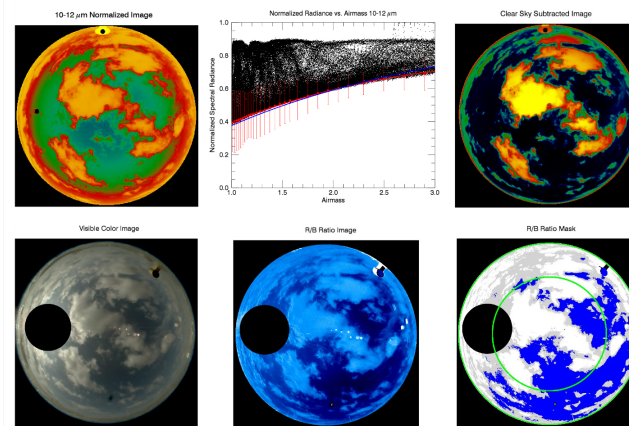


The Solmirus All Sky Infrared Visible Analyzer (ASIVA) is a multi-purpose visible and infrared sky imaging and analysis instrument designed to operate autonomously or as a component in an instrument cluster. The ASIVA is a ground-based cloud detection and sky analysis system with applications ranging from astronomy, to solar forecasting, to a variety of meteorological applications.



- ▶ White Powder-coated Weatherproof Enclosure
- ▶ Ruggedized 180° field of view carbon coated IR lens
- ▶ 640×480 Infrared focal plane array with internal shutter
- ▶ Visible-spectrum CMOS camera 5.0 MP, 22 FPS
- ▶ 10-12 micron filter for optimal sky / cloud contrast
- ▶ Motorized (270° rotation) hatch with integrated hemispherical calibration reference
- ▶ Dual (heated / ambient) external calibration mast with embedded thermal monitoring
- ▶ Enclosure Thermal Management System and internal temperature sensors
- ▶ External humidity sensor
- ▶ Grounding attachment to earth ground
- ▶ Embedded control computer
- ▶ Real-time data analysis pipeline w/web interface
- ▶ Calibration Instrument — for instrument response calibration
- ▶ Customizable measurements & operation (option)
- ▶ Instrument transport case (option)

Infrared Subsystem

The ASIVA's primary functionality is radiometrically calibrated imagery in the mid-infrared (mid-IR) atmospheric window spanning 8–13 μm . A thermal IR imager has the distinct advantage of directly detecting emission from clouds rather than relying on scattered light or obscured starlight — unaffected by the Moon or Sun — providing consistent, reliable sky condition data under a wide variety of conditions.

Visible Subsystem

The ASIVA also includes a highly capable visible subsystem consisting of a **5-megapixel monochrome CMOS detector** coupled with a 180° high-quality fisheye lens designed for water tightness. A protective glass dome is available for full weatherproofing. An optional **8-position filter wheel** for 1-inch filters is available.

Specifications

Connectivity / Cabling

Cable	Media	From	To	Length
Power	Copper	Main Enclosure	VAC	Customer Specified
Remote Comms	Fiber OR Ethernet	Main Enclosure	Network	Variable

Power

Parameter	Value
Primary Input	9A / 125VAC 4.5A / 250VAC
Main Enclosure Connection	Configurable

Physical Construction

Component	Details
Instrument Enclosure	NEMA 4 Stainless Steel — 24"W × 12"D × 26"H (excl. base)
Weight (with case)	~100 kg
Weight (without case)	~80 kg
Instrument Base	Stainless Steel — 24"W × 24"H × 8"H with mounting holes

Measurement & Analysis

Parameter	Value
Primary Measurements	Raw, Calibrated/Actual Radiance, Normalized Radiance, NR vs. Airmass, Clear Sky Subtracted NR, Cloud Mask, Brightness Temperature, Optical Depth
Measurement Cadence	≤ 30 seconds

Operating Temperatures

Component	Operating Range
Instrument Enclosure (Aggregate)	-20 / +55°C (external)
Cooler	-10 / +60°C, -40 / +70°C
Cameras	-15 / +55°C
I/O Module	-40 / +85°C
Motor Controller	-20 / +80°C
Temperature Sensors (External)	-50 / +200°C
Stepper Motor	-20 / +80°C

Instrument Control

Parameter	Value
System Computer	Onboard ruggedized control system
Storage	Temporary data storage — 4TB/option
Interface	Web UI
Access	Complete instrument control, data acquisition, analysis & web database management