

University of Arizona
Diamond Turned Metal Mirror Requirements Review
Federico Pennacchini
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1. Problem Statement

A 190.5 mm f/1.5 primary mirror is to be designed for a Ritchey-Crétien telescope is to be designed to operate in the TIR for military and law enforcement remote sensing.. This telescope system is to be designed to be light-weight for mounting in a surveillance helicopter, plane, or UAV.

2. Optical Requirements

Clear Aperture	190.5 mm
EFL	285.75 mm
Surface Roughness	100 Å
Operating Range	8-12 μm
Reflectance	> 90%
Surface	1/12λ RMS @ 8 μm
Conic Constant	K < -1

3. Mechanical Requirements

Elevation Travel	0-90°
Azumthul Travel	0-360°

4. Environmental Requirements

Operating Temperature Range	-20--35 °C
Operating Pressure Range	270-760 mmHg
Operating Humidity Range	0-100%
Operating Altitude	0-25,000 feet