

# Optical Material Cadmium Manganese Mercury Telluride (CdMnHgTe) Magneto Optical Crystals

The quaternary compound Cadmium Manganese Mercury Telluride ("CMHT") is a magneto-optical material that can be tuned to vary the energy gap and the lattice constant independently. The properties of this magneto-optical material are dependent upon the actual composition. This material is under development at ICL and is not yet available for sale. The data below is based upon the composition  $\text{Cd}_{0.325} \text{Mn}_{0.425} \text{Hg}_{0.25} \text{Te}$ .

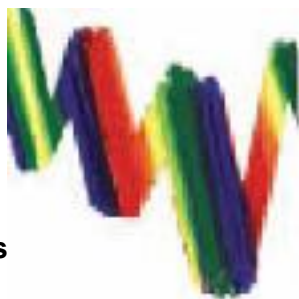
CMHT has a huge Verdet constant. Potential applications for this material (as well as CdMnTe) include Faraday rotation devices (optical isolators), LEDs, lasers, electromagnetic interference free devices, field tunable phase shifters, small coupled solar cells for fly-by-light applications, phased array radar with completely fiber-fed antennae, bomb detonators, harsh environment sensors. The tenability of CMHT makes it possible to integrate CMHT with electronic devices based upon III-V compounds.

## Optical Properties - Cadmium Manganese Mercury Telluride (CdMnHgTe) Magneto Optical Crystals

Transmission Range: 750nm to 22  $\mu\text{m}$   
Verdet constant: 0.47min/E\*cm@1064nm, 0.4min/E\*cm@1112nm

## Physical Properties - Cadmium Manganese Mercury Telluride (CdMnHgTe) Magneto Optical Crystals

Structure: cubic, Zink blende  
Melting Point: 702° C +/- 6°



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