1 Scope of Project

This polarizing beamsplitter is to be used in the Prime Focus Imaging Spectrograph on the Southern African Large Telescope (SALT).

2 Physical specifications

The polarizing beamsplitter shall be a mosaic of 9 identical calcite Wollaston beamsplitters, mounted in a customer-supplied holder. (see drawings)

Physical:

Total clear aperture: 183 mm (direction of splitting) 214 mm (perpendicular to splitting)

Mosaic element:

dimensions: 62 x 73 ± 0.1 mm

prism angle: 14.3 ± 0.1°; elements matched to < 1 arcmin (0.5 arcmin goal)

splitting axis Aligned to edges within ± 0.1°; elements matched to < 2 arcmin

Surfaces: 1/4 λ at 630 nm,

wedge < 30 arcsec

< 1 mm 45° bevel

60/40 scratch/dig

Optical:

Crystal axis: ± 0.1° to prism axis

Prism coupling customer-supplied Dow Corning Q2-2037 coupling grease

Internal Transmission: > 65% (320 nm), > 75% (628 nm) (mean over each element)

Coating: All external surfaces shall have reflectivity < 1% for 320 - 900 nm and < 0.5% 360 - 700

3 Documentation Summary

Document Calcite material internal transmission at 320 and 628 nm

Document prism angle of each mosaic element to 0.25 arcmin

Document alignment of mosaic element optic axes after assembly

4 Delivery

Delivery is desired on or before 30 weeks ARO. Please state in itemized Bid List when delivery will be made. Timeliness of delivery may be used in evaluation for bid award. Order will be made between 1 and 15 April, 2003.
Circular retaining pad

RTV in corners to bond optic to holder

0.25
clear aperture 214 x 183