

TECHSPEC[®] 50mm f/11, HPr Series Fixed Focal Length Lens



50mm HPr Series Fixed Focal Length Lens

Stock **#36-537** **9 In Stock**

-

1

+

£660⁰⁰

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Volume Pricing	
Qty 1+	£660.00 each
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 Prices shown are exclusive of VAT/local taxes

Product Downloads

General

HPr Series	Series:
Fixed Focal Length Lens	Type:

Physical & Mechanical Properties

Fixed	Iris Option:
	Length (mm):

72.58	
41.74	Maximum Diameter (mm):
41.74	Outer Diameter (mm):
0	Maximum Rear Protrusion (mm):

Optical Properties

72mm - 19°	Horizontal Field of View @ Max Sensor Format:
Horizontal: 72.3mm - 19.6° Vertical: 54mm - 14.8° Diagonal: 90.9mm - 24.4°	Field of View at Max Sensor Format:
72mm - 19°	Horizontal Field of View, 4/3" Sensor:
26.6mm - 7.3°	Horizontal Field of View, 1.2" Sensor:
59.3mm - 16.2°	Horizontal Field of View, 1.1" Sensor:
53.4mm - 14.6°	Horizontal Field of View, 1" Sensor:
36.6mm - 10.1°	Horizontal Field of View, 2/3" Sensor:
29.9mm - 8.2°	Horizontal Field of View, 1/1.8" Sensor:
26.6mm - 7.3°	Horizontal Field of View, 1/2" Sensor:
24.1mm - 6.6°	Horizontal Field of View, 1/2.5" Sensor:
19.9mm - 5.5°	Horizontal Field of View, 1/3" Sensor:
14.9mm - 4.1°	Horizontal Field of View, 1/4" Sensor:
17.60	Maximum Image Circle (mm):
0.0098	Numerical Aperture NA, Object Side:
7 (5)	Number of Elements (Groups):
50.00	Focal Length FL (mm):
200 - ∞	Working Distance (mm):
f/11	Aperture (f/#):
N/4 MgF ₂	Coating:
N/4 MgF ₂	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

M37.5 x 0.50 (Female)

C-Mount

-20 to +60

Storage Temperature (°C):

Type of Ruggedization:

Stabilized (Robust Mechanics for Shock and Vibration)

View

Certificate of Conformance:

- 1.1", C-Mount Lens
- Up to 20 MegaPixels, 1.85µm Pixel Size Sensors
- Ruggedized (HPr) Designs (50g Shock) of our HP Series Lens with Individual Optics Glued in Place
- 16mm to 50mm Focal Length
- [Instrumentation \(HPi\) Versions](#) Also Available

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.
- **HPi Series:** All optics glued in place and a locking C-clamp focus ring. [Stabilized Ruggedization](#) for reduced pixel shift and improved focus stability.

Image Height vs. Distortion: 36-537, 50mm

Working Distance: Infinity

This graph shows the relationship between Image Height (mm) on the Y-axis and Distortion (%) on the X-axis for a 36-537, 50mm lens at infinity working distance. The Y-axis ranges from 1.08 to 10.80 mm, and the X-axis ranges from -0.25 to 0.25%. Three curves are plotted for different wavelengths: 656.27nm (red), 587.56nm (green), and 486.13nm (blue). The curves show that image height decreases as distortion increases, with the 486.13nm curve being the highest and the 656.27nm curve being the lowest. The curves converge at approximately 1.08 mm image height and 0.00% distortion.

Distortion (%)	Image Height (mm) - 656.27nm	Image Height (mm) - 587.56nm	Image Height (mm) - 486.13nm
-0.25	~11.5	~11.5	~11.5
-0.20	~9.5	~9.5	~9.5
-0.15	~8.0	~8.0	~8.0
-0.10	~6.8	~6.8	~6.8
-0.05	~5.8	~5.8	~5.8
0.00	1.08	1.08	1.08
0.05	~1.08	~1.08	~1.08
0.10	~1.08	~1.08	~1.08
0.15	~1.08	~1.08	~1.08
0.20	~1.08	~1.08	~1.08
0.25	~1.08	~1.08	~1.08

Relative Illumination Plot: 36-537, 50mm

Working Distance: 200.00mm

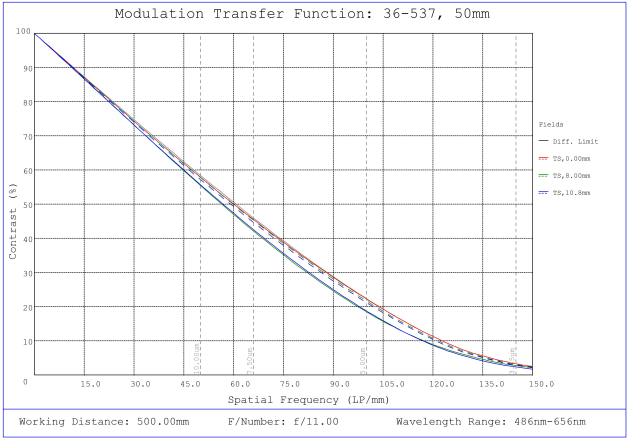
Wavelength Range: 486nm-656nm

Working Distance vs. Field of View: 36-537, 50mm

Wavelength Range: 486nm-656nm

Working Distance (mm)	4/3"	1.1"	1"	2/3"	1/1.8"
0	0	0	0	0	0
850	230	150	120	90	60
1700	460	300	240	180	120
2550	690	450	360	270	180
3400	920	600	480	360	240
4250	1150	750	600	450	300
5100	1380	900	720	540	360
5950	1610	1050	840	630	420
6800	1840	1200	960	720	480

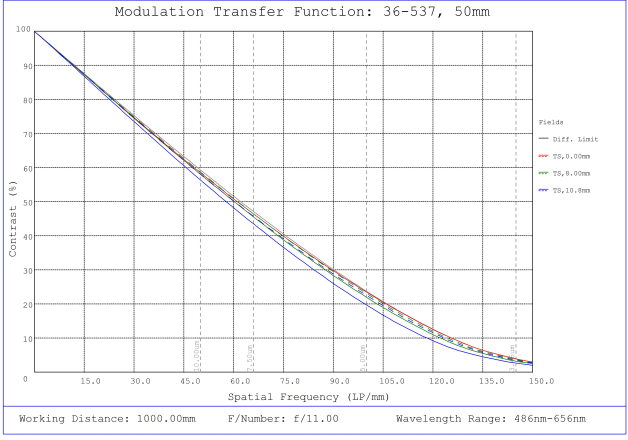
#36-537, 50mm f/11, HPr Series Fixed Focal Length Lens, Working Distance versus Field of View Plot



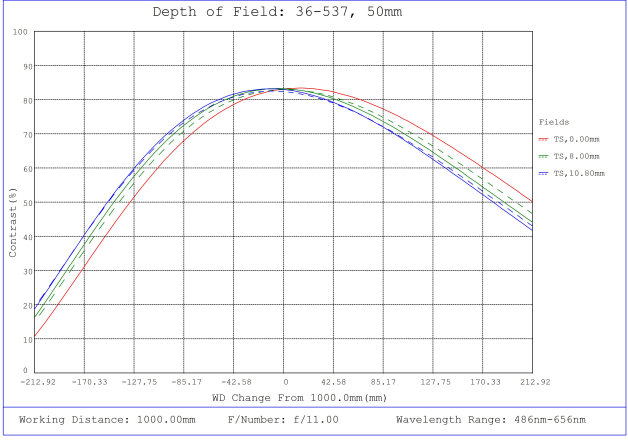
#36-537, 50mm f/11, HPr Series Fixed Focal Length Lens, Modulated Transfer Function (MTF) Plot, 500mm Working Distance, f11



#36-537, 50mm f/11, HPr Series Fixed Focal Length Lens, Depth of Field Plot, 500mm Working Distance, f11



#36-537, 50mm f/11, HPr Series Fixed Focal Length Lens, Modulated Transfer Function (MTF) Plot, 1000mm Working Distance, f11



#36-537, 50mm f/11, HPr Series Fixed Focal Length Lens, Depth of Field Plot, 1000mm Working Distance, f11

Compatible Cameras