Different Types of Tube Lights – T12, T8 and T5

"Tube light" – It is very familiar to everyone and can be noticed almost everywhere in houses, offices, hospitals, etc. But, do you know that not all tube lights are same? Do you know that there are three different types of tube lights? Yes, there are three different types of tube lights and they are T12, T8 and T5 tube lights. Let us see in this article, how they differ from each other and which is better by comparing some key parameters like cost, energy consumption, durability, performance, pleasantness of the light and the effect on environment.

Dimensions

Before we look into differences in their dimensions, let us first understand what the codes T12, T8 and T5 means. "T" means tubular (structure of the bulb) and the numbers 12, 8, 5 means the diameter of the tube light measured in 1/8th inch.

TUBELIGHT (TYPE)	DIAMETER (INCHES)	LENGTH (INCHES)
T12 (REGULAR)	1.5	48 inches
T8 (THIN)	1	48 inches
T5 (ULTRA THIN)	0.62	45.2

T5 tube lights are thinner and shorter.

Cost

The prices for 4 ft tube lights that emit 2,500 lumens of brightness are

TUBE LIGHT (TYPE)	INITIAL COST	MAINTENACE	LED (NO BALLAST AND STARTER IS REQUIRED)
T12 (REGULAR)	40	Stand ₹300(forever), Ballast ₹ 150(50,000 hrs), starter ₹ 20(5000 Hrs.	NOT AVAILABLE
T8 (THIN)	48	Stand ₹ 300(forever), Ballast ₹ 150(8,000 hrs), starter ₹ 20(5000 Hrs.	₹ 1499
T5 (ULTRA THIN)	140	Special ballast – ₹500(10,000 hours)	₹ 1599

Initial investment and maintenance is cheaper in T12 and T8 while T5 tube lights are significantly expensive.

Energy consumption

Energy consumed to emit 2,500 lumens brightness

TUBE LIGHT (TYPE)	FTL (IN WATTS)	LED (IN WATTS)
T12 (REGULAR)	40	N/A
T8 (THIN)	36	20
T5 (ULTRA THIN)	36	18

T5 tube lights comparatively consume less energy than T12 and T8s

Warranty

TUBE LIGHT (TYPE)	FTL	LED
T12 (REGULAR)	NIL	N/A
T8 (THIN)	NIL	2 YEARS
T5 (ULTRA THIN)	6 MONTHS	2 YEARS

Durability

TUBE LIGHT (TYPE)	FTL (IN HOURS)	LED (IN HOURS)
T12 (REGULAR)	6000	50000
T8 (THIN)	6000	50000
T5 (ULTRA THIN)	10000	50000

T5 tube lights have 50% more life span than T8 and T12 tube lights

Performance

TUBE LIGHT (TYPE)	LUMENS/WATT	UTILIZATION	LED (LUMNES/WATT)
T12 (REGULAR)	30	0.46	N/A
T8 (THIN)	35	0.76	100
T5 (ULTRA THIN)	40	0.90	100

Note: Utilization is often measured in CU (co-efficiency of utilization) which is the ratio of light fallen on the plane or surface to the total light emitted from the light bulb.

Performance of T5 tube lights is little more than T8 and T12 tube lights

Pleasantness of the light

TUBE LIGHT (TYPE)	COLOUR OF LIGHT	LED CRI
T12 (REGULAR)	62 CRI	80
T8 (THIN)	80 CRI	80
T5 (ULTRA THIN)	85 CRI	80

Note: CRI is colour rendering index used to represent colour and nature of the light emitted. *The more CRI, the whiter the light is. So, T8 and T5 tube lights emit bright day light that is pleasant. But, since T5s are thinner and smaller they glare and are harsh on eyes.*

Environmental friendliness

TUBE LIGHT (TYPE)	MERCURY CONTENT	LED
T12 (REGULAR)	21 mg	NIL
T8 (THIN)	10 mg	NIL
T5 (ULTRA THIN)	6 mg	NIL

The less mercury content, the more eco-friendly it is. Hence, T5 tube lights are eco friendly

Conclusion

Among the three, T12s are inefficient. So, there is no point in comparing it with T8s and T5s. And, with little extra performance, T5 tube lights are way too expensive than T8 tube lights. So, T8s are economical than T5s.

Note: It is better to dispose tube lights after 6,000 burning hours because it contains mercury; With light rays, it may cause skin rashes. So, it is better to dispose them and dispose them carefully without breaking and getting into direct contact with the mercury in the tube light