



Metal Halide Versus T-5 Fluorescent Fixture Comparison

The below analysis answers the question of, “Which would be the best lighting option for a warehouse, manufacturing or production facility - the industry standard metal halide fixture or the new technology T-5 high-bay fixture?”

Below is a comparison of a 400 Watt metal halide fixture to a fluorescent T-5 fixture. The T-5 is a relatively new, excellent quality high-bay fixture now being utilized by many large companies in their factories, production areas and warehouses facilities. (Note: The metal halide figures used below would also be similar or comparable to a high-pressure sodium (HPS) fixture.)

1. **Energy Efficiency** – a four lamp T-5 fixture draws only 235 Watts compared to 455 Watts for a single lamp metal halide fixture. This equates to a 48% savings. Bottom Line: The T-5 is an energy efficient fixture which can significantly reduce a facility's overall energy consumption.
2. **Light Output Levels** – The new T-5 fixture has excellent light output or quantity of light output. In most cases, the level of light output equals or exceeds existing metal halide output levels. One of the most common reasons to install the new T-5 fixture is to increase and significantly improve light output levels for all types of tasks and production applications.
3. **Color Rendering** - with respect to color rendering (CRI) or how natural the light looks. The T-5 has a CRI of approx. 85 (which is rated as “excellent” and very close to actual sunlight) compared to the metal halide fixture CRI of approximately 65 (which is considered “good” by industry standards). The T5 produces better image clarity and truer actual color renderings.
4. **Start Up and Restrike Time** - The T-5 is an instant start and restart fixture. The metal halide fixture typically has a 10-15 minute start up delay and restrike time. If the lights are turned off or a power surge occurs, there is significant down time with the metal halide fixture.
5. **Hot Spots** – Or gaps in light coverage. The T-5 provides a well-diffused spread with excellent coverage (especially in light of the spacing of the existing fixtures). By comparison, the metal halide fixture is a point source light producing considerable gaps or hot spots in the coverage task areas on the factory and warehouse floors.
6. **Heat** - The T-5 is a considerably cooler fixture compared to the metal halide fixture. Many facilities have adequate heating for the winter, but no cooling for the summer. Therefore, the metal halides significantly increase the temperature levels in the hotter summer months making the facility uncomfortable for employees.

7. **Ballast Hum** - The T-5 is a quiet fixture because the electronic ballasts. Employee comfort levels in the plant are increased when the hum is eliminated. Numerous studies show ballast hum can be the cause of headaches and fatigue, which translates to reduced productivity.
8. **Lamp Life Depreciation** - The T-5 has a loss percentage of only 5% over the life of the lamp compared to an approximate 30% loss in the metal halide fixture. Metal halide, high-pressure sodium, and T12 fluorescent lamps lose significant levels of their light output over the life of the lamp (30% - 40%). The T-5 maintains its light output over time.
9. **Maintenance Convenience** - If one lamp out of four in the T-5 fixture burns out, the other 3 lamps still operate. Unlike the T-5, the metal halide fixture or high-pressure sodium lamp has one lamp and when it burns out, it requires immediate replacement.

CONCLUSION:

For many commercial and industrial applications, the T-5 fluorescent fixture is an excellent option for dramatically increasing output levels, significantly reducing the energy consumption, improving color, reducing start up time, decreasing heat, reducing ballast hum, and maintenance convenience.



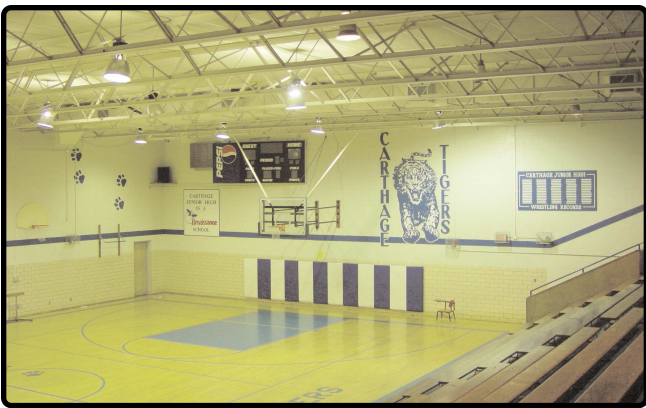
Before

- (16) 400 watt High Pressure Sodium
- Energy consumption — 400 HPS: 465 watts per fixture
Total load = 7.4 Kilowatts
- Footcandles on the floor = 18 average



After

- (16) 4' GL units with (4) 54 watt T5HO lamps, and cord & plug
- Energy consumption — 234 watts per fixture
Total load = 3.7 Kilowatts
- Footcandles on the floor = 34 average



Before

- (15) 400-watt mercury vapor units over the playing floor
(5) 300-watt incandescent units over the bleachers
- Energy consumption — 400 Mercury: 454 watts per fixture
300 Incandescent: 300 watts per fixture
Total load = 8.3 Kilowatts
- Footcandles on the floor = 18 average
- Mounting height = 20', spacing = 20' on center



After

- (20) 4' GL units with (4) 54 watt T5HO lamps, wireguard, and cord & plug
- Energy consumption — 234 watts per fixture
Total load = 4.7 Kilowatts
- Footcandles on the floor = 65 average
- Mounting height = 22', spacing = 20' on center