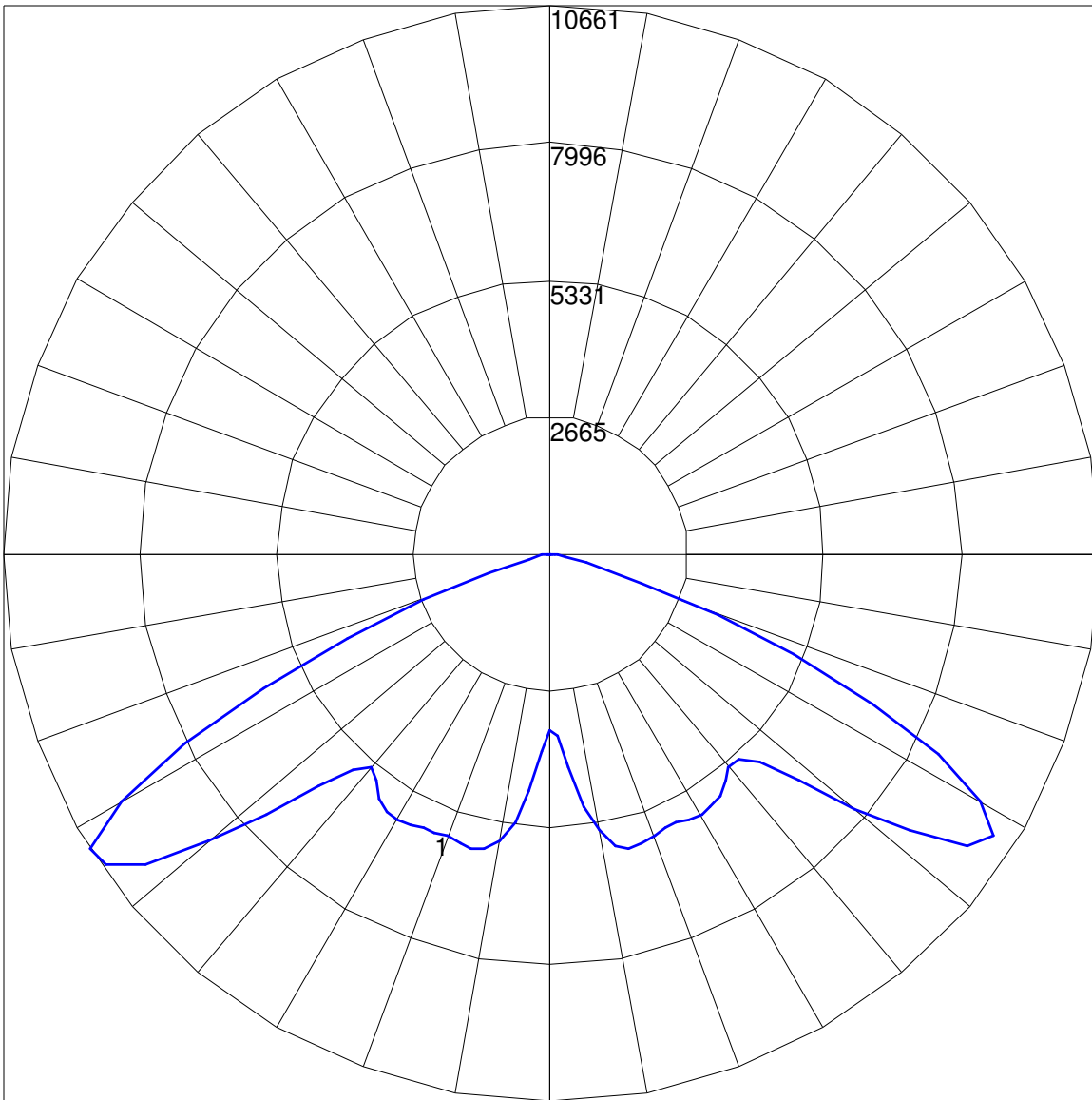
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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

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	109	104	99	95	106	101	97	94	97	94	91	93	90	88	90	87	85	83
2	97	88	81	75	95	87	80	74	83	77	72	80	75	71	76	73	69	67
3	87	76	67	60	85	74	66	59	71	64	58	68	62	57	65	60	56	53
4	78	65	55	48	76	64	55	48	61	53	47	59	52	46	56	50	46	43
5	71	57	47	39	69	56	46	39	53	45	39	51	44	38	49	43	38	35
6	65	50	40	33	63	49	39	33	47	39	32	45	38	32	43	37	32	29
7	59	44	35	28	57	43	34	28	42	34	27	40	33	27	39	32	27	25
8	55	40	30	24	53	39	30	24	38	30	24	36	29	24	35	28	23	21
9	51	36	27	21	49	35	27	21	34	26	21	33	26	21	32	25	20	18
10	47	33	24	19	46	32	24	18	31	24	18	30	23	18	29	23	18	16

POLAR GRAPH



Maximum Candela = 10661 Located At Horizontal Angle = 135, Vertical Angle = 57.5
1 - Vertical Plane Through Horizontal Angles (135 - 315) (Through Max. Cd.)