

## Eye Diagram for a System of Highly Mode Coupled PMD/PDL Fiber

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**Abstract :** To evaluate the optical eye diagram due to polarization-mode dispersion (PMD), polarization-dependent loss (PDL), and chromatic dispersion (CD) for a system of highly mode coupled fiber with lumped section at any given optical pulse sequence we present an analytical model. We found that with considering PDL and the polarization direction correlation between PMD and PDL, a system with highly mode coupled fiber with lumped section can have either higher or lower Q-factor than a highly mode coupled system with same root mean square PDL/PMD values. Also we noticed that a system of two highly mode coupled fibers connected together is not equivalent to a system of highly mode coupled fiber when fluctuation is considered

**Keywords :** polarization mode dispersion, polarization dependent loss, chromatic dispersion, optical eye diagram

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