

# Large aperture transmission window

## Background

NASA desires to procure a large aperture transmission window to be used in a mobile laser remote sensing experiment. The window will permit a 0.6m aperture telescope to observe the sky. The window may be subject to various weather conditions such as rain and falling debris.

## Physical Specifications

Diameter: 26.25"

Clear Aperture : 25" minimum

Thickness: sufficient to meet the optical transmission requirements

Central hole: 6"

Corning 7980 fused silica or equivalent

Grade "A" bubble class 1 or equivalent

## Optical Transmission requirements

The distortion of a transmitted plane parallel beam shall be no more than  $\pm 25$  microradians from purely parallel. It is possible, but the manufacturer should confirm and demonstrate, that the following specifications are sufficient to meet these requirements.

Transmission wavefront error:  $\leq 2$  waves P-V @ 633 nm over central 25" clear aperture.

Slope Error: 1 wave/in slope error in wavefront

Plane parallel to  $\leq 30$  arc seconds

## Optical Coating

As options please quote for coating either one or both sides with an anti-reflection coating with the following specs:

$R_{max} < 0.67\%$ ,  $R_{avg} < 0.3\%$  from 350 – 550 nm AOI 0 degrees

## Testing

The manufacturer should verify the transmission properties of the window meet the design requirements and provide documentation of this fact. The window may be tested in a vertical (as opposed to horizontal) configuration if necessary.

## Mounting

For reference a candidate mount is shown:

