


fabry-perot etalons

Fabry-Perot etalons are made up of two parallel partially reflecting mirrors facing each other. The interference created by the mirrors acts as a filter which transmit only a series of resonance peaks evenly distanced in frequency domain. The distance between mirrors defines the distance between peaks in frequency domain, while mirrors reflectivity define peaks width. High quality polishing ($\lambda/20$) and excellent parallelism (< 1 arcsec) ensure high finesse and transmission characteristics.

To produce air gap etalon, one needs to use a frame to support the mirrors at both ends of the air gap. In order to achieve high thermal and mechanical stability, we use a glass with low thermal expansion coefficient, i.e., Zerodur® as spacer material. Air spaced etalons are easier to customize than solid glass etalons. The mirrors from the same coating batch can be used for any air-gap, while the distance between mirrors is adjusted by changing holder length. To avoid back-reflection, the other side of the mirror glass plate can be polished with a small wedge angle. Solid etalons are made from a piece of glass of exact thickness which is coated on both sides with partially reflecting coating. Their sensitivity to temperature variation can be used to tune the etalon within an environment with controlled temperature. Fabry-Perot etalons are in common use in telecom systems as narrow band filters to lock a laser cavity on a fixed frequency or as a frequency reference comb according to ITU grid. Doric Lenses Inc. etalons are also used in divers applications such as astronomy, optical transport, optical sensing and others.

WEBCODE:	D104-xxx	
DRAWING		
		
SPECIFICATIONS	SYMBOL	VALUE
Operation Wavelength	λ_0	1550 nm
Height	H	17 mm
Width	W	14 mm
Length	L	80 mm
Free Spectral Range	FSR	7.5 GHz - 15 GHz - 50 GHz
Finesse		4 - 10
Cavity type		A : air space with Zerodur spacer B : solid fused silica etalon
Insertion Loss	I.L.	< 2.0 dB
Operating Temperature		15 to 40°C
Storage Temperature		-20 to 85°C
NOTE		All specifications are customized upon request