



MID-RANGE FOCUS OPTIMIZER 1 (MFO-1)
FOCUS RANGE TO 12.5CM-114CM WITH FULL FRAME NIKON 105MM

	CAMERA LENS	GEAR	PORT ADAPTOR / EXTENSION RING	EXTENSION RING / PORT CONVERTER	PORT	MOUNT CONVERTER	WET LENS	OPTICAL PERFORMANCE
N120 CINEMA SYSTEM EF & RF-MOUNT (RED, CANON, PANASONIC, S-CAM, BLACKMAGIC)	MACRO FULL FRAME							
	Canon EF 100mm f/2.8L Macro IS USM	19523 C100S-F			18703 Macro Port 94	SMC/CMC Option 1 - M67 Thread 81228 M67 Spacer Ring for SMC/CMC (included in all SMC/CMC packaging) SMC/CMC Option 2 - Bayonet Mount 83250 + 83214 M67 to Bayonet Mount Converter II + Bayonet Mount Adaptor for SMC/CMC	81501 MFO-1	On both APS-C & Full Frame Sensor Max. Magnification 1.2X Working Distance 103-1072mm
N120 CINEMA SYSTEM Z-MOUNT (RED, OMRON, V4, V6, V8, V10, V12)	MACRO FULL FRAME							
	Canon RF 100mm f/2.8L Macro IS USM	19575 CRF100-F * please contact us if SA control is needed			18703 Macro Port 94	SMC/CMC Option 1 - M67 Thread 81228 M67 Spacer Ring for SMC/CMC (included in all SMC/CMC packaging) SMC/CMC Option 2 - Bayonet Mount 83250 + 83214 M67 to Bayonet Mount Converter II + Bayonet Mount Adaptor for SMC/CMC	81501 MFO-1	On both APS-C & Full Frame Sensor Max. Magnification 1.6X Working Distance 56-1072mm
N120 CANON SYSTEM Z-MOUNT (RED, OMRON, V4, V6, V8, V10, V12)	MACRO FULL FRAME							
	Nikon AF-S Micro NIKKOR 60mm f/2.8G ED with Nikon FTZ II mount adaptor	TBD Gear set			18701 Macro Port 60	SMC/CMC Option 1 - M67 Thread 81228 M67 Spacer Ring for SMC/CMC (included in all SMC/CMC packaging) SMC/CMC Option 2 - Bayonet Mount 83250 + 83214 M67 to Bayonet Mount Converter II + Bayonet Mount Adaptor for SMC/CMC	81501 MFO-1	On both APS-C & Full Frame Sensor Max. Magnification 1.1X Working Distance 12-1120mm
N120 CANON SYSTEM Z-MOUNT (RED, OMRON, V4, V6, V8, V10, V12)	MACRO FULL FRAME							
	Nikon Z MC 105mm f/2.8 VR S Macro	TBD Gear set			18708 Macro Port 80	SMC/CMC Option 1 - M67 Thread 81228 M67 Spacer Ring for SMC/CMC (included in all SMC/CMC packaging) SMC/CMC Option 2 - Bayonet Mount 83250 + 83214 M67 to Bayonet Mount Converter II + Bayonet Mount Adaptor for SMC/CMC	81501 MFO-1	On both APS-C & Full Frame Sensor Max. Magnification 1.1X Working Distance 108-1005mm
N120 NIKON F-MOUNT	MACRO FX							
	Nikon AF-S Micro NIKKOR 60mm f/2.8G ED	19121 N60S-F			18701 Macro Port 60	SMC/CMC Option 1 - M67 Thread 81228 M67 Spacer Ring for SMC/CMC (included in all SMC/CMC packaging) SMC/CMC Option 2 - Bayonet Mount 83250 + 83214 M67 to Bayonet Mount Converter II + Bayonet Mount Adaptor for SMC/CMC	81501 MFO-1	Max. Magnification 1.1X Working Distance 12-1120mm
N120 NIKON F-MOUNT	MACRO FX							
	Nikon AF-S VR Micro-NIKKOR 105mm f/2.8G IF-ED	19122 N105VR-F			18702 Macro Port 87	SMC/CMC Option 1 - M67 Thread 81228 M67 Spacer Ring for SMC/CMC (included in all SMC/CMC packaging) SMC/CMC Option 2 - Bayonet Mount 83250 + 83214 M67 to Bayonet Mount Converter II + Bayonet Mount Adaptor for SMC/CMC	81501 MFO-1	Max. Magnification 1.2X Working Distance 125-1080mm
N120 NIKON Z-MOUNT (Z7II / Z8 / Z9)	MACRO FX							
	Nikkor Z MC 105mm f/2.8 VR S Macro	19161 (V1) N2105VR-F (V1)			18708 Macro Port 80	SMC/CMC Option 1 - M67 Thread 81228 M67 Spacer Ring for SMC/CMC (included in all SMC/CMC packaging) SMC/CMC Option 2 - Bayonet Mount 83250 + 83214 M67 to Bayonet Mount Converter II + Bayonet Mount Adaptor for SMC/CMC	81501 MFO-1	Max. Magnification 1.1X Working Distance 108-1005mm
N120 NIKON Z-MOUNT (Z6)	MACRO FX							
	Nikkor Z MC 105mm f/2.8 VR S Macro	19231 (V3) Z105-F (V3)			18711 N120 Macro port 105	SMC/CMC Option 1 - M67 Thread 81228 M67 Spacer Ring for SMC/CMC (included in all SMC/CMC packaging) SMC/CMC Option 2 - Bayonet Mount 83250 + 83214 M67 to Bayonet Mount Converter II + Bayonet Mount Adaptor for SMC/CMC	81501 MFO-1	Max. Magnification 1.1X Working Distance 108-1005mm
N120 NIKON Z-MOUNT (Z6II / Z5II)	MACRO FX							
	Nikkor Z MC 105mm f/2.8 VR S Macro	19200 (V2) Z105-F (V2) or 19231 (V3) Z105-FH (V3)			18711 N120 Macro port 105	SMC/CMC Option 1 - M67 Thread 81228 M67 Spacer Ring for SMC/CMC (included in all SMC/CMC packaging) SMC/CMC Option 2 - Bayonet Mount 83250 + 83214 M67 to Bayonet Mount Converter II + Bayonet Mount Adaptor for SMC/CMC	81501 MFO-1	Max. Magnification 1.1X Working Distance 108-1005mm
N120 CANON EF-MOUNT	MACRO FULL FRAME							
	Canon EF 100mm f/2.8L Macro IS USM	19523 C100S-F			18703 Macro Port 94	SMC/CMC Option 1 - M67 Thread 81228 M67 Spacer Ring for SMC/CMC (included in all SMC/CMC packaging) SMC/CMC Option 2 - Bayonet Mount 83250 + 83214 M67 to Bayonet Mount Converter II + Bayonet Mount Adaptor for SMC/CMC	81501 MFO-1	Max. Magnification 1.2X Working Distance 103-1072mm
N120 CANON RF-MOUNT	MACRO FULL FRAME							
	Canon RF 85mm f/2 Macro IS STM				18701 Macro Port 60	SMC/CMC Option 1 - M67 Thread 81228 M67 Spacer Ring for SMC/CMC (included in all SMC/CMC packaging) SMC/CMC Option 2 - Bayonet Mount 83250 + 83214 M67 to Bayonet Mount Converter II + Bayonet Mount Adaptor for SMC/CMC	81501 MFO-1	Max. Magnification 0.7X Working Distance 168-982mm * slight vignetting appearing at 50mm
N120 CANON RF-MOUNT	MACRO FULL FRAME							
	Canon RF 100mm f/2.8L Macro IS USM	19575 + 19576 CRF100-F + SA Control Ring			18703 Macro Port 94	SMC/CMC Option 1 - M67 Thread 81228 M67 Spacer Ring for SMC/CMC (included in all SMC/CMC packaging) SMC/CMC Option 2 - Bayonet Mount 83250 + 83214 M67 to Bayonet Mount Converter II + Bayonet Mount Adaptor for SMC/CMC	81501 MFO-1	Max. Magnification 1.6X Working Distance 56-1072mm
N120 CANON RF-MOUNT (C50 / R6II)	MACRO FULL FRAME							
	Canon RF 100mm f/2.8L Macro IS USM	19630 RF100-F			18712 Macro Port 115	SMC/CMC Option 1 - M67 Thread 81228 M67 Spacer Ring for SMC/CMC (included in all SMC/CMC packaging) SMC/CMC Option 2 - Bayonet Mount 83250 + 83214 M67 to Bayonet Mount Converter II + Bayonet Mount Adaptor for SMC/CMC	81501 MFO-1	Max. Magnification 1.6X Working Distance 56-1072mm
N120 PANASONIC L-MOUNT	MACRO FULL FRAME							
	Sigma 105mm F2.8 DG DN Macro Art			22120 N120 Extension Ring 20 II	18708 Macro Port 80 18701 Macro Port 60	SMC/CMC Option 1 - M67 Thread 81228 M67 Spacer Ring for SMC/CMC (included in all SMC/CMC packaging) SMC/CMC Option 2 - Bayonet Mount 83250 + 83214 M67 to Bayonet Mount Converter II + Bayonet Mount Adaptor for SMC/CMC	81501 MFO-1	Max. Magnification 1.2X Working Distance 123-975mm * slight vignetting appearing at 80mm
N120 PANASONIC L-MOUNT	MACRO FULL FRAME							
	Panasonic Lumix S 100mm f2.8 Macro Lens	19732 PL100-F			18709 Macro Port 27	83214 Bayonet Mount Adaptor for SMC/CMC	81501 MFO-1	Max. Magnification 1.2X Working Distance 76-990mm
N120 FUJIFILM G-MOUNT	MACRO MEDIUM FORMAT							
	Fujifilm GF 120mm f/4 Macro R LM OIS WR	19823 GF120-F		21160 / 22160 N120 Extension Ring 60 I / II	18701 Macro Port 60	SMC/CMC Option 1 - M67 Thread 81228 M67 Spacer Ring for SMC/CMC (included in all SMC/CMC packaging) SMC/CMC Option 2 - Bayonet Mount 83250 + 83214 M67 to Bayonet Mount Converter II + Bayonet Mount Adaptor for SMC/CMC	81501 MFO-1	Max. Magnification 0.7X Working Distance 214-1050mm
N100 CANON RF-MOUNT	MACRO APS-C							
	Canon RF 100mm f/2.8L Macro IS USM	19575 CRF100-F	37305 N100 to N120	37430 N100 Extension Ring 30 II	37126 N100 Macro Port 105 18703 Macro Port 94	SMC/CMC Option 1 - M67 Thread 81228 M67 Spacer Ring for SMC/CMC (included in all SMC/CMC packaging) SMC/CMC Option 2 - Bayonet Mount 83250 + 83214 M67 to Bayonet Mount Converter II + Bayonet Mount Adaptor for SMC/CMC	81501 MFO-1	Max. Magnification 1.6X Working Distance 56-1072mm
N100 CANON RF-MOUNT	MACRO MEDIUM FORMAT							
	Canon RF-S 18-45mm f4.5-6.3 IS STM	19596 CR184S-Z			37181 N100 Flat Port 50	SMC/CMC Option 1 - M67 Thread 81228 M67 Spacer Ring for SMC/CMC (included in all SMC/CMC packaging) SMC/CMC Option 2 - Bayonet Mount 83250 + 83214 M67 to Bayonet Mount Converter II + Bayonet Mount Adaptor for SMC/CMC	81501 MFO-1	Max. Magnification 0.28X Working Distance 167-1110mm
N100 SONY E-MOUNT	MACRO FULL FRAME							
	Sony SEL90M28G FE 90mm f2.8 Macro G OSS	37147 SE90-F			37126 N100 Macro Port 105	SMC/CMC Option 1 - M67 Thread 81228 M67 Spacer Ring for SMC/CMC (included in all SMC/CMC packaging) SMC/CMC Option 2 - Bayonet Mount 83250 + 83214 M67 to Bayonet Mount Converter II + Bayonet Mount Adaptor for SMC/CMC	81501 MFO-1	Max. Magnification 1.2X Working Distance 106-1082mm
N100 SONY E-MOUNT	MACRO FULL FRAME							
	Sony FE 100mm f2.8 Macro GM	37182 SE100-F			37180 N100 Macro Port 125	81228 M67 Spacer Ring for SMC/CMC (included in all SMC/CMC packaging) SMC/CMC Option 2 - Bayonet Mount 83250 + 83214 M67 to Bayonet Mount Converter II + Bayonet Mount Adaptor for SMC/CMC	81501 MFO-1	Max. Magnification 1.5X Working Distance 69-1010mm
N100 SONY E-MOUNT	MACRO FULL FRAME							
	Sigma 105mm F2.8 DG DN Macro Art	37166 SGE105-F			37125 N100 Macro Port 110	SMC/CMC Option 1 - M67 Thread 81228 M67 Spacer Ring for SMC/CMC (included in all SMC/CMC packaging) SMC/CMC Option 2 - Bayonet Mount 83250 + 83214 M67 to Bayonet Mount Converter II + Bayonet Mount Adaptor for SMC/CMC	81501 MFO-1	Max. Magnification 1.3X Working Distance 123-1002mm * slight vignetting appearing at 80mm
N100 SONY E-MOUNT	MACRO FULL FRAME							
			37305 N100 to N120 25.5mm Port Adaptor II * This setup is only compatible with 37305 SN: A544975 onwards, older version 37305 can be upgraded using lock mechanism 95851	22120 N120 Extension Ring 20 II	18701 Macro Port 60	SMC/CMC Option 1 - M67 Thread 81228 M67 Spacer Ring for SMC/CMC (included in all SMC/CMC packaging) SMC/CMC Option 2 - Bayonet Mount 83250 + 83214 M67 to Bayonet Mount Converter II + Bayonet Mount Adaptor for SMC/CMC	81501 MFO-1	Max. Magnification 1.2X Working Distance 123-975mm * slight vignetting appearing at 80mm
NBS MICRO FOUR THIRDS SYSTEM	MACRO FOUR THIRDS							
	Olympus M.Zuiko Digital ED 60mm f2.8 Macro	36149 O60-F			36163 NBS Macro Port 65 36135 NBS Macro Port 45	SMC/CMC Option 1 - M67 Thread 81228 M67 Spacer Ring for SMC/CMC (included in all SMC/CMC packaging) SMC/CMC Option 2 - Bayonet Mount 83250 + 83214 M67 to Bayonet Mount Converter II + Bayonet Mount Adaptor for SMC/CMC	81501 MFO-1	Max. Magnification 1.1X Working Distance 58-1120mm
NBS MICRO FOUR THIRDS SYSTEM	MACRO FOUR THIRDS							
	Panasonic LUMIX DG MACRO-ELMARIT 45mm F2.8 ASPH. MEGA O.I.S.	36145 P45-F			36135 NBS Macro Port 45	SMC/CMC Option 1 - M67 Thread 81228 M67 Spacer Ring for SMC/CMC (included in all SMC/CMC packaging) SMC/CMC Option 2 - Bayonet Mount 83250 + 83214 M67 to Bayonet Mount Converter II + Bayonet Mount Adaptor for SMC/CMC	81501 MFO-1	Max. Magnification 1.1X Working Distance 37-1120mm
TELEPHOTO MACRO FOUR THIRDS	MACRO FOUR THIRDS							
	OM System M.Zuiko Digital ED 90mm f3.5 Macro IS PRO	36072 O90-F * Focus Knob is included in packaging			36169 NBS Macro Port 120 with Focus Limit Switch Selector * optical performance at Normal Macro mode	SMC/CMC Option 1 - M67 Thread 81228 M67 Spacer Ring for SMC/CMC (included in all SMC/CMC packaging) SMC/CMC Option 2 - Bayonet Mount 83250 + 83214 M67 to Bayonet Mount Converter II + Bayonet Mount Adaptor for SMC/CMC	81501 MFO-1	Max. Magnification 1.2X Working Distance 66-1105mm
TELEPHOTO MACRO FOUR THIRDS	MACRO FOUR THIRDS							
	OM System M.Zuiko Digital ED 90mm f3.5 Macro IS PRO	36072 O90-F * Focus Knob is included in packaging			36169 NBS Macro Port 120 with Focus Limit Switch Selector * optical performance at S-Macro mode	SMC/CMC Option 1 - M67 Thread 81228 M67 Spacer Ring for SMC/CMC (included in all SMC/CMC packaging) SMC/CMC Option 2 - Bayonet Mount 83250 + 83214 M67 to Bayonet Mount Converter II + Bayonet Mount Adaptor for SMC/CMC	81501 MFO-1	Max. Magnification 2.1X Working Distance 39-300mm
NBS SONY E-MOUNT	MACRO FULL FRAME							
	Sony FE 90mm f/2.8 Macro G OSS		36204 NBS to N120 60mm Port Adaptor II * This setup is only compatible with 36204 SN: A457812 onwards, older version 36204 can be upgraded using lock mechanism 95851		18701 Macro Port 60 37123 N100 Macro Port 55 * This setup is only compatible with 37123 SN: A175734 onwards	SMC/CMC Option 1 - M67 Thread 81228 M67 Spacer Ring for SMC/CMC (included in all SMC/CMC packaging) SMC/CMC Option 2 - Bayonet Mount 83250 + 83214 M67 to Bayonet Mount Converter II + Bayonet Mount Adaptor for SMC/CMC	81501 MFO-1	Max. Magnification 1.1X Working Distance 107-1082mm
NBS SONY E-MOUNT	MACRO FULL FRAME							
	Sony FE 100mm f/2.8 GM	36178 SE100-F	36207 NBS to N120 50mm Port Adaptor II with Knob		18703 Macro Port 94	SMC/CMC Option 1 - M67 Thread 81228 M67 Spacer Ring for SMC/CMC (included in all SMC/CMC packaging) SMC/CMC Option 2 - Bayonet Mount 83250 + 83214 M67 to Bayonet Mount Converter II + Bayonet Mount Adaptor for SMC/CMC	81501 MFO-1	Max. Magnification 1.5X Working Distance 62-1020mm
NBS & COMPACT SYSTEM	CANON							
	Canon PowerShot V1 Digital Camera (17343 NA-CV1) * 16-50mm (35mm equivalent) * Port is exchangeable for this housing				38703 N50 Short Port 25 with Bayonet Mount * change part from housing	83214 Bayonet Mount Adaptor for SMC/CMC	81501 MFO-1	Max. Magnification 89 x 59.3mm Working Distance 116-1150mm
NBS & COMPACT SYSTEM	CANON							
	Canon EOS R50 with RF-S 18-45 F4.5-6.3 IS STM Lens (17340 / 17340P NA-R50 / Pro Package) * Port is exchangeable for this housing					83214 Bayonet Mount Adaptor for SMC/CMC	81501 MFO-1	Max. Magnification 0.28X Working Distance 167-1110mm
PANASONIC	MACRO FULL FRAME							
	Panasonic Lumix DC-L10 (17723 NA-L10) * 24-75mm (35mm equivalent) * Port is exchangeable for this housing					25107 M67 Flip Diopter Holder	81501 MFO-1	Smallest Subject Size 108 x 81.2mm Working Distance 210-1200 mm

81501

Mid-range Focus Optimizer 1

Specifications

Dimension (mm)	: OD 70mm x 26mm
Weight in Air	: 218g
Buoyancy in Water	: Negative 150g
Body Construction	: Hard-anodized aluminum alloy
Lens Construction	: 3 elements in 2 groups
Lens Coating	: Anti-reflection Coating
Working Distance	: 12.5-114cm
Magnification	: 2.4x
Mount Thread Diameter	: M67
Depth Rating	: 100m

Package includes

- MFO-1
- Front hard lens cap
- Rear lens caps
- Neoprene Bag
- Cleaning Cloth
- M67 Spacer ring

Last Updated : 2026-05-21

* This port chart is subject to updating as new information becomes available