

Titolo/Title: VIM Filter Performance Tables

ESA
VIM Filter Performances
05 Oct. 2007

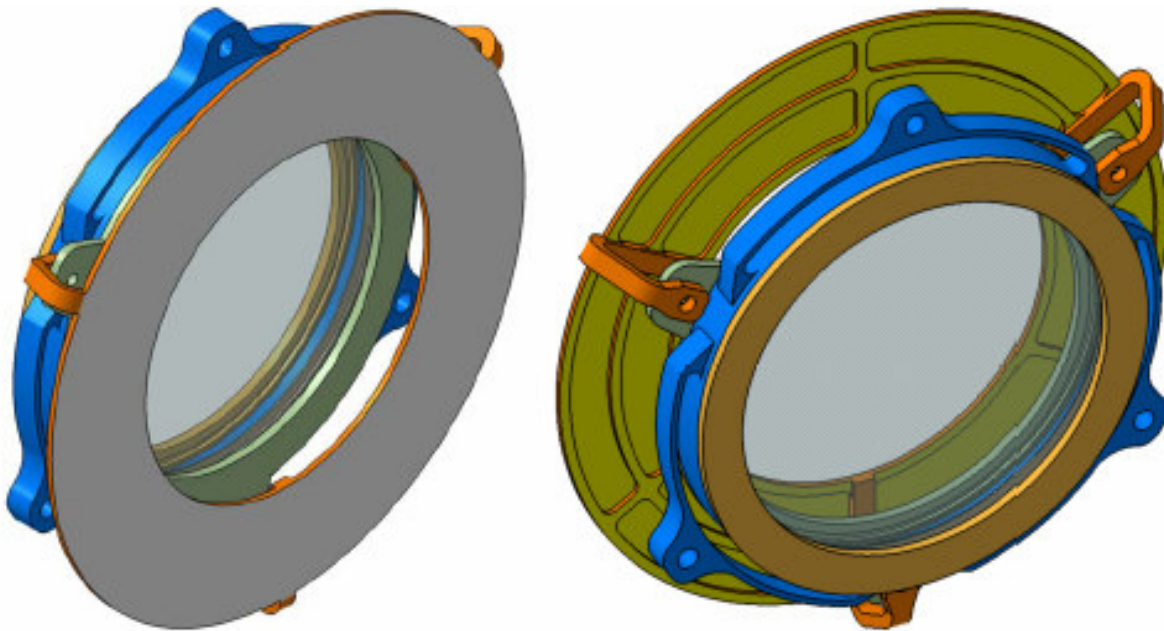
No.	RTI0079
	SEGRETO/SECRET
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PREPARATO/PREPARED	APPROVATO/APPROVED		AUTORIZZATO/AUTHORIZED
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1. FILTER STRUCTURE

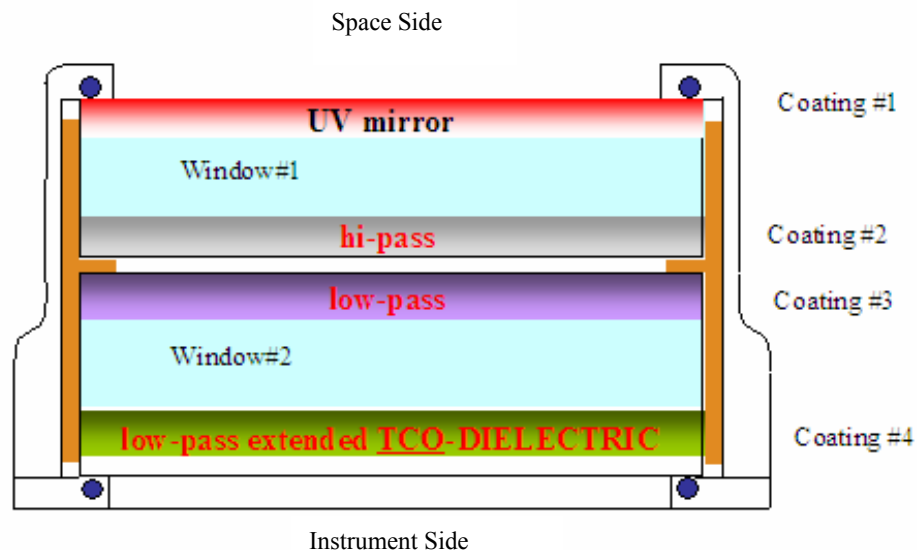
1.1 FILTER CONCEPT

Coating#1 (UV-Mirror or UV-Shield) is applied to reduce the UV absorbance of the substrate by reflecting part of the UV radiation, it also acts as Antireflective coating at the Science Wavelength.

Coating#2 (Hi Pass or Dichroic_1) is a Dichroic coating cutting the radiations at wavelengths lower than the Science wavelength. It represents the left edge of the Band Pass.

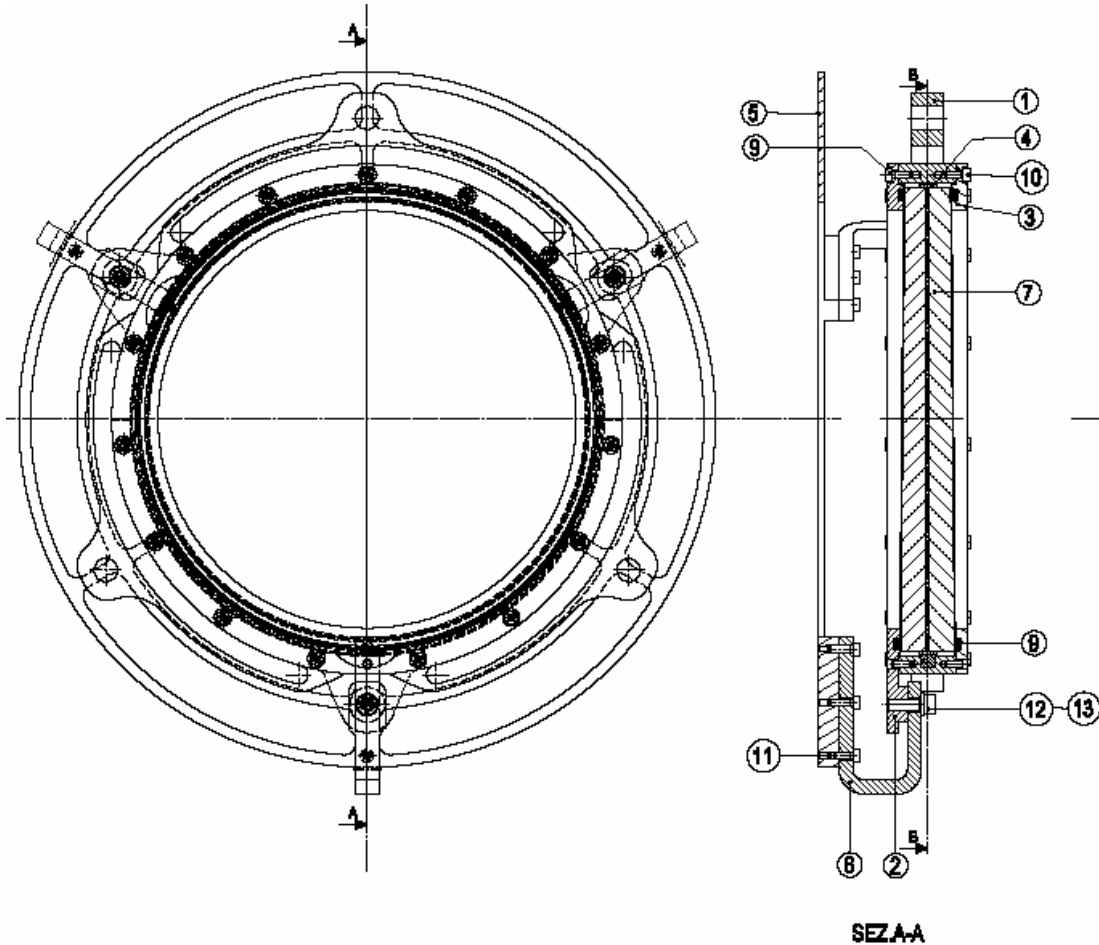
Coating#3 (Low Pass or Dichroic_2) is a Dichroic coating cutting the radiations at wavelengths higher than the Science wavelength. It represents the right edge of the Band Pass.

Coating#4 (Extended Low Pass or IR-Shield) is applied to reject the radiation in the IR range from 900nm to 4300nm.

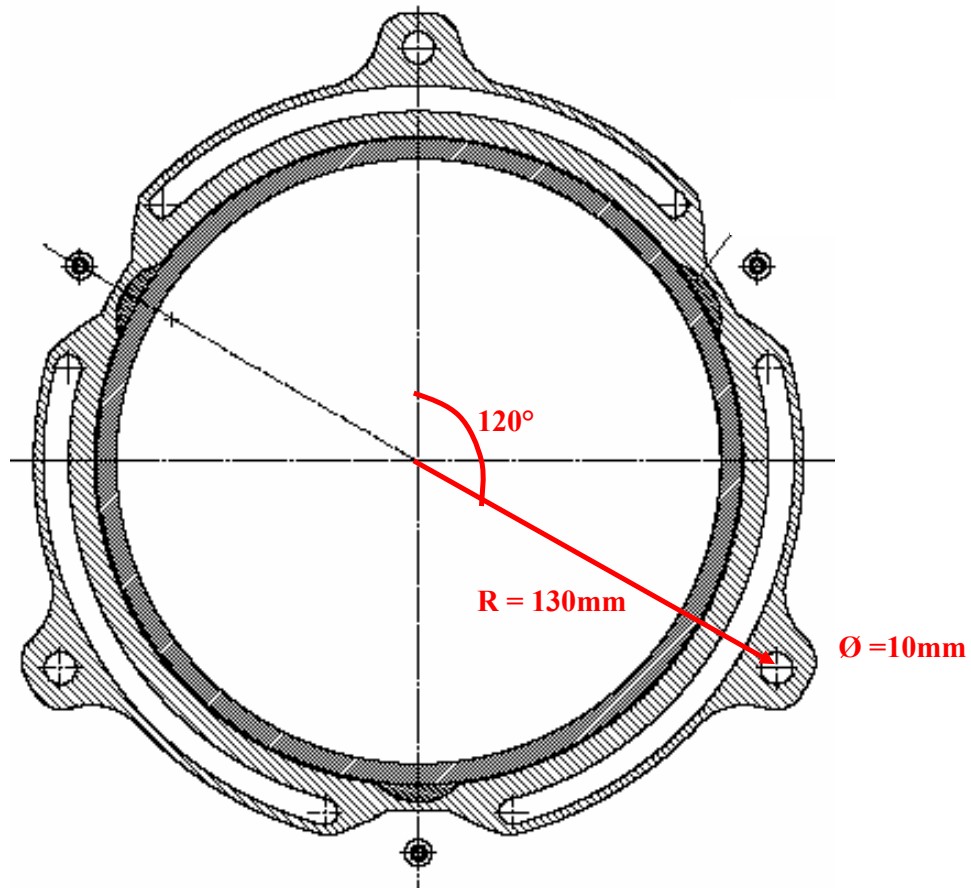


1.2 FILTER MOUNTING STRUCTURE

Id	Description	Material
1	Mounting Ring	Al 6082 T6
2	Closing Flange Space Side	Al 6082 T6
3	Closing Flange Instrument Side	Al 6082 T6
4	Windows Spacer	Al 6082 T6
5	Heat Shield	Ti
6	Heat Shield Holder	Ti
7	Window	Suprasil 300
8	Spacer	Vespel SP-1
9	O-Ring	Silicon Rubber
10÷13	Screws	SS



1.3 INTERFACE DIMENSIONS



2. OPTICAL PERFORMANCES

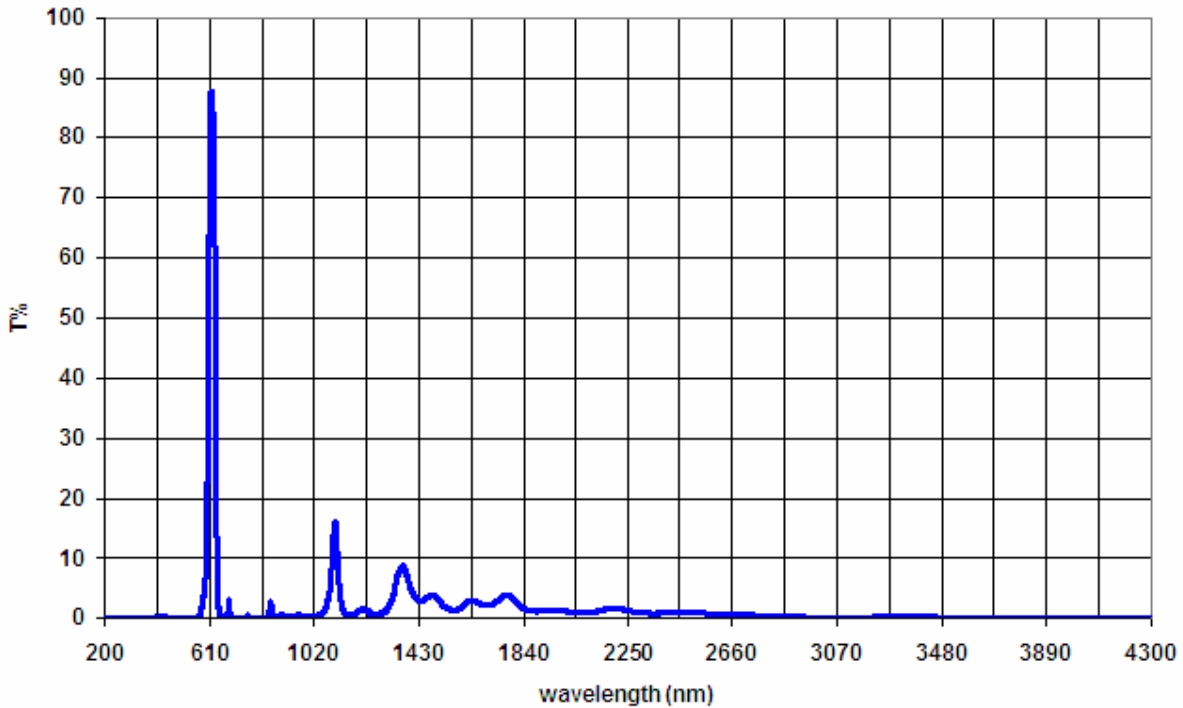
<i>Parameter Description</i>	<i>Range</i>	<i>Requirement</i>	<i>Expected</i>
<i>Transmittance (BoL)</i>	617.3 +/-0.3nm	≥ 80%	87%
<i>Transmittance (EoL)</i>	617.3 +/-0.3n	≥ 80%	≥ 83%
<i>FWHM Band Interval</i>	@ 617nm		25nm
<i>Total Incidence Energy Transmitted (BoL)</i>	200-4300nm	≤ 4.0%	3.95%
<i>Total Incidence Energy Transmitted (EoL)</i>	200-4300nm	≤ 4.0%	< 3.85 %
<i>Total Incidence Energy Reflected</i>	200-2000nm		> 91 %
<i>Total Incidence Energy Absorbed</i>	200-2000nm		< 5 %
<i>Clear Aperture</i>	-	180mm	180mm
<i>Light Phase Variation in Operation</i>	Ø 180mm	≤ +/-1nm	n.a.
<i>Max WFE in Operation</i>	Ø 180mm	≤ 30 nm	n.a.

3. MECHANICAL CHARACTERISTICS

<i>Description</i>	<i>Unit</i>	<i>Value</i>
<i>Distance from Instrument (Baffle Length)</i>	mm	350
<i>Holes Diameter at Interface</i>	mm	10
<i>Filter Max Diameter (no shield)</i>	mm	245
<i>Filter Max Thickness (no shield)</i>	mm	36
<i>Gap between windows</i>	mm	1
<i>O-Ring Material</i>	-	Silicon Rubber
<i>O-Ring Thermal Range (vacuum tight)</i>	°C	-50° ÷ +260°
<i>Filter Weight (no shield)</i>	gr	2700

4. OPTICAL SPECTRA

Filter Transmittance in the range 200-4300nm:



Filter Transmittance in the range 550-700nm:

