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SERIES L: CONSTRUCTION, INSTALLATION AND
PROTECTION OF CABLES AND OTHER ELEMENTS OF
OUTSIDE PLANT

**Optical fibre cable maintenance support,
monitoring and testing system for optical fibre
cable networks carrying high total optical power**

ITU-T Recommendation L.68

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ITU-T Recommendation L.68

Optical fibre cable maintenance support, monitoring and testing system for optical fibre cable networks carrying high total optical power

Summary

ITU-T Recommendation L.68 describes the functional requirements for optical fibre cable maintenance systems for optical fibre cable carrying a high total optical power. It also considers safety procedures and guidelines for the maintenance of outside optical fibre plant carrying a high total optical power.

Source

ITU-T Recommendation L.68 was approved on 22 October 2007 by ITU-T Study Group 6 (2005-2008) under the ITU-T Recommendation A.8 procedure.

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Introduction

Broadband optical access services are now commercially available. The number of FTTx subscribers is increasing rapidly. Trunk line communication traffic is also growing quickly due to the expansion of FTTx services. To meet the demand for increased transmission capacity, wavelength division multiplexing (WDM) and distributed Raman amplifier (DRA) technologies have been employed in trunk line transmission systems, and consequently high power communication signals and high pump powers have been introduced into optical fibre cables. If we are to maintain the optical cable networks reliably, we must study optical fibre cable maintenance systems that can be applied to optical fibre cable carrying a high total optical power.

Recently, the optical power in optical communication systems has been increasing rapidly through the use of WDM or distributed Raman amplification technologies. When DRA technology is applied to WDM systems, a high power light is launched into optical fibres and fibre-optic components. The intensity of that optical power reaches several watts, and such a high power light may induce damage in optical fibres or fibre-optic components.

During maintenance work, network operators must handle optical fibres or fibre-optic components carefully in central offices that employ high power systems with a view to preventing accidental eye or fire hazards. Since the light with the highest optical power is launched into the optical fibre distribution systems and the maintenance systems in a central office, we must clarify the effect that it has on the fibre-optic components in these systems.