

**TECHSPEC® 50mm f/4.0, HPi Series Fixed Focal Length Lens**



50mm HPi Series Fixed Focal Length Lenses

Stock #33-837 **5 In Stock**

- 1 + **\$868.00**

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Qty 1+	<b>\$868.00</b> each
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**General**

HPi Series **Product Family:**  
Fixed Focal Length Lens **Type:**

**Physical & Mechanical Properties**

Fixed **Iris Option:**  
72.58 **Length (mm):**

40 **Maximum Diameter (mm):**

40 **Outer Diameter (mm):**

0 **Maximum Rear Protrusion (mm):**

## Optical Properties

**Horizontal Field of View @ Max Sensor Format:**  
72mm - 19°

**Field of View at Max Sensor Format:**  
Horizontal: 72.3mm - 19.6°  
Vertical: 54mm - 14.8°  
Diagonal: 90.9mm - 24.4°

**Horizontal Field of View, 4/3" Sensor:**  
72mm - 19°

**Horizontal Field of View, 1.2" Sensor:**  
26.6mm - 7.3°

**Horizontal Field of View, 1.1" Sensor:**  
59.3mm - 16.2°

**Horizontal Field of View, 1" Sensor:**  
53.4mm - 14.6°

**Horizontal Field of View, 2/3" Sensor:**  
36.6mm - 10.1°

**Horizontal Field of View, 1/1.8" Sensor:**  
29.9mm - 8.2°

**Horizontal Field of View, 1/2" Sensor:**  
26.6mm - 7.3°

**Horizontal Field of View, 1/2.5" Sensor:**  
24.1mm - 6.6°

**Horizontal Field of View, 1/3" Sensor:**  
19.9mm - 5.5°

**Horizontal Field of View, 1/4" Sensor:**  
14.9mm - 4.1°

21.60 **Maximum Image Circle (mm):**

0.0268 **Numerical Aperture NA, Object Side:**

7 (5) **Number of Elements (Groups):**

50.00 **Focal Length FL (mm):**

200 - ∞ **Working Distance (mm):**

f/4 **Aperture (f/#):**

N4 MgF<sub>2</sub> **Coating:**

N4 MgF<sub>2</sub> **Coating Specification:**

30.94 **Entrance Pupil Position (mm):**

55.37 **Object Space Principal Plane (mm):**

-27.42 **Image Space Principal Plane (mm):**

-0.21 **Maximum Distortion (%):**

-75.19 **Exit Pupil Position (mm):**

200 - ∞ **Optimized Working Distance (mm):**

VIS **Lens Wavelength Range:**

## Sensor

1" **Optimized Sensor Format:**

4/3" **Maximum Sensor Format:**

1.85 **Pixel Size (μm):**

## Threading & Mounting

Filter Thread:  
M37.5 x 0.50 (Female)

Mount:  
C-Mount

## Environmental & Durability Factors

Storage Temperature (°C):  
-20 to +60

Type of Ruggedization:  
Industrial (Fixed Aperture with Simplified Mechanics)

## Regulatory Compliance

Certificate of Conformance:  
[View](#)

## Product Details

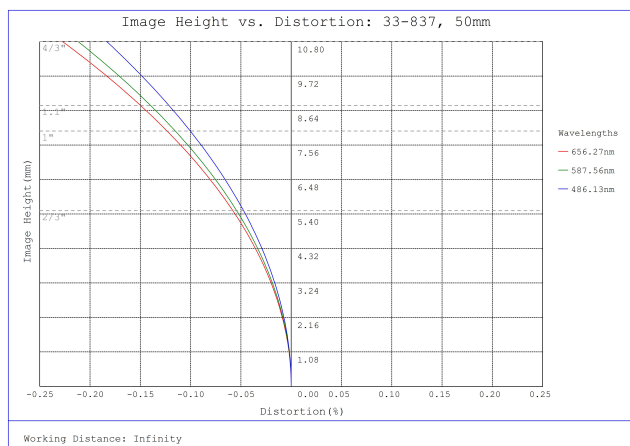
- 1.1", C-Mount Lens
- Up to 20 MegaPixels, 1.85µm Pixel Size Sensors
- Instrumentation (HPI) versions of our HP Series Lenses with Streamlined Mechanical Designs and Fixed Apertures
- 16mm to 50mm Focal Length
- [Ruggedized \(HPr\) Designs](#) Also Available

TECHSPEC® HPI Series Fixed Focal Length Lenses offer the same high resolution performance as the TECHSPEC HP Series Lenses with a streamlined design. The simplified mechanical design enables a more compact size with a reduction in cost and weight, making them ideal for OEM volume applications. Featuring a wide range of fixed aperture versions and an adjustable focus, TECHSPEC HPI Series Fixed Focal Length Lenses offer the ideal combination of simplicity and flexibility required for industrial applications. Call for OEM Quantity Pricing.

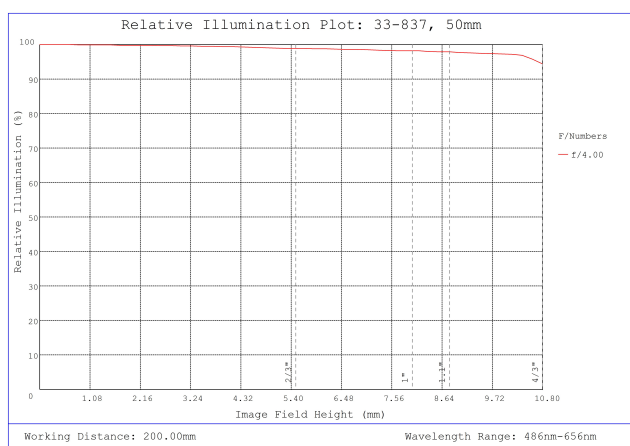
Edmund Optics has created a family of high performance optical designs (the HP Series family) and developed three customized optomechanical solutions targeted for specific applications. These lens sub-families utilize the same optics as the HP Series lenses providing the same optical performance in a variety of optomechanical solutions to meet your application requirements:

- **HP Series:** Features locking cam focus and iris adjustment. This is the most adjustable version of these optical designs and is the typical high quality machine vision lens.
- **HPI Series:** Simplified mechanics featuring fixed apertures with compact housing. [Industrial Ruggedization](#) for reduced size, cost, and locked focus.
- **HPr Series:** All optics glued in place and a locking C-clamp focus ring. [Stabilized Ruggedization](#) for reduced pixel shift and improved focus stability.

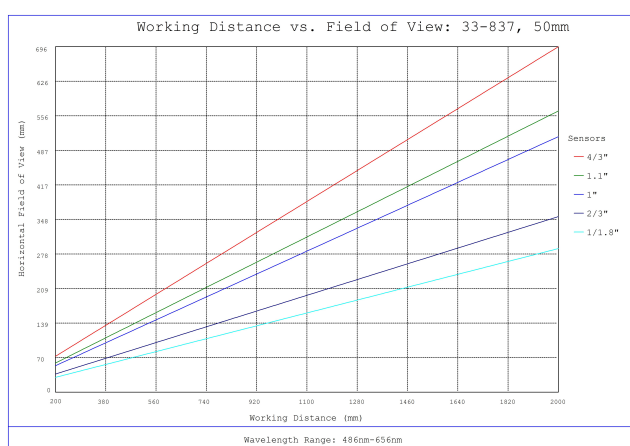
## Technical Information



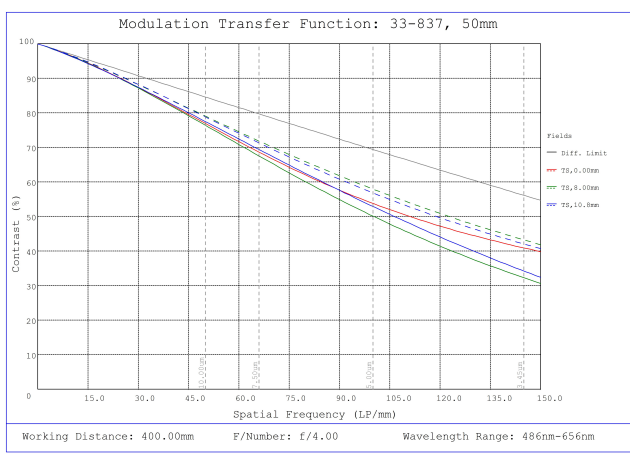
#33-837, 50mm f/4.0, HPI Series Fixed Focal Length Lens, Distortion Plot



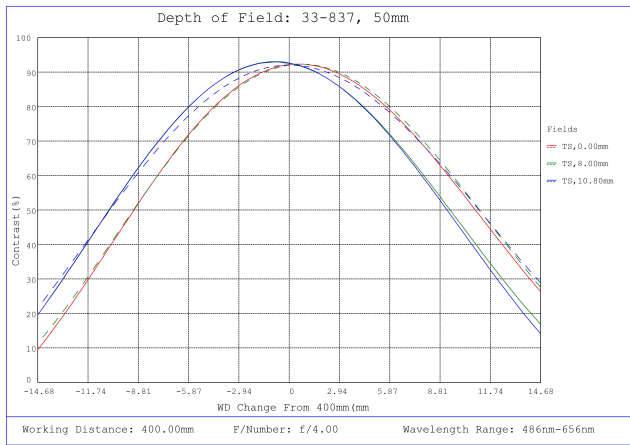
#33-837, 50mm f/4.0, HPI Series Fixed Focal Length Lens, Relative Illumination Plot



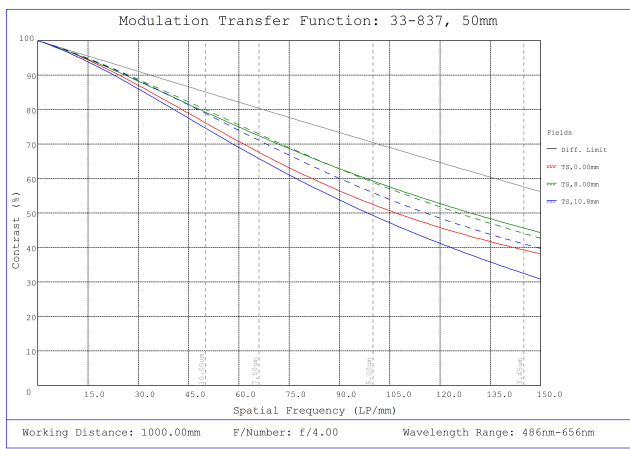
#33-837, 50mm f/4.0, HPI Series Fixed Focal Length Lens, Working Distance versus Field of View Plot



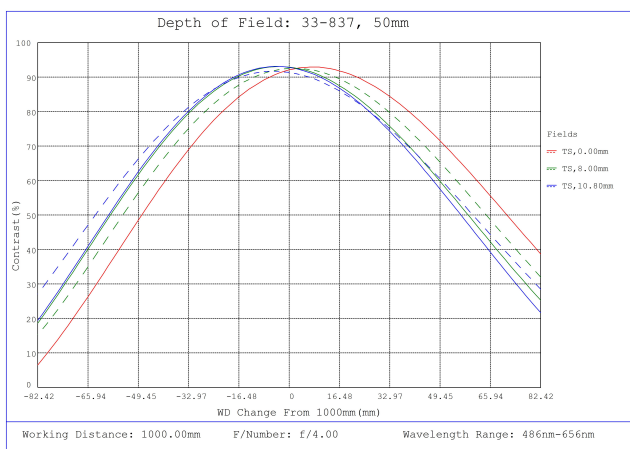
#33-837, 50mm f/4.0, HPI Series Fixed Focal Length Lens, Modulated Transfer Function (MTF) Plot, 400mm Working Distance, f4



#33-837, 50mm f/4.0, HPI Series Fixed Focal Length Lens, Depth of Field Plot, 400mm Working Distance, f4



#33-837, 50mm f/4.0, HPI Series Fixed Focal Length Lens, Modulated Transfer Function (MTF) Plot, 1000mm Working Distance, f4



#33-837, 50mm f/4.0, HPI Series Fixed Focal Length Lens, Depth of Field Plot, 1000mm Working Distance, f4

## Compatible Cameras