

American Optical Darkfield Condensers and Funnel Stops for AO Series 2/4 and Series 10/20 Microscopes

Produced by Tom Woods and shared on 04-21-2022 with the explanation: "I've been playing a bit with AO Darkfield. I put together a little cheat sheet about these condensers and their compatibilities as concerns the AO Series 2-4 and 10-20 microscopes. Thought you might like to have a copy."

- Funnel stops are only needed for 97X and/or 100X objectives. They are NOT needed for 40X or 45X objectives. Funnel stops are NOT needed for objectives with built-in iris diaphragms (e.g., 50X Cat. 1016, 100X Cat. 1014, 50X Cat. 1026, 100X Cat. 1027).
- Darkfield condensers 214F and 218F are primarily for use with objectives of 40X and higher. Toric condensers K2172 and 1096B can be used with objectives of 10X and higher.
- AO Dark field condensers 214F and 218F (with built in light) are intended for use on AO Series 2 and 4 (160 mm T.L.) and Series 10 and 20 (infinity corrected) microscopes. The toric condensers, Models K2172 and 1096B, are intended primarily for use on AO Series 10 and Series 20 microscopes.

For American Optical Series 2/4 microscopes, the funnel stop needed is Catalog No. 214-127, for the 97X C127 oil immersion objective (the letter "C" means the lenses are Americote treated):

ACHROMATIC OBJECTIVES

Catalog Number	Initial Magnification	Equivalent Focal Length	Numerical Aperture	Working Distance
C105	3.5X	30mm	0.09	11mm
C107	5X	25	.20	20
C109	10X	16	0.25	6.8
C110*	10X, 4.2X	16, 32	0.25, 0.10	6.8
C112	20X	8	0.50	1.3
C115	43X	4	0.66	0.73
C125	50X oil immersion	3.6	0.95	0.37
C127	97X oil immersion	1.8	1.25	0.12
C1292**	97X oil immersion	1.8	1.25	0.13

*Separable Objective **With built-in iris diaphragm

For American Optical Series 10/20 microscopes, the funnel stop needed is Catalog No. 214-79, for the 100X Cat. 1079 oil immersion objective.

Note: the AO Cat. 1024 100X plan achro objective is not intended for darkfield use and should not be used with a funnel stop.