

DAY-BRITE FLUORESCENT SPECIFICATION BINDER**Photometric Tables Feature New Information****1. LER (Luminaire Efficacy Rating)**

A measure of Lumens/Watt for specific categories of fixtures as follows:

- FL** = Fluorescent Recessed Lensed
- FP** = Fluorescent Recessed Parabolic
- FW** = Fluorescent Wraparounds
- FS** = Fluorescent Strip
- FI** = Fluorescent Industrial

FORMULA:

$$\text{LER} = \frac{\text{Fixture Efficiency (X) Total Lamp Lumens (X) Ballast Factor}}{\text{Input Watts}}$$

EXAMPLE:

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$$\text{LER} = \frac{.818 (X) 4 (X) 2900 (X) .91}{99} = \text{FW } 87$$

2. Comparative Yearly Lighting Energy Cost

Cost per 1000 Lumens = _____
 (Based on 3000 Hrs/Yr & \$.08/Kwh)

FORMULA:

$$\text{Cost/1000 Lumens} = \frac{\text{Hrs/Year (X) Cost/Kwh}}{\text{LER}}$$

EXAMPLE:

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$$\text{Cost/1000 Lumens} = \frac{3000 (X) .08}{87} = \$2.76$$

These formulas are part of a voluntary program developed by **NEMA** and **Fixture Manufacturers** to satisfy the basic requirements of the Energy Policy Act of 1992 and the U.S. Department of Energy as they apply to luminaires.

3. Locating Photometric And Application Data Used for Examples:

Comparative Yearly Lighting Energy Cost

Ballast Factor

LER

Fixture Efficiency

Input Watts

LER

PHOTOMETRIC DATA **CATALOG # AWW 432-114-EB** **LAMPS = F32 T8** **INPUT WATTS = 99**

TEST #14976 **S/MH=1.5** **BALLAST = ELECTRONIC** **BALLAST FACTOR = .91** **LER = FW-87**

COMPARATIVE YEARLY LIGHTING ENERGY COST PER 1000 LUMENS = **\$2.76** BASED ON 3000 HRS. AND \$.08 PER KWH. **FIXTURE EFFICIENCY = 81.8%**

CANDLEPOWER			
Angle	End	45	Cross
0	3138	3138	3138
5	3128	3142	3130
15	3026	3111	3163
25	2822	3027	3187
35	2444	2852	3021
45	1862	2199	2393
55	1023	1153	1264
65	472	689	648
75	298	400	487
85	99	204	351
95	4	141	505
105	6	191	614
115	10	185	225
125	16	146	254
135	20	96	161
145	29	65	111
155	28	46	70
165	29	34	46
175	25	25	26

MAINTAINED ILLUMINATION TABLE- Square Feet/Fixture*						
<ul style="list-style-type: none"> 80-50-20 Reflectances (Ceiling-Wall-Floor) LLF = 0.75 2900 Lumens/Lamp very clean Room width divided by room height = 5 or more, 2 or 1 						
Fixture Size & # of Lamps	Room Width Room Height =	Approx. Area (sq. ft.) per Fixture				
		10 ft-c	30 ft-c	50 ft-c	70 ft-c	100 ft-c
4-Lamp F32 T8	5	-	-	146	104	73
	2	-	-	103	74	52
	1	-	124	74	53	38

*Observe Fixture S/MH Requirements for Specific Applications

COEFFICIENT OF UTILIZATION						
p/c pc pw RCR	20		70		50	
	70	50	30	70	50	30
0	95	95	95	92	92	92
1	87	84	81	84	81	78
2	81	75	70	78	72	68
3	74	67	61	72	65	59
4	68	60	53	66	58	52
5	63	53	46	61	52	46
6	58	48	41	56	47	40
7	53	43	36	52	42	36
8	49	39	32	47	38	31
9	45	35	28	44	34	28
10	42	31	25	40	31	25

AVERAGE LUMINANCE CD/SQ.M WITH 2900 LUMEN LAMPS			
ANGLE	END	45°	CROSS
45	5285	5808	6278
55	3518	3589	3899
65	2141	2711	2518
75	2079	2231	2665
85	1598	2061	3423

TYPICAL V.C.P.'s				
Room Size	Mounting Height		Crosswise	
	Lengthwise	8.5	10	8.5
30x30	50	54	47	53
40x40	46	49	42	47
60x30	51	56	50	55
60x60	42	45	38	41
100x100	39	41	33	36

LIGHT DISTRIBUTION			
DEGREES	LUMENS	% LAMP	% FIXTURE
0-30	2585.	22.3	27.3
0-40	4354.	37.5	45.9
0-60	7207.	62.1	76.0
0-90	8554.	73.7	90.2
90-180	930.	8.0	9.8
0-180	9484.	81.8	100.0

LLF = .75 LLF = LIGHT LOSS FACTOR LLD = LDD X LLD X BF LDD = VERY CLEAN 0.94 CLEAN 0.90
 LLD = 0.88 @ 40% RATED LAMP LIFE BF = 0.91 ELECTRONIC BALLAST & T-8 LAMP (RELAMP AT 70% LAMP LIFE)

Lumens/Lamp (X) Number of Lamps