

Study of Application of Light Reflector on Fluorescent Tube

Brief Description of the Technology Development

Using T5 fluorescent tube and electronic ballasts have been widely adopted by the trade to save energy. To ever improve energy saving on lighting installations, some manufacturers apply silver/aluminum alloy or anodized aluminum on the light reflector, i.e. mirror reflector or adopt nano-technology in light reflector, i.e. nano-technology reflector to enhance the light reflectance such that fewer light tubes are needed for the illumination of an area. The cost of mirror reflector is in a range of HK\$100 to HK\$300 and the installation method is simple by clipping the reflector directly on the light tube.



Appearance of Mirror Reflector

It is known that light reflectors are inserts designed to reduce the internal light loss in light fixtures by using highly reflective surfaces to redirect light out of the fixture. They could be used in new lighting fixtures or installed in existing fixtures as part of an energy-saving retrofit strategy¹.

Usage and Case Study of the Technology

EMSD has arranged mirror reflector trial in their office, meeting room or workshop. The trial results and feedback from the users has been analyzed.

After the trial, it is concluded that the mirror reflector can increase the illumination level by 25% - 33% and thus can de-lamp part of light tubes subject to the room

¹ https://www.energystar.gov/sites/default/files/buildings/tools/EPA_BUM_CH6_Lighting.pdf (Page 22)
http://ee.emsd.gov.hk/english/lighting/light_technology/light_tech_others.html#4

condition. The payback period is about 2 to 5 years. When applying the light reflector on existing lighting fixtures, lighting quality such as glare and uniformity are key factors to be considered.

Recommended Applicability and Follow-up Actions

This mirror reflector is applicable for using in the corridors or staircases which uniformity is not a major concern. Alternatively, re-designing and re-arranging the lighting luminaire can achieve better uniformity and glare performance when reducing the numbers of light tubes or fixtures.