

TOSHIBA LAMPS - FHF SERIES

Your Cost-Effective & Environmental Lighting Solutions

High Frequency Fluorescent Lamp (FHF Lamp)

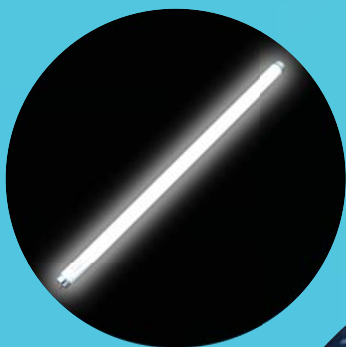
For decades linear fluorescent lamp has been the standard technology used to provide general lighting in commercial, institutional, and industrial applications. However, traditional Conventional Lighting System consumes more power but generates lower brightness. Thus, it is inefficient.

FHF Lighting is the right solution for you.

Advantages of FHF Lighting System

Improve Luminous Efficiency

- Provide higher brightness with lower wattage
- Brighter than conventional T8 lamp about 20%



Save Money

- Reduce total power consumption
- Reduce quantity of fixture
- Reduce installation, replacement, maintenance and related costs



Flicker-Less

- Reduce the incidence of headaches and eye strain, eliminate distractions and thus improve workplace quality and productivity



Environmental Friendly

- Reduce CO₂ emission.
- About 37% of CO₂ reduce compared with conventional T8 lamp



Long Life

- The average life time is 20,000 hours
- About 1.67 times of conventional T8 lamp

Good Color Performance

- With 3 types of phosphor colored blue, green and red, color performance is vastly improved and color is reproduced vividly

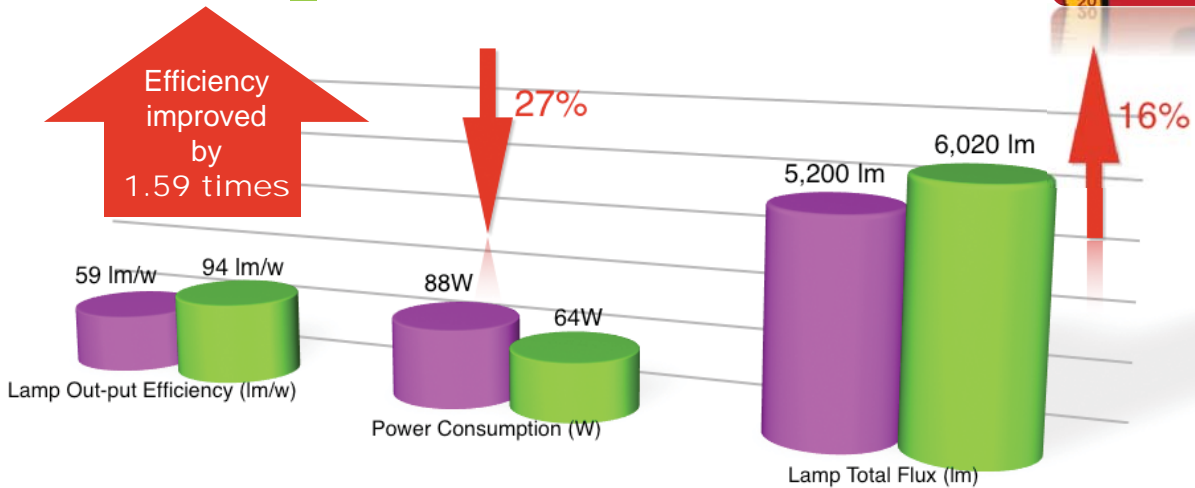


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Comparison of Conventional T8 and FHF Lamp

- FL36W x 2 with Conventional Ballast
- FHF32W x 2 with Electronic Ballast



With the same luminance, **Energy-saving of 37%** is achieved



Type	T8 standard 36W x 2 Lamps & Conventional ballast	FHF 32W x 2 Lamps & Electronic ballast
Room with L95 x W125 X H2.5	Illuminance 240 lm 36W x 2 Lamps Type	Illuminance 240 lm FHF 32W x 2 Lamps Type
Fixture type 36W reflector	Equal	
Fixture Quantity	1,080 sets	933 sets
Lamp Quantity	2,160 pcs	1,866 pcs
Power Consumption (W)	95,040 W	59,712 W

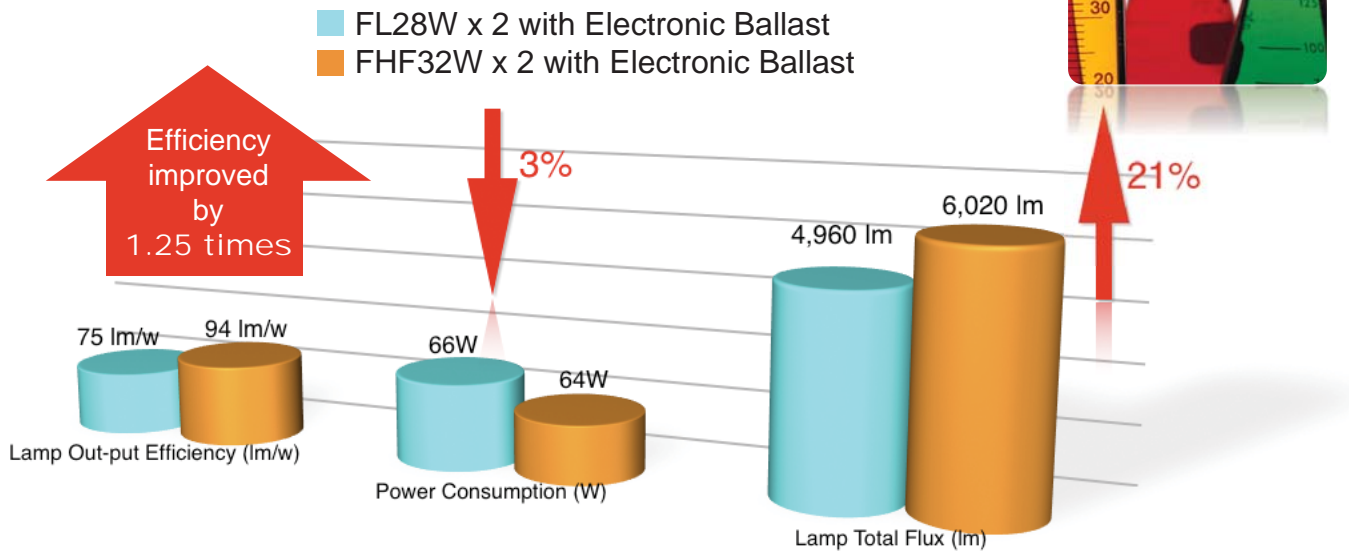
Operation Hours / year	Expected Reduction	
	Running Cost / year	CO ₂ / kg / year
3,000 hours	HK \$137,779	85,847 kg
7,200 hours	HK \$330,670	206,033 kg

- Electric Charge by Hong Kong Electric : HK\$ 1.3 / kwh
- GHG in Hong Kong : 0.810 kg CO₂ / kwh
 3,000 Hr = 10 hr / days x 25 days x 12 months
 7,200 Hr = 24 hr / days x 25 days x 12 months
 #GHG : Green House Gas Protocol
- The above statistic is based on renewal construction

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Comparison of Conventional T5 and FHF Lamp



With the same luminance, **Energy-saving of 20%** is achieved

Type	T5 standard 28W x 2 Lamps & Electronic ballast	FHF 32W x 2 Lamps & Electronic ballast
Room with L95 x W125 X H2.5	Illuminance 240 lm 28W x 2 Lamps Type	Illuminance 240 lm FHF 32W x 2 Lamps Type
Fixture type 36W reflector	Equal	
Fixture Quantity	1,133 sets	933 sets
Lamp Quantity	2,266 pcs	1,866 pcs
Power Consumption (W)	74,778 W	59,712 W

Operation Hours / year	Expected Reduction	
	Running Cost / year	CO ₂ / kg / year
3,000 hours	HK \$58,757	36,610 kg
7,200 hours	HK \$141,018	87,865 kg

1. Electric Charge by Hong Kong Electric : HK\$ 1.3 / kwh
2. GHG in Hong Kong : 0.810 kg CO₂ / kwh
 3,000 Hr = 10 hr / days x 25 days x 12 months
 7,200 Hr = 24 hr / days x 25 days x 12 months
 #GHG : Green House Gas Protocol
3. The above statistic is based on renewal construction




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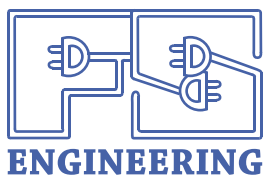
FHF Lamps Specification (T8 Rapid Start energy-saving)

Available with 2 sizes and 2 colors for any kinds of applications, including offices, conference rooms, stores and schools, etc.



Product Order Code	Color Temperature (k)	Watts (w)	Shape	Dia (mm)	Length (mm)	Base	Rated Lamp Current (A)	Initial Lumens (lm)	Average Life (h)	Color Rendering Index (Ra)	Std. Pkg. Q'ty.	Color Description
 Three Band Type												
FHF17EX-D	6,500	17	T-8	25.5	588.7	G13	0.255	1,320	20,000	84	25	3-Band Daylight
FHF32EX-D	6,500	32	T-8	25.5	1,198.0	G13	0.255	3,010	20,000	84	25	3-Band Daylight
FHF32EX-CW	4,100	32	T-8	25.5	1,198.0	G13	0.255	3,200	20,000	84	25	3-Band Cool White

Note : Measurement are made by high frequency operation.



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