



KARANDIKAR LABORATORIES PVT LTD.

IS/IEC: 60079-28: 2006 Explosive Atmospheres. Protection of Equipment and Transmission Systems Using Optical Radiation

Equipment, utilizing Optical Radiation is rapidly on the rise. The common forms of equipment using OPTICAL RADIATION are as follows:

- LED's
- Optical Fibres
- Lasers

The optical radiation having ***high data transmission*** speed in the Hazardous Areas (potentially explosive atmospheres) can ignite the surrounding atmosphere and may result in explosion.

The guidelines for protection are provided, in IS/IEC 60079-28: 2006 and we at KLPL have developed a state-of-the-art test facility for conducting the requisite tests.

Following three types of protection can be applied to prevent ignition by Optical Radiation in potentially explosive atmospheres. These types encompass the entire Optical system.

Sr No	Type	Symbol
1	Inherently safe Optical Radiation is (Inherently Safe) optical radiation means visible or infrared radiation that is incapable of supplying sufficient energy, under normal or specified fault conditions to ignite a specific explosive atmosphere.	op is
2	Protected Optical Radiation pr (Protected Optical Radiation) is CONFINED or PROTECTED inside the optical or other transmission medium such that there is no escape of radiation from the confinement.	op pr
3	Optical System with Interlock This Type of protection is applicable when the radiation is not [is] Inherently Safe with INTERLOCK CUT-OFF if the protection by the confinement fails and the radiation becomes UNCONFINED on time scales suitably shorter than the Ignition Delay Time	op sh

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