



CORNING

Discovering Beyond Imagination

# Fiber Tutorial

**Robert S. Carlisle**  
**System House Market Development**

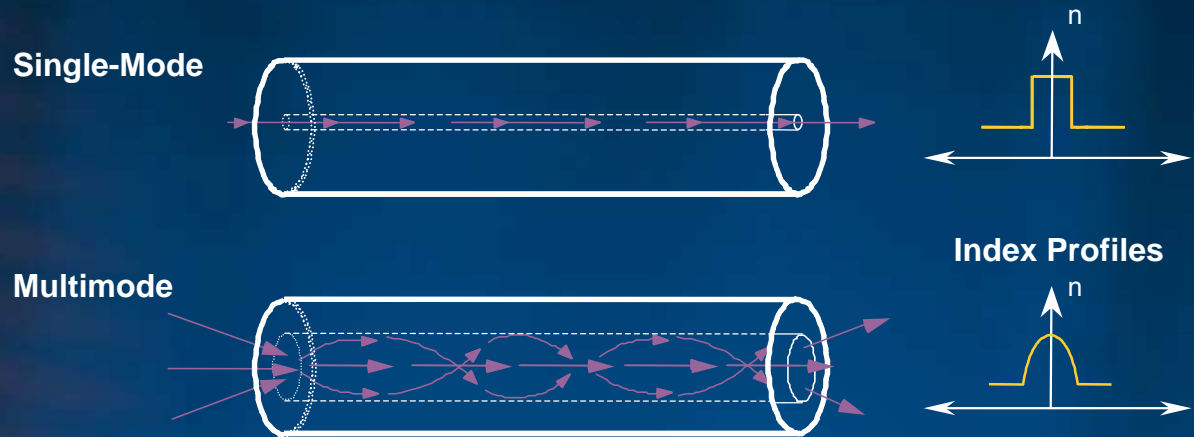


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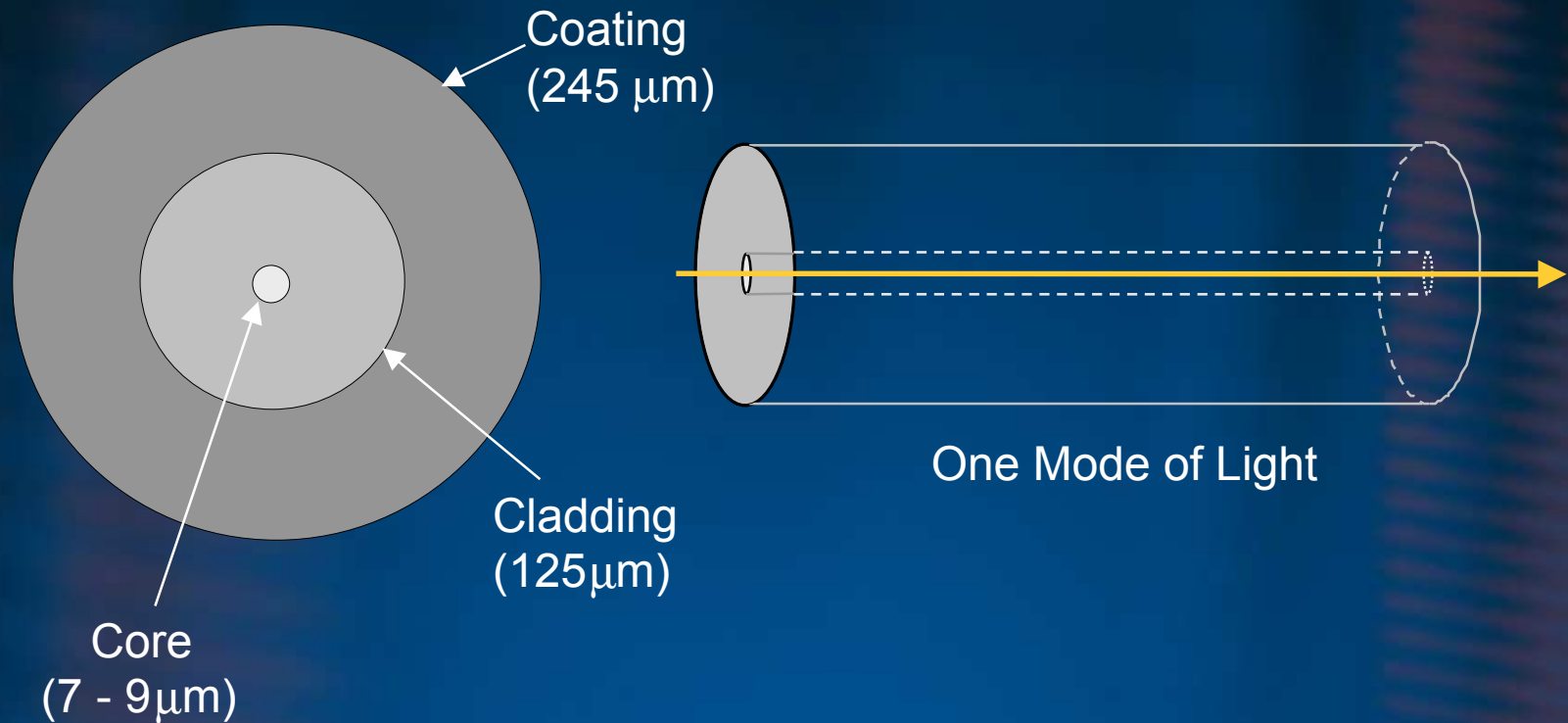
# How Optical Fibers Work

## Two Basic Types of Optical Fiber

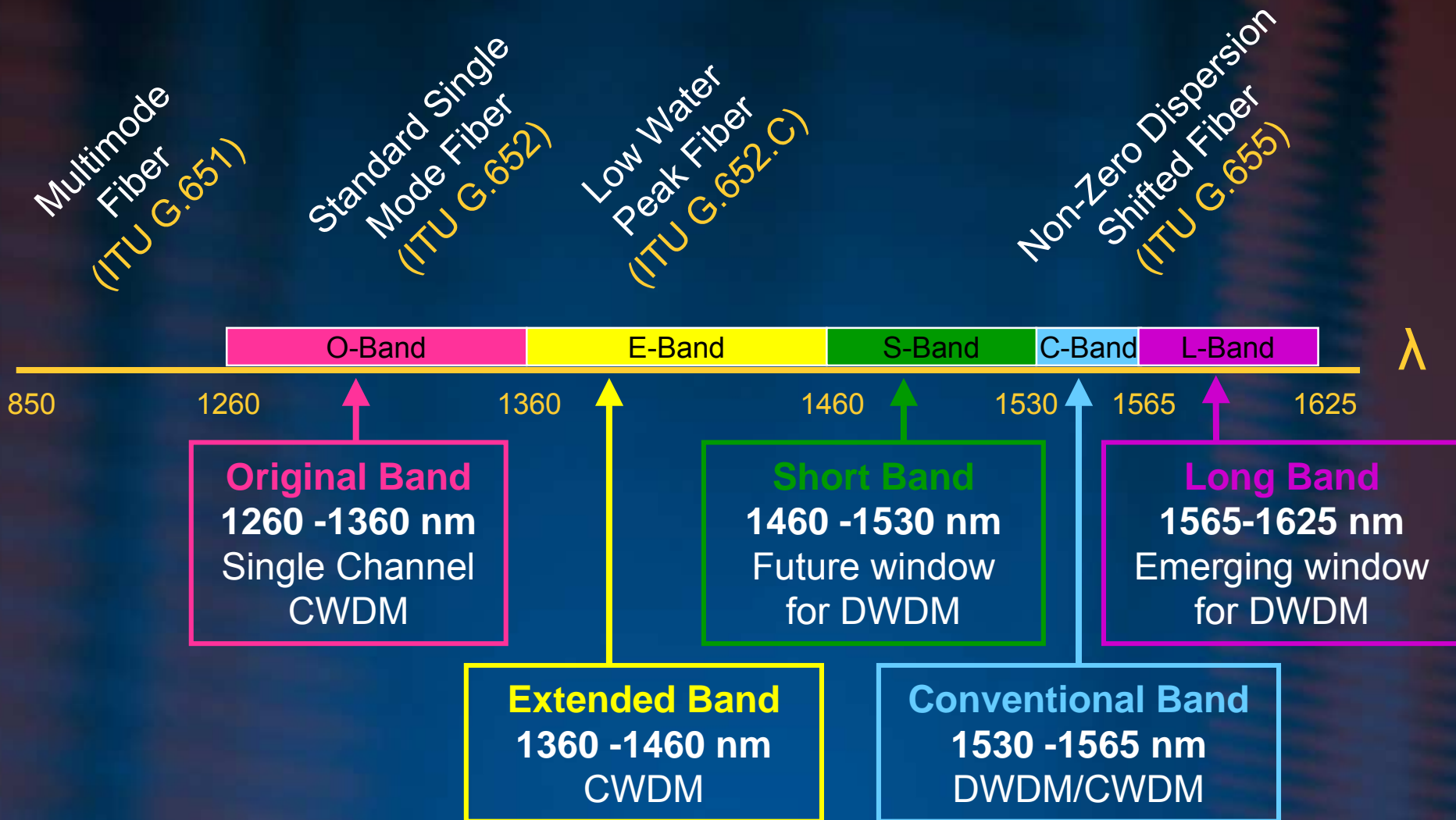


# Single-Mode Optical Characteristics

- Overview



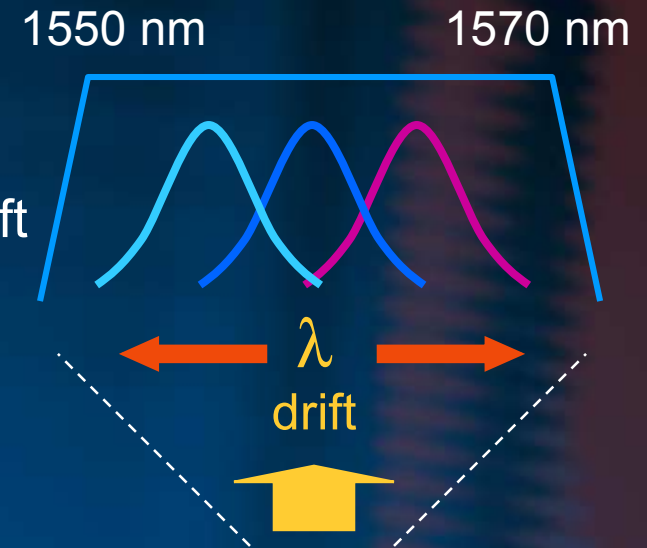
# Transmission Band Definitions



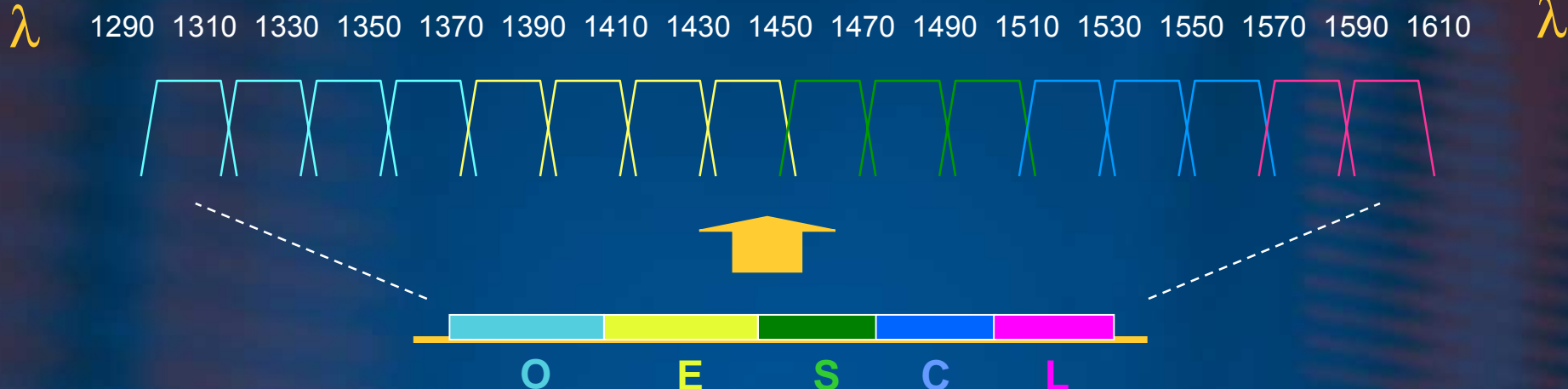
# CWDM Technology

## DML Cost Advantages

- No cooling required ~ 20nm channel spacing
  - $\Delta T \sim 0.08 - 0.12 \text{ nm}/^\circ\text{C}$  shift -- 6 - 8 nm drift
- Lower  $\lambda$  tolerance --  $1560 \pm 3 \text{ nm}$  DML
  - higher vendor yields = lower costs

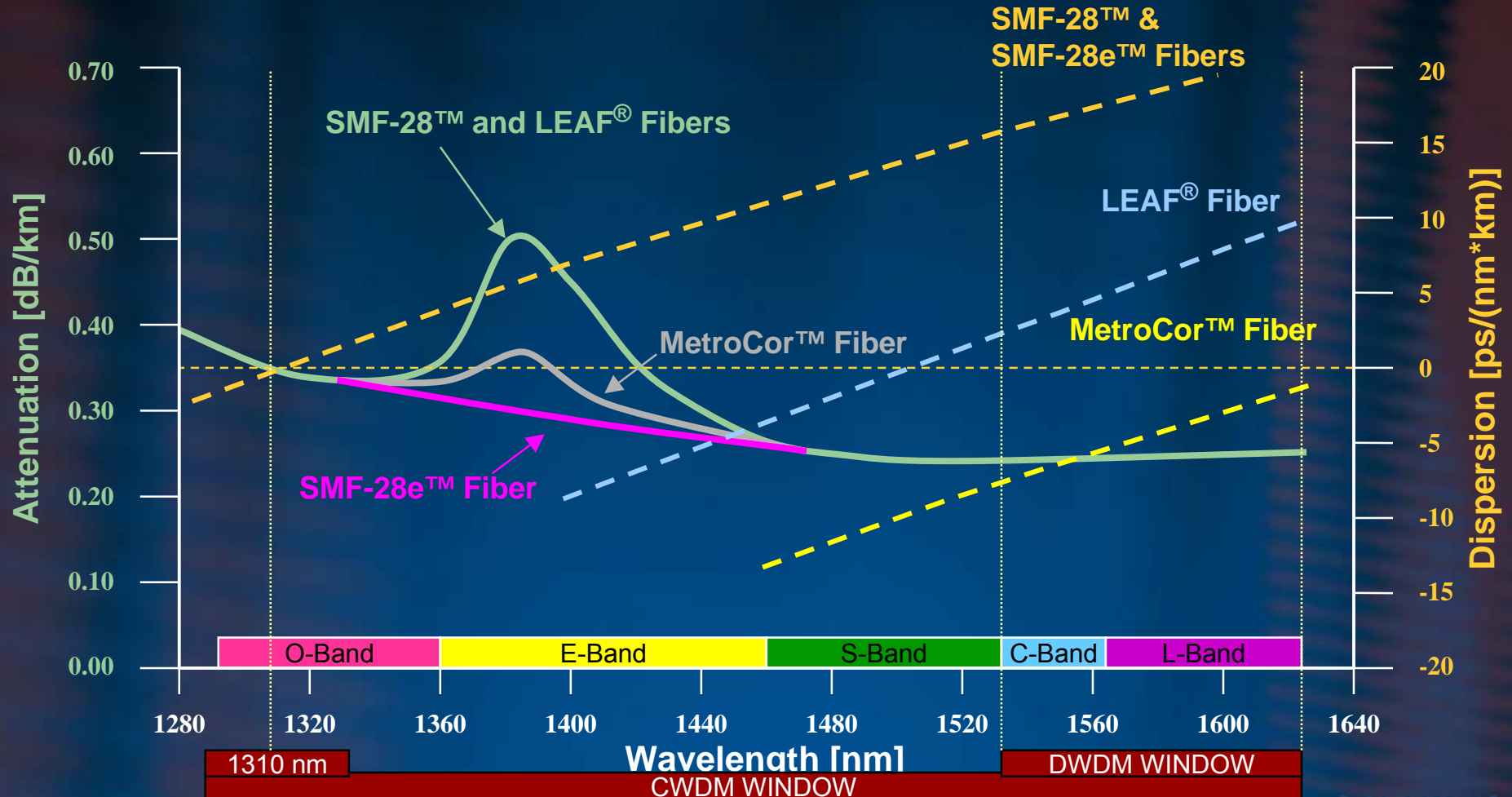


## Proposed Channel Plan (source CIG)

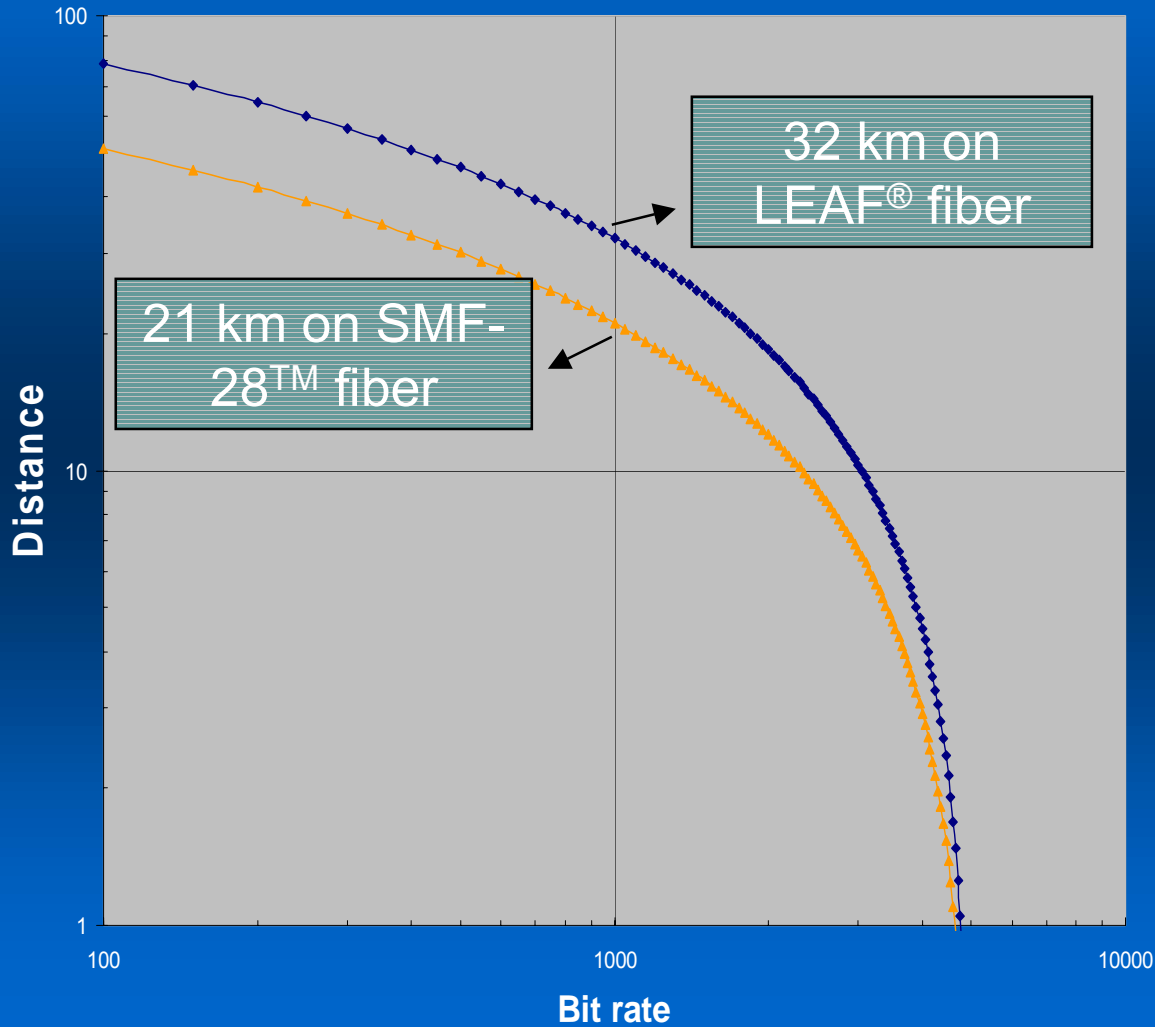




# Corning® Single-Mode Fibers



# Baseband System Performance



Fixed losses of 20 dB

1.5 dBm laser

$\Delta\lambda = 2.8 \text{ nm}$

$k = .5$

Rx sensitivity = -26 dBm

◆ 1490 FP  
▲ 1310 FP





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