

Attribute	Noncoherent		Differential		Coherent
Maximum number of degrees of freedom (per polarization)	1 (magnitude)		1 (phase)		2 (two quadrature components)
Receiver sensitivity for binary	38 photons/bit (2-PAM)		20 photons/bit (2-DPSK)		18 photons/bit (2-PSK)
Receiver sensitivity for quaternary	134 photons/bit (4-PAM)		31 photons/bit (4-DPSK)		18 photons/bit (4-PSK)
	Heterodyne / Homodyne	Direct Detection	Heterodyne / Homodyne	Direct Detection	Heterodyne / Homodyne
Electrical filtering can be used to select channel (enables frequency-agile receiver)	Yes	No	Yes	No	Yes
Chromatic dispersion is linear distortion (enables effective electrical compensation)	Yes	No	Yes	No	Yes
Local oscillator laser required at receiver	Yes	No	Yes	No	Yes
Polarization control or diversity required at receiver	Yes	No	Yes	No	Yes