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# Efficient employment of VCSEL light sources in high speed dispersion compensation system

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## Abstract

This paper demonstrated the efficient employment of vertical cavity surface emitting laser (VCSEL) light sources in high speed dispersion compensation systems. VCSEL are compared with CW laser and distributed feedback laser in the modulated light output power, signal quality factor and minimum data error rates through the fiber system. Light signal base band modulated power is clarified with spectral frequencies after LiNb MZ modulators. Light signal base band modulated amplitude is simulated against base band time frequencies after LiNb MZ modulators. The total light signal index base band modulated power/amplitude value is estimated after LiNb MZ modulators for various light sources. The light signal base band modulated power is demonstrated with both spectral frequencies and time interval after fiber loop control length with compensation system. Total light signal index base band modulated power/amplitude value is estimated numerically after fiber loop control length with compensation system. The modulated electronic signal base band modulated power is indicated with spectral frequencies after PIN receiver. The light signal base band modulated amplitude is studied clearly against base band time frequencies after PIN receiver. The signal quality factor, BER, and modulated lighted output power are clarified and sketched against fiber system lengths for various light sources.

**Keywords:** [dispersion compensation](#); [fiber system](#); [laser modulation](#); [modulated signal](#)

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