

TZM015120 Series 0.15-1.20X Monocular Zoom Objective (MZO)



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1 The Basic Characteristic of TZM015120 Series MZO

1.1 Introduction of TZM015120 Series MZO

TZM015120 series MZO (Monocular Zoom Objective) is an ideal choice for machine vision, industrial inspection, scientific research and education. The design is based on the bilateral parallel light path principle and the modular design concept, with superior optical performance and strong compatibility.



Figure 1 TZM015120 with different module

1.2 The Basic Characteristics of TZM015120 Series MZO

The basic module of **TZM015120** series monocular zoom object is **TZM015120-W4100-TV4100-A50**. Its main features are shown below:

- With 0.15X~1.20X zoom range, 8X zoom ratio
- Larger NA: 0.008-0.046 (When using 1.00x **Auxiliary Lens**)
- Higher resolution: 33.1um-5.9um (When using 1.00x **Auxiliary Lens**)
- Larger sensor size: 2/3" (When using 1.00x **TV Lens**)
- Working distance range: 130mm (When using 1.00x **Auxiliary Lens**)
- With adjustable BFL, parfocal in zoom range
- With adjustable center, the image center remains unchanged from 1.20x to 0.15x
- Compact size: 164 mm (Length) × 40 mm (Diameter)
- **Auxiliary Lens** with 1.00x magnification (Customizable)
- **TV Lens** with 1.00x magnification (Customizable)
- Brightness adjustable **LED Direct Ring Light** (Optional)
- **LED Transmissive Light** (Optional)
- 45mm or 50mm **Bracket Adapter** (Optional)

1.3 The Optical Specifications of TZM015120

The optical specifications of TZM015120 are shown in Table 1.

Table 1 TZM015120-W4100-TV4100

Model	WD/mm	PMAG	NA	Camera Size	FOV/mm	Resolution/um
TZM015120-W4100-TV4100	130	0.15x-1.20x	0.008-0.046	1/3"	5.0-40.0	33.1-5.9
				1/2"	6.7-53.3	33.1-5.9
				2/3"	9.2-73.0	33.1-5.9

WD: Working Distance;

PMAG: Primary Magnification;

FOV: Field of View in the object side;

NA: Numerical Aperture;

1.4 The Dimension of TZM015120 Series MZO

The dimension of TZM015120-W4100-TV4100 are shown in Figure 2.

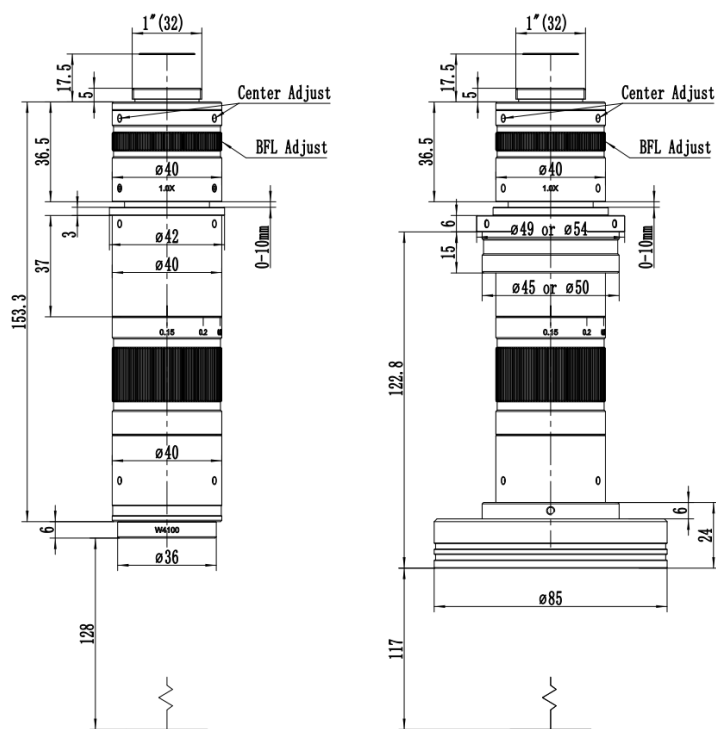


Figure 2 Dimension of TZM015120-W4100-TV4100 (Left)

Dimension of TZM015120-W4100-TV4100-A50+TZM0756DRL-85 light (Right)

2 The Connection of TZM015120 Series MZO and Camera



Figure 3 TZM015120-W4100- TV4100+TZM0756DRL-85+HDMI Camera+TPS-210A+SCRN

3 Pictures Taken with TZM015120 Series MZO



Figure 4 Images of ruler taken with TZM015120-W4100-TV4100 under LED Direct Ring Light illumination
left) 0.15X, middle) 0.6X, right) 1.2X

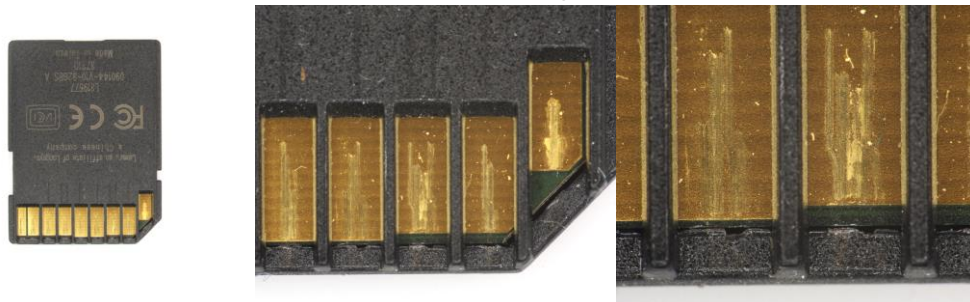


Figure 5 Images of SD Card taken with TZM015120-W4100-TV4100
left) 0.15X, middle) 0.6X, right) 1.2X

4 TZM015120 Series MZO Packing List

The packing information of the [TZM015120](#) series MZO is as follows:



Figure 6 The TZM015120 Main Body, including Auxiliary Lens Module, Middle Zoom Module, TV Lens, Camera Adapter Tube and Bracket Adapter

The packing information of [TZM0756DRL-85](#) is as follows:



Figure 7 TZM0756DRL-85, including LED Direct Ring Light and Power Adapter

5 Order List of TZM015120 Series MZO

TZM015120 Order List of Other Accessories

Module	Order number	Quantity	Remarks	Description
Auxiliary Lens Module	W4100			1.0X Object Lens
TV Lens	TV4100			For 2/3" Sensor
Bracket Adapter	A45			45mm Bracket Adapter
	A50			50mm Bracket Adapter
LED Direct Ring Light Module	TZM0756DRL-85			LED Direct Ring Light (85mm outer diameter)
Transmissive Light Module	TZM0756TL			LED Transmissive Light
Power of light source	40600014			POWER-U-12V1A(MSA-C1000IC12.0-12H-US), Power Adapter American Standard
	40600015			POWER-E-12V1A(MSA-C1000IC12.0-12W-DE), Power Adapter European standard

TzM015120 Function Module Optional Order List

Module	Order number	Quantity	Remarks	Description
Middle Zoom Module	TzM015120			Ordinary Middle Zoom Module
	TzM015120D			Middle Zoom Module with detent
Auxiliary Lens Module	W4100			1.0X Object Lens
TV Lens	TV4100			For 2/3" Sensor
Bracket Adapter	A45			45mm Bracket Adapter
	A50			50mm Bracket Adapter
LED Direct Ring Light Module	TzM0756DRL-85			LED Direct Ring Light (85mm outer diameter)
Transmissive Light Module	TzM0756TL			LED Transmissive Light
Power of Light Source	40600014			POWER-U-12V1A(American Standard)
	40600015			POWER-E-12V1A(European standard)

6 Service

For customers who purchase MZO from local dealer, please contact your dealer for more information.

For technical support, please contact e-mail address: tphz@touptek.com.