

**TECHSPEC® 100mm, f/4 Athermal Lens**



Stock #16-849 **1 In Stock**

⊖ 1 ⊕ €1.730<sup>00</sup>

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**General**

**Product Family:**  
Athermal Series

**Type:**  
Fixed Focal Length Lens - Athermal

**Imaging Lens Type:**  
Passive Athermalization and Mechanical Ruggization

**Physical & Mechanical Properties**

Fixed	<b>Iris Option:</b>
94.90	<b>Length (mm):</b>
40.0	<b>Maximum Diameter (mm):</b>
40	<b>Outer Diameter (mm):</b>

## Optical Properties

<b>Field of View at Max Sensor Format:</b>	
Horizontal: 8.01°	
Vertical: 6.03°	
Diagonal: 9.96°	
8.01°	<b>Horizontal Field of View, 1.1" Sensor:</b>
7.30°	<b>Horizontal Field of View, 1" Sensor:</b>
5.04°	<b>Horizontal Field of View, 2/3" Sensor:</b>
4.12°	<b>Horizontal Field of View, 1/1.8" Sensor:</b>
3.67°	<b>Horizontal Field of View, 1/2" Sensor:</b>
19.30	<b>Maximum Image Circle (mm):</b>
0.003	<b>Numerical Aperture NA, Object Side:</b>
7 (3)	<b>Number of Elements (Groups):</b>
100.00	<b>Focal Length FL (mm):</b>
0.000X - 0.026X	<b>Primary Magnification PMAG:</b>
4000 - ∞	<b>Working Distance (mm):</b>
f/4	<b>Aperture (f/#):</b>
10.85	<b>Entrance Pupil Position (mm):</b>
-51.57	<b>Object Space Principal Plane (mm):</b>
-20.08	<b>Image Space Principal Plane (mm):</b>
1.21	<b>Maximum Distortion (%):</b>
-21.381	<b>Exit Pupil Position (mm):</b>
VIS	<b>Lens Wavelength Range:</b>

## Sensor

1.2"	<b>Maximum Sensor Format:</b>
2.74	<b>Pixel Size (µm):</b>

## Threading & Mounting

M35.5 x 0.50 (Female)	<b>Filter Thread:</b>
C-Mount	<b>Mount:</b>

## Environmental & Durability Factors

-10 to +50	<b>Operating Temperature (°C):</b>
Athermal	<b>Type of Ruggedization:</b>

## Regulatory Compliance

<a href="#">View</a>	<b>Certificate of Conformance:</b>
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# Product Details

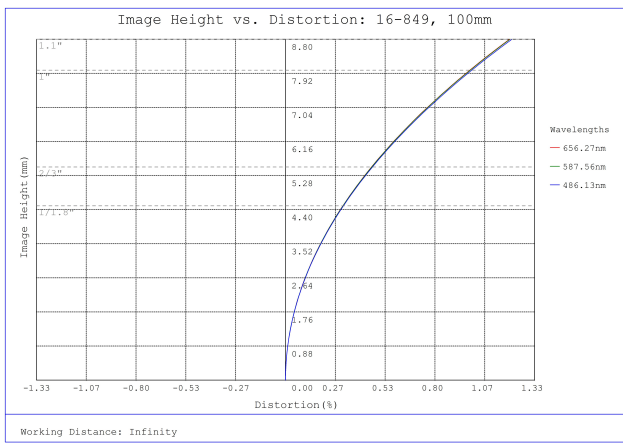
- Designed to Maintain High Resolution Over a Wide Temperature Range
- Ruggedized for Shock and Vibration Environments
- Large Sensor Coverage up to 1.1"
- Optothermal Stability from [Passive Athermalization](#)
- [2022 Silver VSD Innovators Award Winner](#) and 2022 Inspect Award Winner

TECHSPEC® Athermal Imaging Lenses provide optothermal stability in a ruggedized lens housing, making them ideal for harsh environments. These lenses utilize [passive athermalization](#) to mitigate the effects of thermal defocus in applications that are prone to temperature fluctuations. Additionally, these lenses are ruggedized to protect against lens damage and minimize pixel shift after shock and vibration. Along with being ruggedized to protect against lens damage and minimize pixel shift after shock and vibration, these lenses are thermally compensated and best used with camera mounts made from aluminum. TECHSPEC® Athermal Imaging Lenses feature C-Mount threading and full coverage of sensors up to 1.1".

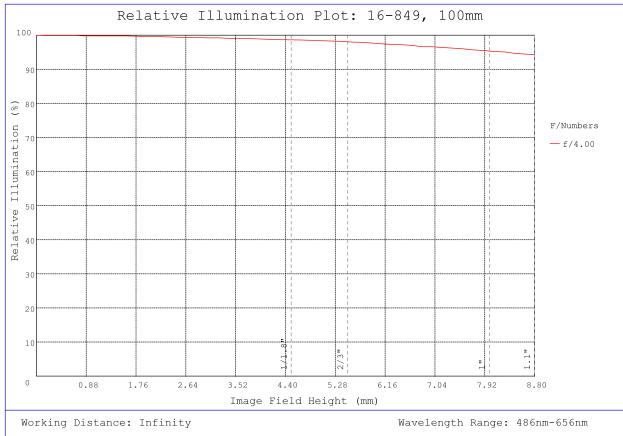
These lenses won the [2022 Silver VSD Innovators Award](#) and the 2022 Inspect Award.

**Note:** Passive Athermalization is introduced in the application note [here](#).

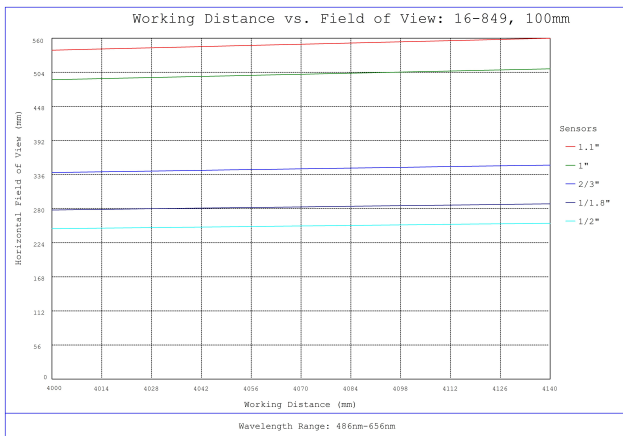
# Technical Information



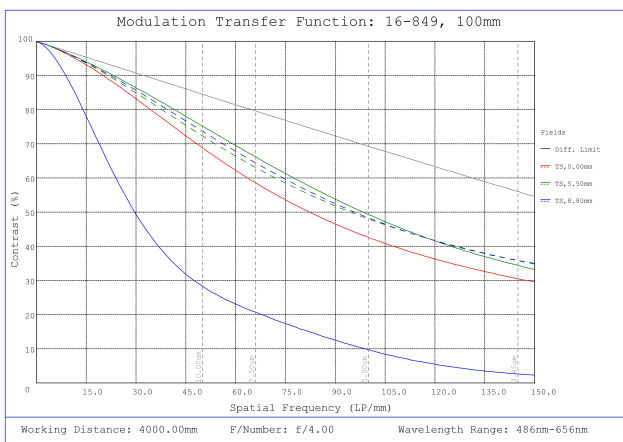
#16-849, 100mm, f/4 Athermal Lens, Distortion Plot



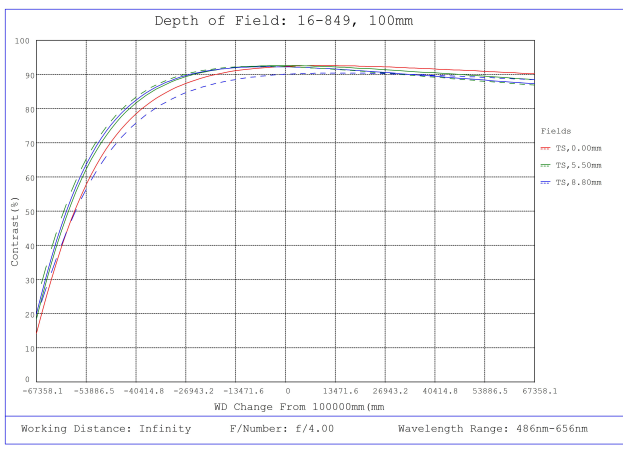
#16-849, 100mm, f/4 Athermal Lens, Relative Illumination Plot



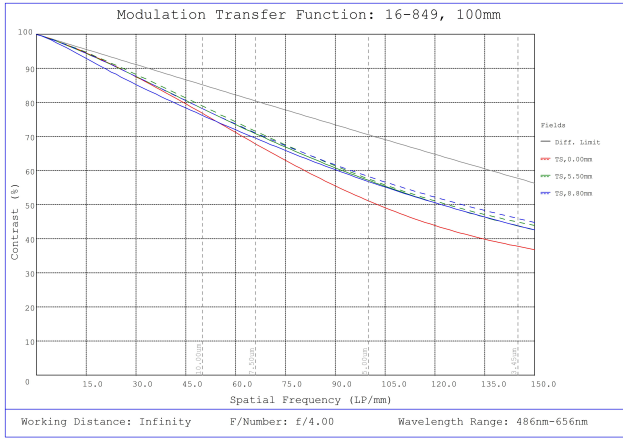
#16-849, 100mm, f/4 Athermal Lens, Working Distance versus Field of View Plot



#16-849, 100mm, f/4 Athermal Lens, Modulated Transfer Function (MTF) Plot, 4000mm Working Distance, f4



#16-849, 100mm, f/4 Athermal Lens, Depth of Field Plot, 100000mm Working Distance, f4



#16-849, 100mm, f/4 Athermal Lens, Modulated Transfer Function (MTF) Plot, Working Distance: Infinity, f4

## Compatible Cameras