



K E O S C I E N T I F I C

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## Keo Scientific *SunShield*



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In low-latitude and equatorial regions, it is important to protect your Keo Scientific airglow imager's primary objective, usually a fish-eye lens, from exposure to solar radiation during daytime. This is especially true when utilizing our ultra-high transmission BK-7 glass hemispheric observing dome. Unless the lens is in shade, the extreme temperatures caused by direct sunlight may result in off-gassing of internal lubricants. This will in turn deposit on internal lens elements, causing fogging and reduced light transmission. Also, the internal blackened surfaces will quickly start to fade, further reducing optical performance (especially image contrast, MTF). The lens will eventually (typically within 3 to 5 years) need repair or replacement.

The primary objective of your Keo Scientific imager falls under the "Normal Wear and Tear Disclaimer" of our standard 3-year Warranty, and damage is thus not covered. It is your (the end-user's) responsibility to protect the lens from exposure to the elements, whether solar radiation or water/moisture. This can be accomplished by designing your own protective mechanism (we will advise, at no charge) or by having personnel cover and uncover the lens (or dome) at dawn and dusk, respectively. The entire dome can be covered by an outside box, or a Mylar blanket can be used inside the dome, shielding the entire lens/shutter/filterwheel assembly from sunlight.

The Keo *SunShield* is a more convenient way of protecting your investment. The Keo *SunShield* features a clamshell shutter design which provides the lens with shade during daytime and opens during nighttime observing hours. It includes a control box with a programmable timer and a computer interface for optional ephemerides-driven remote control.



## Keo SunShield – Features

- Protects Keo *Sentry* airglow imager all-sky lenses from exposure to harmful solar radiation during daytime
- Compatible with all recent Keo Scientific 3 and 4 inch imagers with all-sky (fish-eye) and narrower fields of view
- Clamshell design: fully retracts - *no part of fish-eye field of view is obscured when in the OPEN position*
- When in CLOSED position, a reflective surface reflects sunlight back out of the dome, away from the instrument
- Conveniently bolts onto the Keo *Sentry*'s shutter housing (immediately behind fisheye lens)
- Fail-safe: Defaults to OPEN position (power is needed to maintain it in the CLOSED position)
- Solenoid driven, for high long-term reliability
- Fits under a Keo Scientific 9.25" diameter BK-7 glass dome, and any other dome of larger diameter
- Comes with Control Unit with programmable timer and USB computer interface for optional remote control
- Includes all cables; high-precision Swiss LEMO connectors
- Keo *Synopticx* software integration (by late 2015).

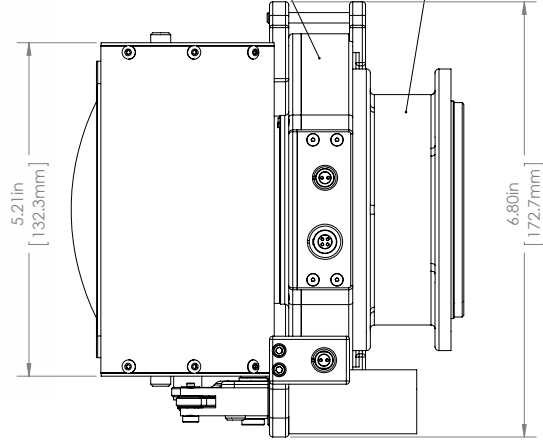
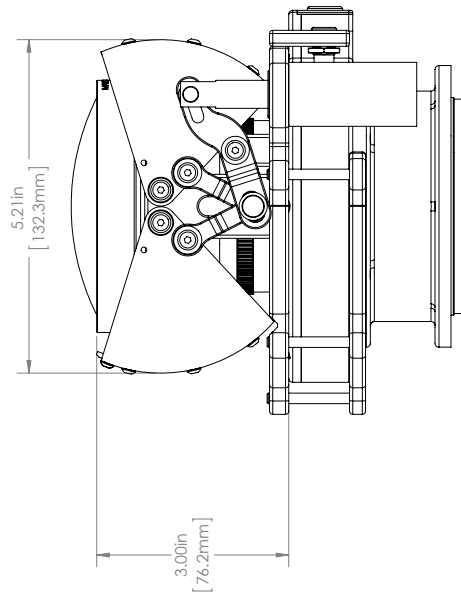
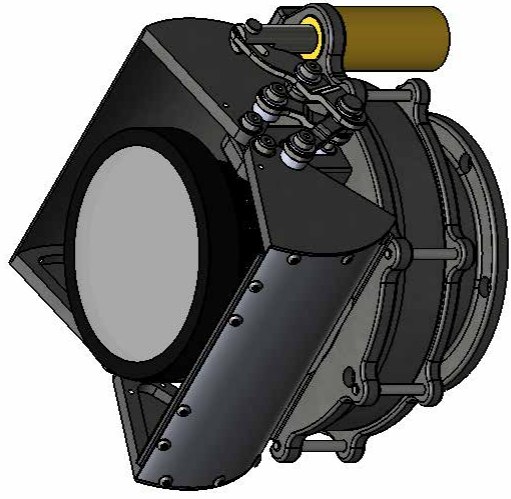
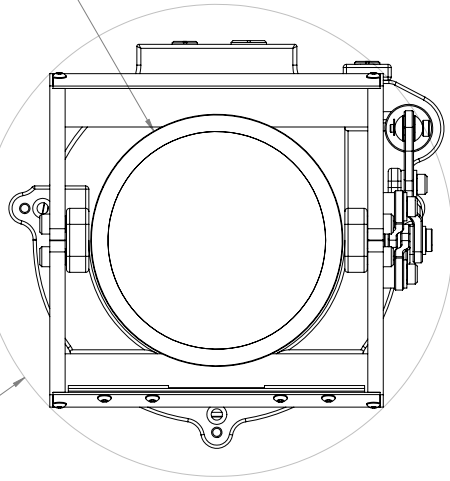


**Keo SunShield**



$\phi 7.38$ in  
 [187.3mm]

$\phi 3.94$ in  
 [100.1mm]  
 ( $\phi 4.40$  MAX)



KEO SENTRY SHUTTER HOUSING

KEO SENTRY3 TELECENTRIC CELL

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FILENAME SunShield Dimensioned  
 PART FILENAME SunShield\_Assembly

MATERIAL

FINISH

- 1.
- 2.
- 3.

PART TO BE LEFT FREE OF BURRS,  
 SHARP EDGES, SHARP CORNERS,  
 AND PROTRUSIONS THAT MAY  
 INTERFERE WITH PERFORMANCE  
 AND ANY OTHER MATTER THAT MAY  
 AFFECT APPEARANCE.

THIRD ANGLE PROJECTION

TOLERANCE UNLESS STATED OTHERWISE

LINEAR: XX = ±.05  
 XXX = ±.005  
 XXXX = ±.0005

ANGULAR: ±.25°

SURFACE FINISH UNLESS  
 STATED OTHERWISE

RA 6.3

DIMENSIONAL LIMITS APPLY  
 AFTER FINISHING

ALL DIMENSIONS IN INCHES UNLESS  
 STATED OTHERWISE

PART NO. 2168  
 SCALE 2:3  
 DRAWN BY D. WYBIT  
 DATE 2013-06-25

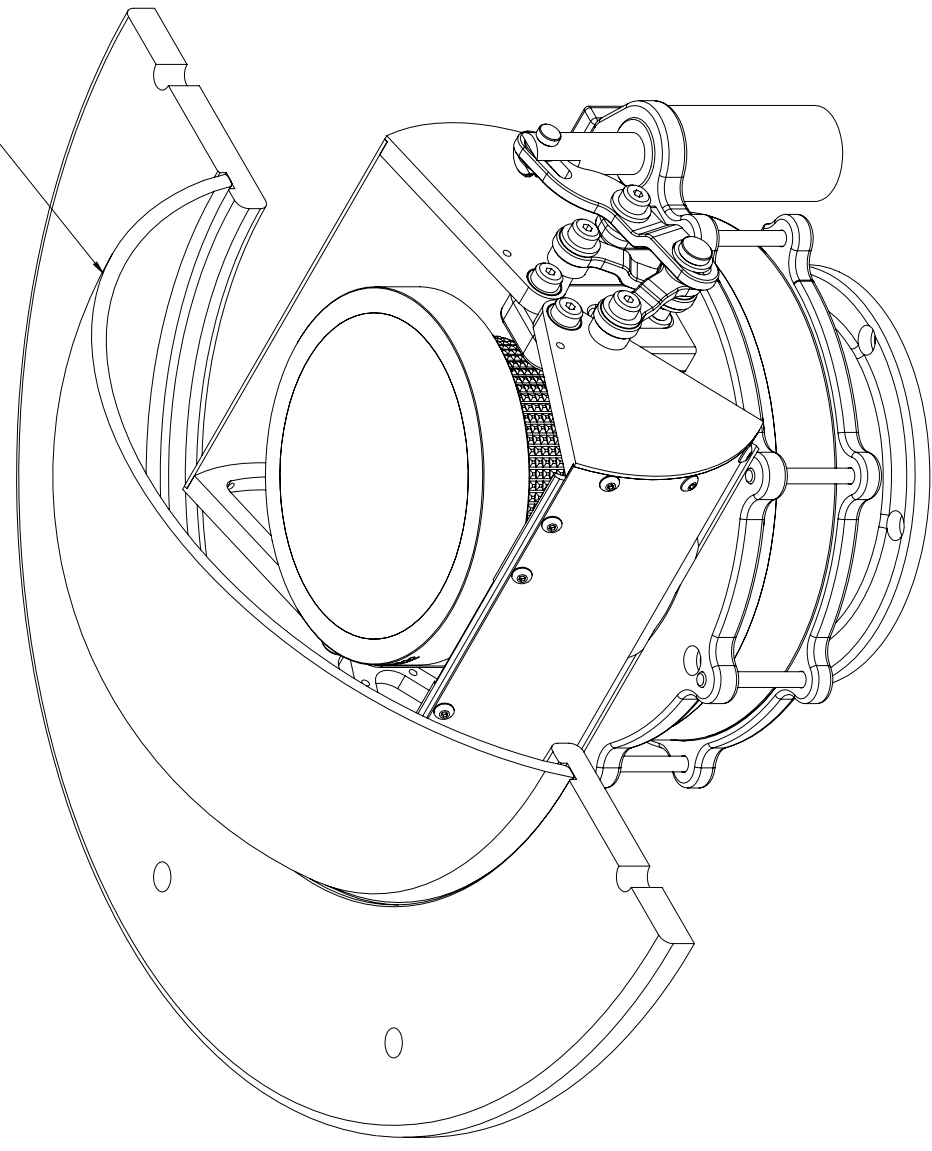
KEOSUNSHIELD, F.L.L.C.

Keo Scientific Ltd.  
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 Calgary, AB, T2R 1B2  
 Tel: (403) 452-7222

Keo SunShield for Sentry3 w/  
 Fov180

REVISION C  
 SIZE C  
 SHEET 1 OF 2

— KEO SCIENTIFIC 9.25" BK7 DOME



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	<p>PART FILENAME  <b>SunShield_Assembly</b></p>	<p>TOLERANCE UNLESS STATED OTHERWISE          XX = ±.05          XXX = ±.005          XXXX = ±.0005</p>	<p>TITLE  <b>Keo SunShield for Sentry3 w/          Fov180</b></p>	<p>DATE          2013-06-25</p>
<p>MATERIAL</p>	<p>FINISH          1. Ra 63          2.          3.</p>	<p>ALL DIMENSIONS IN INCHES UNLESS          STATED OTHERWISE</p>	<p>DRAWN BY          D. WYGIT</p>	<p>SHEET          2 OF 2</p>
<p>DIMENSIONAL LIMITS APPLY          AFTER FINISHING</p>	<p>SCALE          1:1</p>	<p>PART NO.          2168</p>	<p>DATE</p>	<p>SHEET</p>