

ARTISAN®
TECHNOLOGY GROUP

Your **definitive** source for quality pre-owned equipment.

Artisan Technology Group
(217) 352-9330 | sales@artisantg.com | artisantg.com

Full-service, independent repair center
with experienced engineers and technicians on staff.

We buy your excess, underutilized, and idle equipment
along with credit for buybacks and trade-ins.

Custom engineering
so your equipment works exactly as you specify.

- Critical and expedited services
- In stock / Ready-to-ship
- Leasing / Rentals / Demos
- ITAR-certified secure asset solutions

Expert team | Trust guarantee | 100% satisfaction

All trademarks, brand names, and brands appearing herein are the property of their respective owners.

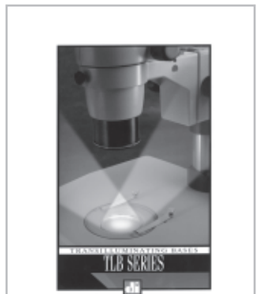
Visit our website - *Click HERE*



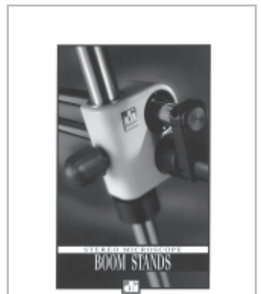
For your general digital camera needs, request our “SPOT Insight” Brochure.



For your low light digital camera needs, request our “SPOT RT” Brochure.



For your substage illuminator needs, request our “Transilluminating Bases” Catalog.



For your boom stand needs, request our “Stereo Microscope Boom Stands” Catalog.

DIAGNOSTIC
instruments,inc.

6540 BURROUGHS · STERLING HEIGHTS
MICHIGAN · USA · 48314–2133
PHONE 586·731·6000 FAX 586·731·6469
E–MAIL info@diaginc.com
WEBSITE www.diaginc.com



MICROSCOPE COUPLERS

FOR VIDEO, DIGITAL & 35mm CAMERAS

DIAGNOSTIC
instruments,inc.

CONTENTS

Microscope Video, Digital & 35mm Camera Couplers Catalog

Selection Guide

How to use the Catalog 2–3
Video, Digital & 35mm Camera Coupler Selection Guide 2–3

Consumer Digital Camera Couplers / CDC Series

Overview of CDC Series System 4–5
CDC Series Selection Chart 6–7

1CCD Camera Couplers / Direct Image Projection Series

Overview of Direct Image Projection System 8–9
DIP Series Coupler Selection Guide 10–11
Direct Image Projection Coupler Selection Chart 12–13

1CCD Camera Couplers / HR Series

Overview of HR Series System 14–15
HR & HRP Series Coupler Selection Guide 16–17
HRD & HRU Series Coupler Selection Guide 18–19
HR Series Microscope Bottom Clamp Chart 20–21

3CCD Camera Couplers / T45 & T60 Series

Overview of 3CCD Video Coupler Systems 22–23
T-Series Coupler Selection Guide 24–25
3CCD Coupler Selection Charts 26–29

35mm SLR Camera / Microscope PA1 Adapters & T-mounts

Overview of PA1 Adapters 30–31
PA1 Adapter & T-mount Selection Charts 32–33

Appendix 1

Ordering a 3CCD Coupler by Components 34
Component Selection Charts 34–35

Appendix 2

Field of View Diagrams 36–37

Appendix 3

Determining Field of View Size 38
Magnification on the TV Monitor 38
Field of View Size Tables 39

Appendix 4

Parfocalizing a Video or Digital Camera and Microscope 40

COUPLER SERIES SELECTION GUIDE

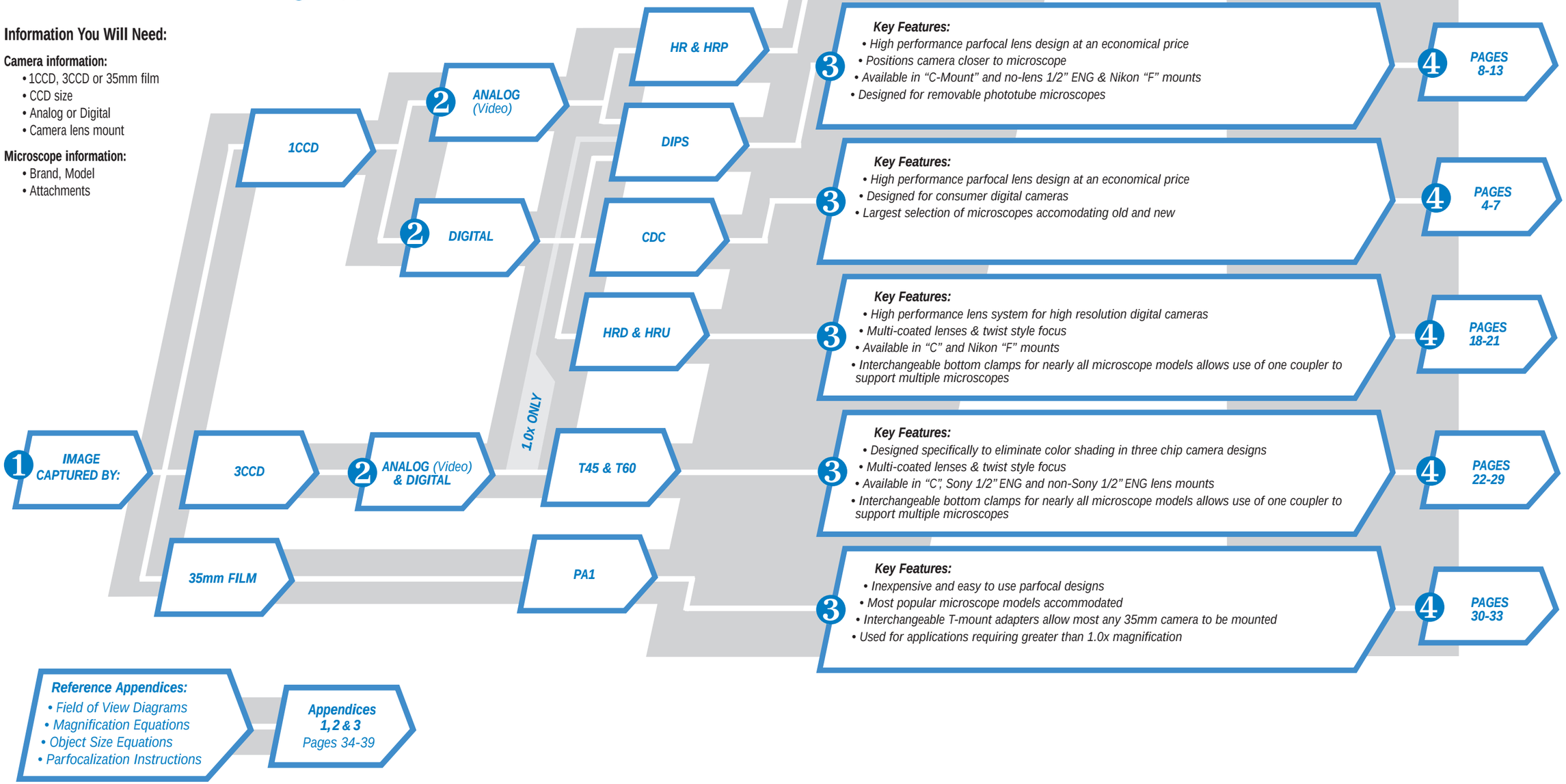
How To Choose:

1. Select your camera's image capture technology
2. Select video or high resolution digital
3. Select key features for your application
4. Go to page numbers indicated for more detail

Information You Will Need:

Camera information:
- 1CCD, 3CCD or 35mm film
- CCD size
- Analog or Digital
- Camera lens mount

Microscope information:
- Brand, Model
- Attachments



Reference Appendices:
- Field of View Diagrams
- Magnification Equations
- Object Size Equations
- Parfocalization Instructions

Appendices 1, 2 & 3
Pages 34-39

CONSUMER DIGITAL CAMERA COUPLERS / CDC SERIES

CDC Series for Consumer Dital Cameras with Filter Thread Mounts

Benefits of the Consumer Digital Camera System

High Quality
Produces crisp, flat field images with all microscope objectives including apochromats, plan fluorites, and achromats.

Economical
Priced up to 50% lower than major manufacturers' couplers.

Compact Design
Positions camera close to microscope for greater stability, convenience and aesthetics.

Parfocal
Precise machining provides parfocality between the microscope and the camera.

Wide Field of View
Use camera's zoom feature to set your field of view.

Microscope Mounts
The largest selection available.

Camera Mounts
28mm Ø x .75 pitch filter thread mount.
37mm Ø x .75 pitch filter thread mount.*
43mm Ø x .75 pitch filter thread mount.*

*Certain cameras may exhibit vignetting of image.

Note: Older microscopes that use compensating optics may produce images with lateral chromatic abberation and spherical abberations uncorrected (see Appendix 4).



Nikon Cool Pix Series Camera on a Nikon E200 Microscope

The System . . .



Field of View
The camera's zoom system allows you to set your field of view close in for detailed image capture or zoom way out for overall morphology.

Camera Lens Mount
Choose from 28mm Ø, 37mm Ø* and 43mm Ø* filter thread mounts.

Computer Optimized Lens System
CDC Coupler systems are computer optimized and expertly manufactured. All lenses are multicoated optical glass to ensure crisp, flat field images on your camera.

Microscope Mount
CDC Couplers accommodate nearly any microscope model. Couplers are ordered as one catalog number specific for your microscope (see selection guide on pages 6-7).

Selected Consumer Digital Camera Couplers for Various Microscopes



CDCXX23
For 23.2mm Phototubes



CDCXX30
For 30mm Phototubes



CDCXXNL
For ISO 38mm Phototubes (Nikon & Leica)



CDCXXHC
For Leica HC Tube

Selected Consumer Digital Camera Couplers for Various Microscopes



CDCXXBX
For Olympus BX/AX



CDCXXBB
For Bausch & Lomb Stereozoom 6 and Balplan Microzoom



CDCXXAD
For American Optical Diastar, Microstar IV



CDCXXZN
For Zeiss Axio-2 Series

CONSUMER DIGITAL CAMERA COUPLERS / CDC SERIES

CDC Coupler Selection Chart

❶ SELECT CAMERA FILTER THREAD ➢ / ❷ IDENTIFY MICROSCOPE ↓	28mm	37mm	43mm
EYEPIECETUBES & PHOTOTUBES			
Eyepiecetubes and phototubes with 23.2mm inside diameter	CDC2823	CDC3723	CDC4323
Eyepiecetubes and phototubes with 30mm inside diameter	CDC2830	CDC3730	CDC4330
AMERICAN OPTICAL (LEICA)			
COMPOUND			
Diastar, Microstar IV	CDC28AD	CDC37AD	CDC43AD
Epistar	CDC28AM	CDC37AM	CDC43AM
Microstar 10, 110, 120	CDC28AM	CDC37AM	CDC43AM
BAUSCH & LOMB (LEICA)			
COMPOUND			
Balplan, Microzoom	CDC28BB	CDC37BB	CDC43BB
STEREO			
Stereozoom 6	CDC28BB	CDC37BB	CDC43BB
Stereozoom 7 (newer slip in port)	CDC28BS	CDC37BS	CDC43BS
LEICA (also see American Optical, Bausch & Lomb, Leitz, Reichert, Wild)			
COMPOUND			
DMR/DMRB series, fits FSA tube adapter, Variotube and DMRD (does not fit photo TV module), DMLS clinical microscope, DMLB, DMLP, DMC comparison microscope	CDC28DM	CDC37DM	CDC43DM
DMR HC series, fits onto HC tube adapter	CDC28HC	CDC37HC	CDC43HC
INVERTED			
DMIL	CDC28NL	CDC37NL	CDC43NL
DMIRB	CDC28DM	CDC37DM	CDC43DM
DMIL & DMIRB with HC optics	CDC28HC	CDC37HC	CDC43HC
STEREO			
MZ series 10 445 924 trinocular head (Adapter includes 10 445 930 style phototube)	CDC28LZ	CDC37LZ	CDC43LZ
MS5, MZ6, MZ8, MZ12, MZAPO with 38mm ISO photoport	CDC28NL	CDC37NL	CDC43NL
MS5, MZ6, MZ8, MZ12, MZAPO, MZFL3, MZ16 in 37mm port of new phototubes HU (446 174), video/phototube objective 1.0x (445 930), video/phototube objective H (445 931)	CDC28DM	CDC37DM	CDC43DM
GZ6 with 13410302 phototube	CDC28NL	CDC37NL	CDC43NL
SZ6	CDC28BB	CDC37BB	CDC43BB
SZ7	CDC28BS	CDC37BS	CDC43BS
S6D, S8APO	CDC28DM	CDC37DM	CDC43DM
MACROSCOPE			
M420 (old style with 38mm ISO photoport)	CDC28NL	CDC37NL	CDC43NL
M420 (new style with 37mm photoport)	CDC28DM	CDC37DM	CDC43DM
LEITZ (LEICA)			
COMPOUND			
Dialux, Laborlux, Ortholux, Orthoplan, Diaplan, Ergolux, Aristoplan, Aristomet, Mettalux, Mettalloplan (for all models, inserts into 38mm ISO photoport)	CDC28NL	CDC37NL	CDC43NL
INVERTED			
Diavert, Labovert, Fluovert, Metallovert (for all, inserts into 38mm ISO photoport)	CDC28NL	CDC37NL	CDC43NL
MITUTOYO			
COMPOUND			
Finescope 60	CDC28F6	CDC37F6	CDC43F6
NIKON			
COMPOUND			
First series Optiphot, Labophot, Alphaphot with nonremovable phototubes	CDC28OT	CDC37OT	CDC43OT
Optiphot-2, Optiphot 100S, 150, 200, 300 Labophot-2, Alphaphot-2, Eclipse series (for all, inserts into 38mm ISO photoport when phototube is removed)	CDC28NL	CDC37NL	CDC43NL
E200, 400, 600 (with Y-T TV Tube, NOT YIDP phototube)	CDC28NL	CDC37NL	CDC43NL
E800, E1000 (with video tube for C-mount)	CDC28NL	CDC37NL	CDC43NL
STEREO			
SMZ-U, SMZ10A, SMZ800, SMZ1500, SMZ1000 (inserts into 38mm ISO photoport when phototube is removed)	CDC28NL	CDC37NL	CDC43NL
INVERTED			
Diaphot 300/200, Eclipse TE200/300 sideport, TS100-F (38mm ISO photoport when phototube is removed)	CDC28NL	CDC37NL	CDC43NL
TE2000 U & E frontport	CDC28TE	CDC37TE	CDC43TE
TE2000 S, U & E sideport	CDC28NL	CDC37NL	CDC43NL
METALLURGICAL			
Epiphot 300/200 (38mm ISO photoport when phototube is removed)	CDC28NL	CDC37NL	CDC43NL
MEASURING			
MM40/MM60 (inserts into 38mm ISO photoport)	CDC28NL	CDC37NL	CDC43NL
OLYMPUS			
COMPOUND			
BX series, AX Provis series, MX series, CX series (replaces Olympus phototube U-SPT)	CDC28BX	CDC37BX	CDC43BX
BH-2 series: BHT, BHTU, BHS, BHM (replaces top part of phototube by removing three screws. Note: will not work in BH-2 tilting trinoc 3-LC407)	CDC28BH	CDC37BH	CDC43BH
BH, CX40, CH, CH-2, CH30 trinocular with 25mm phototube	CDC2823	CDC3723	CDC4323
INVERTED			
IX2 series (U-SPT phototube removed)	CDC28BX	CDC37BX	CDC43BX
IX sideport	CDC28IX	CDC37IX	CDC43IX
IX trinocular head	CDC28BX	CDC37BX	CDC43BX
IX 51, IX 71, IX 81	CDC28BX	CDC37BX	CDC43BX
CKX41 (U-SPT phototube removed)	CDC28BX	CDC37BX	CDC43BX
CK, CK40, CK-2 with 25mm phototube	CDC2823	CDC3723	CDC4323
PME3 Metallurgical	CDC28P3	CDC37P3	CDC43P3
PMG Metallurgical	CDC28PG	CDC37PG	CDC43PG
GX Metallurgical	CDC28GX	CDC37GX	CDC43GX
STEREO			
SZIIITR and X-TR with 25mm phototube	CDC2823	CDC3723	CDC4323
SZX9, SZX12	CDC28BX	CDC37BX	CDC43BX
REICHERT (LEICA)			
COMPOUND			
Microstar IV	CDC28AD	CDC37AD	CDC43AD
Diastar	CDC28AD	CDC37AD	CDC43AD
UNITRON			
STEREO			
ZST	CDC2823	CDC3723	CDC4323
WILD (LEICA)			
STEREO			
All new stereos with removable phototube that reveals 38mm ISO photoport; including M3, M5, M7, M8, M10	CDC28NL	CDC37NL	CDC43NL
MACROSCOPE			
M420 (inserts into 38mm ISO photoport)	CDC28NL	CDC37NL	CDC43NL
ZEISS			
COMPOUND			
Axioskop, Axioplan, Axiophot, Axiotron, Axioskop-40	CDC28ZA	CDC37ZA	CDC43ZA
Axiolab, Axioplan-2, Axiophot-2, Axiotech, Axioskop-2, Axiostar, new Standard trinocular tube (Zeiss part number 45 29 02) (Note: will not work in dual port trinoc)	CDC28ZN	CDC37ZN	CDC43ZN
Universal, Photomicroscope II & III, UEM, Ultraphot IIIB, Axiomat (replaces phototube in all models)	CDC28ZU	CDC37ZU	CDC43ZU
Standard Trinoc with 25mm phototube 47 30 26, 47 30 28, 47 30 29, 45 29 03	CDC2823	CDC3723	CDC4323
STEREO			
SV6, SV11, Stemi 2000-C, Stemi DRC	CDC28ZN	CDC37ZN	CDC43ZN
INVERTED			
Axiovert models 100, 135, 135M, 200, IM series when used with new Standard trinocular tube (45 29 02)	CDC28ZN	CDC37ZN	CDC43ZN
Axiovert models 10, 35, 35M, 405M	CDC28ZA	CDC37ZA	CDC43ZA
IM series when used with old Standard phototube (25mm outside diameter)	CDC2823	CDC3723	CDC4323

1CCD CAMERA COUPLERS / DIP SERIES

Direct Image Projection for C-Mount & Bayonet Mount Cameras

Benefits of the Direct Image Projection System

High Quality
Produces crisp, flat field images with all microscope objectives including apochromats, plan fluorites, and achromats.

Economical
Price range 13%-250% lower than major manufacturers' couplers.

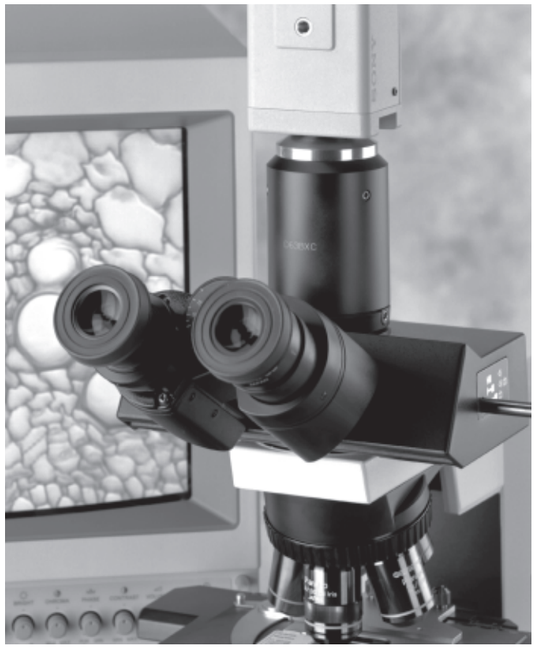
Low Profile
Positions camera CCD chip at the intermediate image plane, closer to microscope for greater stability, convenience, and aesthetics.

Parfocal
Precise machining provides parfocality between the microscope and the TV monitor (see Appendix 4 on "Parfocalizing").

Wide Field of View
0.50x (for 1/2"CCD) and 0.63x (for 2/3"CCD) provide wider field of view on monitor.

Camera Mounts
C-Mount, Nikon F-Mount, Sony 1/2" ENG Mount and Non-Sony 1/2" ENG Mount.

Note: Older microscopes that use compensating optics may produce images with lateral chromatic abberation and spherical abberations uncorrected (see Appendix 4).



0.63x (D63BXC) to attach 2/3" CCD camera to Olympus BX

The System . . .



Direct Image Projection Concept
The camera CCD chip is positioned where the microscope intermediate image is located. This provides a low profile, stable and more compact system. The system is parfocal with proper microscope set-up. See Appendix 4 about "Parfocalizing" a microscope.

Camera Lens Mount
Choose from the large selection of C-mount and F-mount models.

Direct Image Projection Lens System
For a wider field of view, a 0.50x (for 1/2" CCD) and 0.63x (for 2/3" CCD) reduction lenses are available for all C-mount versions of the Direct Image Projection series. No-lens versions are also available which provide a 1.0x magnification.

No Bottom Clamp
The Direct Image Projection couplers are ordered as one part, specific for a range of microscopes. They do not utilize "Bottom Clamps" as the HR video coupler series does.

Selected Direct Image Projection Couplers for C-Mount Cameras



D10HCC, D63HCC, D50HCC
For Leica DMR, DMRD, DMLS, DMLB



D10NLC, D63NLC, D50NLC
For Nikon & Leica ISO 38mm Ports



D10BXC, D63BXC, D50BXC
For Olympus BX, AX & MX Series



D10ZNC, D63ZNC, D50ZNC
For Zeiss Axiolab, Axioplan-2, Axiophot-2, Axiotech & New Standard

Selected Direct Image Projection Couplers for Nikon F-Mount Cameras



D10HCF
For Leica DMR, DMRD, DMLS, DMLB



D10NEF
For Nikon Eclipse, E400, E600 Series
D10E8F
For Nikon Eclipse, E800, E100 Series



D10BXF
For Olympus BX, AX & MX Series



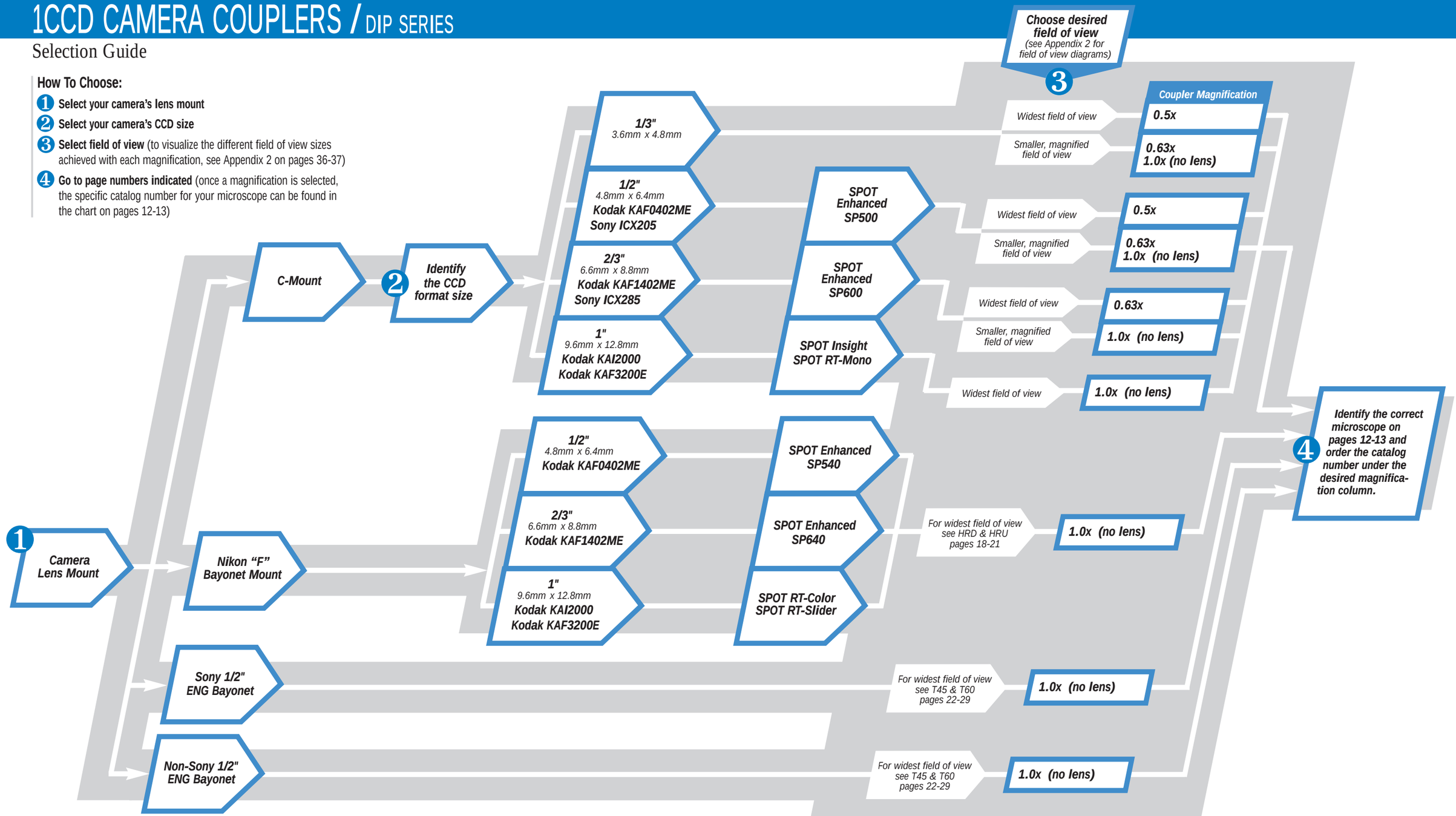
D10ZNF
For Zeiss Axiolab, Axioplan-2, Axiophot-2, Axiotech & New Standard

1CCD CAMERA COUPLERS / DIP SERIES

Selection Guide

How To Choose:

1. **Select your camera's lens mount**
2. **Select your camera's CCD size**
3. **Select field of view** (to visualize the different field of view sizes achieved with each magnification, see Appendix 2 on pages 36-37)
4. **Go to page numbers indicated** (once a magnification is selected, the specific catalog number for your microscope can be found in the chart on pages 12-13)



(with Y-T TV Tube, NOT YIDP phototube)

1CCD CAMERA COUPLERS / DIP SERIES

Selection Chart / For C-Mount, F-Mount,** Sony ½" ENG,** Non-Sony ½" ENG** (**1.0x only)

Coupler Selection Chart

❶ SELECT MAGNIFICATION ➢ / ❷ IDENTIFY MICROSCOPE ⩛	C-MOUNT 0.50x For ½" & ⅓" CCD only	C-MOUNT 0.63x For ⅔" ½" & ⅓" CCD	C-MOUNT 1.0x (No Lens)	F-MOUNT 1.0x (No Lens w/ Adjustable Focus)
AMERICAN OPTICAL (LEICA)				
COMPOUND				
Diastar, Microstar IV	D50ADC	D63ADC	D10ADC	
Epistar	D50AMC	D63AMC	D10AMC	
Microstar 10, 110, 120	D50AMC	D63AMC	D10AMC	
BAUSCH & LOMB (LEICA)				
COMPOUND				
Balplan, Microzoom	D50BBC	D63BBC	D10BBC	
STEREO				
Stereozoom 6	D50BBC	D63BBC	D10BBC	
Stereozoom 7 (newer slip in port)	D50BSC	D63BSC	D10BSC	
LEICA (also see American Optical, Bausch & Lomb, Leitz, Reichert, Wild)				
COMPOUND				
DMR series, fits FSA tube adapter, Variotube and DMRD (does not fit photo TV module), DMLS clinical microscope, DMLB, DMRB, DMLP, DMC comparison microscope	N/A	N/A	D10DMC	
DMR HC series, fits onto HC tube adapter	D50HCC	D63HCC	D10HCC	D10HCF
INVERTED				
DMIL	D50NLC	D63NLC	D10NLC	
DMIRB	N/A	N/A	D10DMC	
DMIL, DMIRB with HC optics	D50HCC	D63HCC	D10HCC	D10HCF
STEREO				
MZ series 10 445 924 trinocular head (Adapter includes 10 445 924 style phototube)	D50LZC	D63LZC	D10LZC	D10LZF
MS5, MZ6, MZ8, MZ12, MZAPO with 38mm ISO photoport	D50NLC	D63NLC	D10NLC	
MS5, MZ6, MZ8, MZ12, MZAPO, MZFL3, MZ16 in 37mm port of new phototubes HU(446 174), video/phototube objective 1.0x (445 930), video/phototube objective H(445 931)	D50MZC	D63MZC	D10DMC	
GZ6 with 13410302 phototube	D50NLC	D63NLC	D10NLC	
SZ6	D50BBC	D63BBC	D10BBC	
SZ7	D50BSC	D63BSC	D10BSC	
S6D, S8APO	D50MZC	D63MZC	D10MZC	
MACROSCOPE				
M420 (old style with 38mm ISO photoport)	D50NLC	D63NLC	D10NLC	
M420 (new style with 37mm photoport)	N/A	N/A	D10DMC	
LEITZ (LEICA)				
COMPOUND				
Dialux, Laborlux, Ortholux, Orthoplan, Diaplan, Ergolux, Aristoplan, Aristomet, Mettalux, Mettalloplan (for all models, inserts into 38mm ISO photoport)	D50NLC	D63NLC	D10NLC	
INVERTED				
Diavert, Labovert, Fluovert, Metallovert (for all, inserts into 38mm ISO photoport)	D50NLC	D63NLC	D10NLC	

	C-MOUNT			F-MOUNT
MITUTOYO				
COMPOUND				
Finescope 60	D50F6C	D63F6C	D10F6C	
NIKON				
COMPOUND				
Optiphot-2, Optiphot 100S, 150, 200, 300 Labophot-2, Alphaphot-2, Eclipse series (for all, inserts into 38mm ISO photoport when phototube is removed)	D50NLC	D63NLC	D10NLC	
E200, 400, 600 (with Y-T TV Tube, NOT YIDP phototube)	D50NLC	D63NLC	D10NLC	D10NEF
E800, E1000 (with video tube for C-mount)	D50NLC	D63NLC	D10NLC	D10E8F
STEREO				
SMZ-U, SMZ10A, SMZ800, SMZ1000, SMZ1500 (inserts into 38mm ISO photoport when phototube is removed)	D50NLC	D63NLC	D10NLC	
INVERTED				
Diaphot 300/200, Eclipse TE200/300 sideport, TS100-F (38mm ISO photoport when phototube is removed)	N/A	N/A	D10NLC	
TE2000 U&E frontport	D50TEC	D63TEC	D10TEC	D10TEF
TE2000 S,U&E sideport	N/A	N/A	D10NLC	
METALLURGICAL				
Epiphot 300/200 (38mm ISO photoport when phototube is removed)	N/A	N/A	D10NLC	
MEASURING				
MM40/MM60 (inserts into 38mm ISO photoport)	D50NLC	D63NLC	D10NLC	
OLYMPUS				
COMPOUND				
BX series, AX Provis series, MX series, CX series (replaces Olympus phototube U-SPT)	D50BXC	D63BXC	D10BXC	D10BXF
BH-2 series: BHT, BHTU, BHS, BHM (replaces top part of phototube by removing three screws. Note: will not work in BH-2 tilting trinoc 3-LC407)	D50BHC	D63BHC	D10BHC	
BH, CX40, CH, CH-2, CH30 trinocular with 25mm phototube	N/A	N/A	*D10PCC	
INVERTED				
IX2, CKX series (U-SPT phototube removed)	D50BXC	D63BXC	D10BXC	D10BXF
IX sideport	D50IXC	D63IXC	D10IXC	D10IXF
IX trinocular head	D50BXC	D63BXC	D10BXC	D10BXF
IX51, IX71, IX81, GX51/71	D50BXC	D63BXC	D10BXC	D10BXF
CK, CK40, CK-2 with 25mm phototube	N/A	N/A	*D10PCC	
PME3 Metallurgical	N/A	N/A	D10P3C	
PMG Series Metallurgical	N/A	N/A	D10PGC	
GX Series Metallurgical	N/A	N/A	D10GXC	
STEREO				
SZIIITR and X-TR with 25mm phototube	N/A	N/A	*D10PCC	
SZX9, SZX12	D50BXC	D63BXC	D10BXC	
REICHERT (LEICA)				
COMPOUND				
Microstar IV	D50ADC	D63ADC	D10ADC	
Diastar	D50ADC	D63ADC	D10ADC	

	C-MOUNT			F-MOUNT
UNITRON				
STEREO				
ZST	N/A	N/A	*D10PCC	
WILD (LEICA)				
STEREO				
All new stereos with removable phototube that reveals 38mm ISO photoport; including M3, M5, M7, M8, M10	D50NLC	D63NLC	D10NLC	
MACROSCOPE				
M420 (inserts into 38mm ISO photoport)	D50NLC	D63NLC	D10NLC	
ZEISS				
COMPOUND				
Axioskop, Axioplan, Axiophot, Axiotron, Axioskop-40	D50ZAC	D63ZAC	D10ZAC	
Axiolab, Axioplan-2, Axiophot-2, Axiotech, Axioskop-2, Axiostar, new Standard trinocular tube (Zeiss part number 45 29 02) (Note: will not work in dual port trinoc)	D50ZNC	D63ZNC	D10ZNC	D10ZNF
Universal, Photomicroscope II & III, UEM, Ultraphot IIIB, Axiomat (replaces phototube in all models)	D50ZUC	D63ZUC	D10ZUC	
Standard Trinoc with 25mm phototube 47 30 26, 47 30 28, 47 30 29, 45 29 03	N/A	N/A	*D10PCC	
STEREO				
SV6, SV8, SV11, Stemi 2000-C, Stemi DRC	D50ZNC	D63ZNC	D10ZNC	D10ZNF
INVERTED				
Axiovert models 100, 135, 135M, 200, IM series when used with new Standard trinocular tube (45 29 02)	D50ZNC	D63ZNC	D10ZNC	D10ZNF
Axiovert models 10, 35, 35M, 405M	D50ZAC	D63ZAC	D10ZAC	
IM series when used with old Standard phototube (25mm outside diameter)	N/A	N/A	*D10PCC	
MISCELLANEOUS				
Eyepiece tube with 23.2mm inside diameter eyetube	N/A	N/A	*D10PCC	
25mm Phototube with 23.2mm inside diameter phototube (such as Meiji, Swift)	N/A	N/A	*D10PCC	

1.0x 3 Chip Direct Image Projection Couplers	Sony ½" ENG	Non-Sony ½" ENG	C-Mount	
Olympus BX series, SZX series	D10BXS	D10BXN	D10BXTC	
Nikon E200, E400, E600	D10NES	D10NEN	D10NETC	

Note: If the microscope to be adapted is not listed in this chart, the HR Series must be used. See pages 14-21.

*The D10PCC is a non-parfocal adapter. Short working distance objectives may hit the specimen before achieving focus on the TV monitor. For a parfocal solution, see the HR Series on pages 14-21.

1CCD CAMERA COUPLERS / HR SERIES

HR Series for C-Mount and Nikon “F” Mount Cameras

Benefits of the HR-Series System

Variety of Magnifications
Variety of coupler magnifications allow for maximum field of view size or increased magnification on TV monitor.

Variety of Camera Mounts
Variety of camera mounts allow attachment of single chip, video and digital cameras.

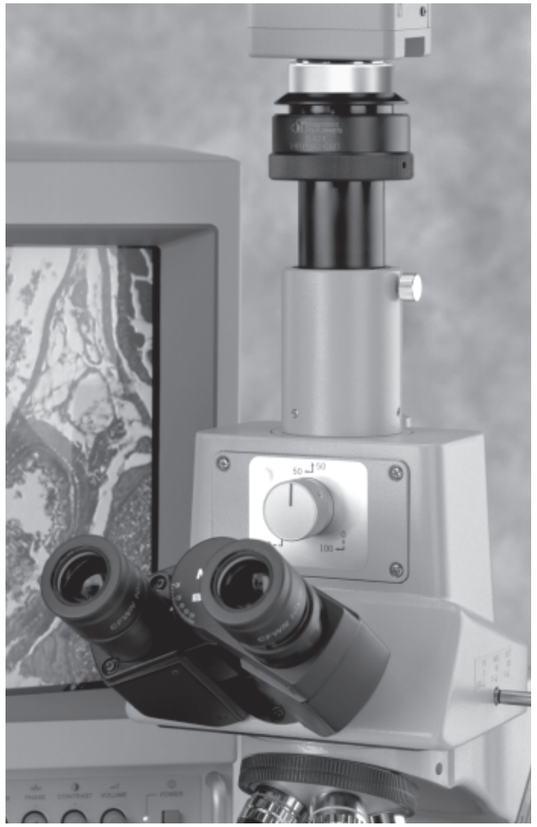
Interchangeability
Adaptable to virtually any microscope allowing the sharing of video cameras among different microscope models /brands in the same laboratory.

High Resolution
High resolution optics provide sharp, high contrast, flat field images. The HR & HRP couplers are optimized for use with video cameras. The HRD & HRU couplers have been specially designed to give higher resolution with digital cameras and features a fully multi-coated lens system. The HRU is an apochromatic, ultrawide field of view coupler for digital cameras.

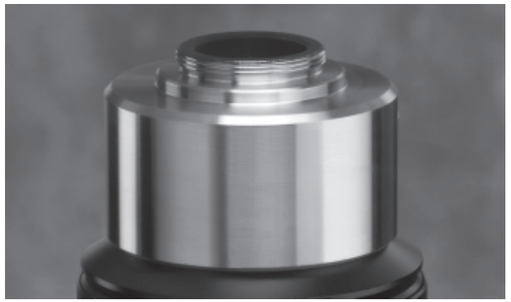
Precise Focusing
Precise, easy to use focusing mechanism for parfocality adjustment. A lockable twist style focus mechanism is standard on all HR, HRP, HRD & HRU couplers.

Elegant Finish
Black anodized satin finish adds elegant look to the system.

Note: Older microscopes that use compensating optics may produce images with lateral chromatic abberation and spherical abberations uncorrected (see Appendix 4).



HRP042-CMT and O-CLAMP to attach 1/2" CCD camera to Nikon Optiphot



C-Mount Style



Bayonet Mount Style (available for Nikon “F”)

The System . . .



Camera Mount
The HR/HRP/HRD/HRU coupler systems can adapt C-mount and Nikon “F” mount video or digital cameras. The C-mount style is found on single chip analog CCD cameras, some cooled chip CCD cameras and some digital cameras. The Nikon “F” bayonet style is found on digital CCD cameras.

Parfocalizing Adjustment
A twist style parfocalizing adjustment is standard on all couplers. This focusing mechanism allows the user to achieve simultaneous focus through the microscope eyepieces and TV monitor. All versions have a handy focus lock to prevent movement of the collar once the adjustment is made.

HR Coupler Magnification
Each HR/HRP/HRD/HRU coupler contains a relay lens to project the microscope intermediate image onto the camera CCD chip. A variety of magnifications are available which allow the user to achieve the desired field of view for various CCD formats (1/3," 1/2," 2/3," etc...). See Appendix 2 for field of view diagrams. The new HRD & HRU series couplers are specially designed to provide higher resolution with digital cameras.

Bottom Clamp
Because microscope phototubes vary greatly in size and dimensions, we use a variety of microscope bottom clamps to adapt our couplers to virtually every microscope in the marketplace. These clamps slide over the end of the video coupler and provide secure attachment to the microscope. The HR Series video coupler and bottom clamp typically adapt to the vertical phototube or port (phototube removed) in compound and stereo microscopes.
On inverted microscopes, the phototube or photoport is usually on the side of the microscope. If the microscope does not have a phototube, the coupler can sometimes be adapted to the microscope eyepiece tube.

1CCD CAMERA COUPLERS / HR & HRP SERIES

Selection Guide

How To Choose:

1. **Select your microscope's objective NA**
2. **Select CCD format size**
3. **Select field of view** (to visualize the different field of view sizes achieved with each magnification, see Appendix 2 on pages 36-40)
4. **Select bottom clamp**

Example . . .

The customer wants to adapt a Sony DXC-107 C-mount analog camera with a 1/2" CCD chip onto a Zeiss Axiovert 135 Inverted microscope with high NA apochromat objectives. The customer wants the widest field of view possible on the TV monitor.

Recommended Coupler…HRP042-CMT
Recommended Bottom Clamp…ZN-CLAMP

1 Do the microscope's objectives have standard numerical aperture (N.A.) or high N.A. *(To determine this see chart below)*

Standard N.A. HR Series

2 Select the CCD format size (1/3," 1/2," 2/3," 1")

- **1/3"** *(3.6mm x 4.8mm)* or **1/2"** *(4.8mm x 6.4mm)*
- **2/3"** *(6.6mm x 8.8mm)*
- **1"** *(9.6mm x 12.8mm)*

3 Choose desired field of view *(see Appendix 2 for field of view diagrams)*

(magnification)	catalog #
Widest field of view	(0.55x) HR055-CMT
Smaller, magnified field of view	(0.70x) HR070-CMT (1.0x) HR100-CMT
Widest field of view	(0.70x) HR070-CMT
Smaller, magnified field of view	(1.0x) HR100-CMT
Widest field of view	(1.0x) HR100-CMT

High N.A. HRP Series

2 Select the CCD format size (1/3," 1/2," 2/3," 1")

- **1/3"** *(3.6mm x 4.8mm)* or **1/2"** *(4.8mm x 6.4mm)*
- **2/3"** *(6.6mm x 8.8mm)*
- **1"** *(9.6mm x 12.8mm)*

3 Choose desired field of view *(see Appendix 2 for field of view diagrams)*

Widest field of view	(0.42x) HRP042-CMT
Smaller, magnified field of view	(0.60x) HRP060-CMT (1.0x) HRP100-CMT
Widest field of view	(0.60x) HRP060-CMT
Smaller, magnified field of view	(1.0x) HRP100-CMT
Widest field of view	(1.0x) HRP100-CMT

4 Select Bottom Clamp *Pages 20-21.*

Which version…HR or HRP?

Both HR and HRP series couplers are listed as choices for 1/3", 1/2", 2/3" and 1" format single CCD cameras. The HR series will produce a sharp, flat-field image with objectives that have up to a "standard" Numerical Aperture (NA) for their magnification (see table). Typically, achromats, and plan achromats have a "standard NA". As the NA of the objective goes higher than the "standard NA", the image will begin to lose sharpness outside of the center field of view area. The HRP series has been designed to give a sharp, flat-field image with all the objectives including apochromats, fluorites, and research grade plan achromats.

Use the HRP version if…

the objective magnification is:	and the objective NA is greater than:
1x	0.02
1.25x	0.03
2x	0.04
4x	0.08
5x	0.10
10x	0.20
20x	0.40
40x	0.80
50x	1.00
100x	1.30

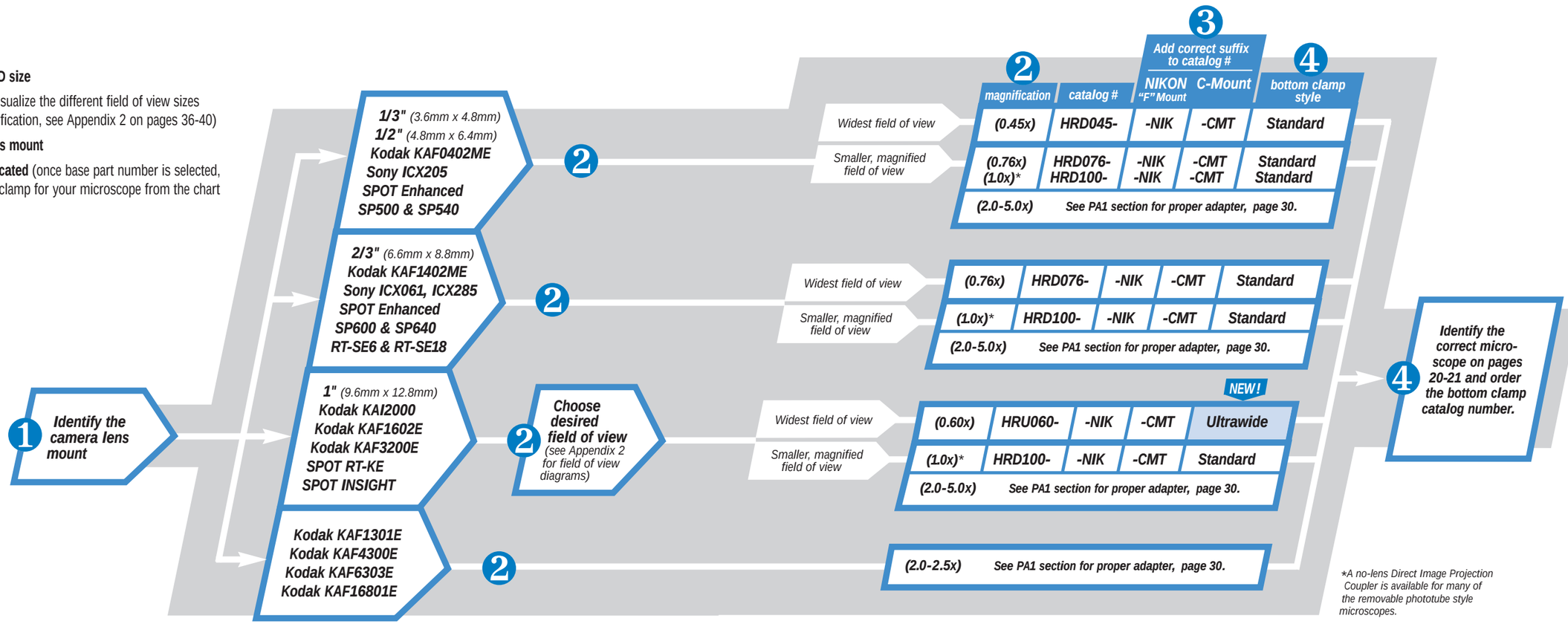
Note: The Numerical Aperture (NA) value is usually indicated on the side of the microscope objective. In general, stereo microscopes can be considered to have "Standard N.A."

1CCD CAMERA COUPLERS / HRD & HRU SERIES

Selection Guide

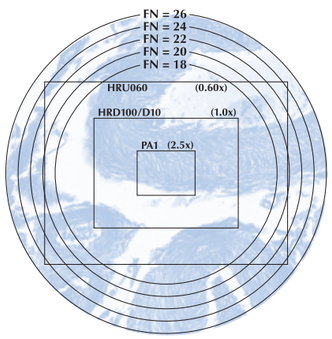
How To Choose:

1. **Select your camera's CCD size**
2. **Select field of view** (to visualize the different field of view sizes achieved with each magnification, see Appendix 2 on pages 36-40)
3. **Select your camera's lens mount**
4. **Go to page numbers indicated** (once base part number is selected, locate the proper bottom clamp for your microscope from the chart on pages 12-13)



*A no-lens Direct Image Projection Coupler is available for many of the removable phototube style microscopes.

NEW!



Ultrawide Field of View

New HRU060-Ultrawide Field of View Apochromatic Coupler

This coupler has a field number of 25mm to give you the widest field of view possible with our SPOT RT and Insight Digital Cameras. This field of view is often available even on conventional trinocular microscope viewing heads.

Ultrawide vs. Standard Field of View
What makes an HRU060 ultrawide field coupler different from an HRD060 standard field coupler? It is the size of the image the bottom lens captures. The ultrawide design captures a 26mm diameter image, whereas a standard coupler captures a 19mm diameter image. Capture and correction of this larger field of view requires larger and more exotic apochromatic glass lenses.

1CCD CAMERA COUPLERS / HR SERIES

HR Series Microscope Bottom Clamp Chart

MICROSCOPE		STANDARD	ULTRAWIDE
AMERICAN OPTICAL (LEICA)			
COMPOUND	Microstar 10, 110, 120 and Epistar	AO1-CLAMP	UCAM
	Diastar, Microstar IV	AO2-CLAMP	UCAD
AUS JENA			
COMPOUND	Jenaval, Jenamed, Jenapol, Jenavert	J-CLAMP	N/A
BAUSCH & LOMB (LEICA)			
COMPOUND	Balplan & MicroZoom	BL1-CLAMP	UCBB
STEREO	Stereozoom 6	BL1-CLAMP	UCBB
	Stereozoom 7 with 31-27-17 camera kit (slip in port only)	BL2-CLAMP	N/A
BIORAD			
CONFOCAL	Viewscan Confocal Microscope	BR-CLAMP	N/A
LEICA* (also see American Optical, Bausch & Lomb, Leitz, Reichert, Wild)	Note: Field not completely flat at edges when used on Leica DM series scopes.		
COMPOUND	ATC 2000 with part # 1945	P-CLAMP	N/A
	DMR series, fits FSA tube adapter, TV tube adapter, Variotube and DMRD (does not fit Photo TV Module); DMLS clinical scope, DMLB, DMLB, DMRB, DMLP, DMC comparison microscope	L-CLAMP	UCDM
	DMR HC optics series	HC-CLAMP	N/A
STEREO	SZ6	BL1-CLAMP	UCBB
	SZ7	BL2-CLAMP	N/A
	MS5, MZ6, MZ8, MZ12, MZAPO, GZ6 with 13410302 phototube (with 38mm ISO photoport)	NLW-CLAMP	UCNL
	MS5, MZ6, MZ8, MZ12, MZFL3, MZAPO into new phototube HU (446 174), MZ16 video/photo objective 1.0x (445 930), video/photo objective H (445 931); all with 37mm photoport	L-CLAMP	UCDM
	S6D Stereo, S8APO	L-CLAMP	UCDM
INVERTED	DMIL	NLW-CLAMP	UCNL
	DMIRB	L-CLAMP	UCDM
	DMIL, DMIRB with HC optics series	HC-CLAMP	N/A
MACROSCOPE	M-420 with 38mm ISO photoport	NLW-CLAMP	UCNL
	M-420 with 37mm photoport	L-CLAMP	UCDM
LEITZ (LEICA)			
COMPOUND	Dialux, Laborlux, Ortholux, Orthoplan, Diaplan, Ergolux, Aristoplan, Aristomet, Metallux, Metalloplan (for all models, inserts into 38mm ISO photoport)	NLW-CLAMP	UCNL
INVERTED	Diavert, Labovert, Fluovert, Metallovert (inserts into 38mm ISO photoport)	NLW-CLAMP	UCNL
MITUTOYO			
COMPOUND	Finescope FS60 (non-tilting head)	FS60-CLAMP	UCMA
	Finescope FS60T (tilting head)	FS60T-CLAMP	UCMB
	Finescope FS110	FS110-CLAMP	UCMC
NIKON			
COMPOUND	Eclipse series, Optiphot(2), Labophot(2), Alphaphot(2), all with phototube, Multi-Image module, Microphot (with Nikon phototube 79429)	O-CLAMP	N/A
	Microphot; attaches to top, front ENG bayonet port	NM-CLAMP	UCNM
	Eclipse series, Optiphot-2, Labophot-2, Alphaphot-2, Optiphot 100S, 150, 200, 300 (all with phototube removed; inserts into 38mm ISO photoport) (NOT YIDP phototube)	NLW-CLAMP	UCNL
	Fluophot, Metaphot, Biophot	FM-CLAMP	N/A
STEREO	SMZ800, SMZ1000, SMZ1500, SMZ-U (with phototube), SMZ-2T, SMZ10A (with phototube)	O-CLAMP	N/A
	SMZ800, SMZ1000, SMZ1500, SMZ-U and SMZ-10A without phototube (inserts into 38mm ISO photoport)	NLW-CLAMP	UCNL
	SMZ-10 (CAUTION: SMZ-10 contains 0.6x reduction lens. This must be taken into consideration when choosing an HR/HRP coupler.)	S-CLAMP	N/A
	SMZ-1 (clamps to eyepiece tubes)	SMZ1-CLAMP	N/A
INVERTED	Eclipse TE300/200, TS100-F, Diaphot TMD, Diaphot 300/200 (with side port phototube), TMS-F, Epiphot TME	O-CLAMP	N/A
	Eclipse TE300/200, TS100-F, Diaphot 300/200 with side port phototube removed (inserts into 38mm ISO photoport), Epiphot 200/300	NLW-CLAMP	UCNL
	Eclipse TE2000 S,U&E sideport	NLW-CLAMP	UCNL
	Eclipse TE2000 U&E frontport (beware of long extension)	TE-CLAMP	N/A
	Diaphot Quantum bottom port	DQ-CLAMP	N/A

*Note: if Leica catalog # ends in 802 use NLW/UCNL clamps, if ends in 227 or 228 use HC clamp.

MICROSCOPE		STANDARD	ULTRAWIDE
MEASURING	MM-11C, MM-11U, MM-22, MM-22U, MM40, MM60	O-CLAMP	N/A
	MM40, MM60 (with phototube removed; inserts into 38mm ISO photoport)	NLW-CLAMP	UCNL
TOOLMAKERS	TM-10 toolmakers microscope	TM-CLAMP	N/A
OLYMPUS			
COMPOUND	BH-2 series (BHS, BHT, BHTU, BHM), VANOX (with AH2-ADF for new VANOX), BX, AX, MX series (with U-SPT phototube)	V-CLAMP	UCBH
	BX, CX series, AX Provis series (with U-SPT phototube removed), BX U-DPT double port (back port only, front port uses V-CLAMP)	BMX-CLAMP	UCBX
	BH, CK40, CH, CH30 and CH-2 series (with 25mm phototube)	P-CLAMP	N/A
STEREO	SZX, SZH and SZ series (with phototube)	V-CLAMP	N/A
	SZIII-TR and X-TR series (25mm phototube)	P-CLAMP	N/A
	SZX series (with phototube removed)	BMX-CLAMP	UCBX
INVERTED	IMT-2 sideport or trinoc head	V-CLAMP	N/A
	CK, CK40 and CK-2 series (25mm phototube)	P-CLAMP	N/A
	IX2, CKX series (U-SPT phototube removed)	BMX-CLAMP	UCBX
	IX2 series (U-SPT phototube installed)	V-CLAMP	N/A
	IX series with phototube (for sideport or trinocular port)	V-CLAMP	N/A
	IX series on trinocular head	IX-CLAMP	UCIX
	IX series sideport (with phototube removed)	IX-CLAMP	UCIX
	IX51, IX71, IX81 series, GX51/71	BX-CLAMP	UBX
REICHERT (LEICA)			
COMPOUND	Microstar IV and Diastar	AO2-CLAMP	UCAD
	Polyvar, Polyvar-2, Polyvar MET, side port on DUAL REFLEX MODULE (TV image will be mirror of eyepiece image) Note: for Polyvar SC, please call.	RPV2-CLAMP	N/A
INVERTED	MEF3, MEF4 sideport on dual reflex module (TV image will be mirror of eyepiece tube) Note: will not work on MEF2.	MEF3-CLAMP	N/A
UNITRON			
STEREO	Model ZST	P-CLAMP	N/A
	Versamet 3	U-CLAMP	N/A
WILD (LEICA)			
COMPOUND	Old Wild M11/20/40/50 with 25mm phototube	P-CLAMP	N/A
STEREO	M3, M5, M7, M8, M10 (inserts into 38mm ISO photoport)	NLW-CLAMP	UCNL
	Older stereos with non-removable phototube (30mm ID phototube)	ZW-CLAMP	UCZW
MACROSCOPE	M-400 (replaces camera back)	M400-CLAMP	N/A
	M-420 (for 38mm ISO photoport)	NLW-CLAMP	UCNL
ZEISS			
COMPOUND	Axioskop, Axioplan, Axiophot, Axiotron, Axiotron-2, Axioskop-40	Z-CLAMP	UCZA
	Axiolab, Axiotech, Axioplan-2, Axiophot-2, Axioskop-2, Axiostar, new Standard trinoc (Zeiss part 45 29 02)	ZN-CLAMP	UCZN
	Universal, Photomicroscope II & III, UEM, Ultraphot IIIB (replaces phototube), Axiomat	ZU-CLAMP	UCZU
	Old Standard trinoc with 25mm OD phototube (part 47 30 26, 47 30 28, 47 30 29), new Standard trinoc (45 29 03)	P-CLAMP	N/A
STEREO	SV6, SV8, SV11, Stemi 2000-C, Stemi DRC	ZN-CLAMP	UCZN
	Old stereos with non-removable phototube (Zeiss part 47 50 83 and 47 50 84), typically models SR, DR, DRC and SV8 (30mm ID tube)	ZW-CLAMP	UCZW
	SR, DR, DRC, SV8 with phototube (47 50 83) removed	ZS-CLAMP	N/A
INVERTED	Axiovert models 100, 135, 135M, 200 and IM series when used with new Standard trinoc (Zeiss part 45 29 02) or bottom port	ZN-CLAMP	UCZN
	Axiovert models 10, 35, 35M, 405M	Z-CLAMP	UCZA
	Axiovert 25C, CFI (Note: Does not support HR & HRP series, also select next higher magnification.)	ZV-CLAMP	N/A
	IM-series when used with old or new Standard trinoc utilizing 25mm OD phototube	P-CLAMP	N/A
MISCELLANEOUS			
	Eyepiece tube with 23.2mm ID, outside diameter range 25mm-40mm (clamps to eyetube)	B-CLAMP	N/A
	Eyepiece tube with 30mm ID, outside diameter range up to 41mm (clamps to eyetube)	ZW-CLAMP	UCZW
	Any microscope with a 25mm outside diameter, 23.2mm inside diameter phototube (such as Meiji,Swift)	P-CLAMP	N/A
	LECO 300 microscope	L300-CLAMP	N/A
	Rathenhower Stereo	RTH-CLAMP	N/A
	Sutter Filter Wheel	FW-CLAMP	N/A

3CCD CAMERA COUPLERS / T-SERIES

T45 & T60 Series for 3 CCD Cameras

Benefits of the T-Series

New Optics

Formerly known as the HRT045 and HRT060 series, our new, improved optics provide crisp, clear images with high and low N.A. objectives. The 0.45x and 0.60x lenses are now fully multi-coated for better light transmission and contrast. Most microscope manufacturers do not fully multi-coat their video coupler lens systems.

Minimize Color Shading

A unique bottom field lens system uses one of four available field lenses (for each coupler magnification) to optically match the coupler to the microscope being used. This is done in order to minimize color shading (pink to green background color) observed on monitor.

Economical

Compared to major microscope brand alternatives.

Interchangeability

Adaptable to almost all microscopes both current and discontinued.

Precise Focus

Utilizes smooth helical twist ring focus with focus lock.

Variety of Magnifications

T45 series (0.45x) provides standard field of view size with 1/2" format 3CCD and T60 series (0.60x) can magnify images on the monitor to utilize more pixels for a given specimen.

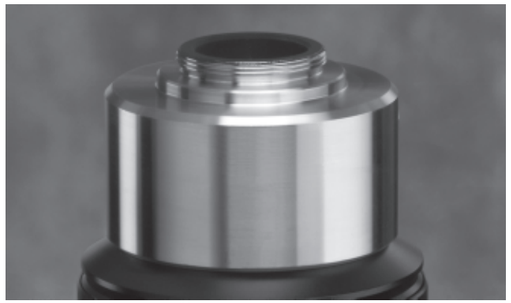
Variety of Camera Mounts

Lens mount available for Sony 1/2" bayonet, non-Sony 1/2" bayonet, 2/3" bayonet and C-mount (see examples below).

Note: Older microscopes that use compensating optics may produce images with lateral chromatic abberation and spherical abberations uncorrected (see Appendix 4).



0.45x (T4530CS) 3CCD Coupler for Sony 1/2" Bayonet camera and Nikon Optiphot with Quad head



C-Mount Style



Bayonet Mount Style (Sony 1/2," non-Sony 1/2" and ENG 2/3")

The System . . .



Camera Mount / Parfocalizing Adjustment

The lens mount features a twist style helical focus with focus lock for Sony 1/2" bayonet mount, non-Sony 1/2" bayonet mount and C-mount cameras. The focusing mechanism allows the user to achieve simultaneous focus through the microscope eyepieces and TV monitor.

Relay Lens

Variety of lens magnifications (0.45x and 0.60x) provide a wide field of view or magnified image for different CCD format sizes (1/3," 1/2," 2/3").
See Appendix 2 for field of view diagrams.

Field Lens

Four field lenses are available for each coupler magnification in order to optically match the 3CCD coupler system to the microscope being used. By selecting a 3CCD coupler with the right field lens, color shading (pink to green color on monitor) can be minimized.

Bottom Clamp

Because microscope phototubes vary greatly in size and dimensions, we use a variety of microscope bottom clamps to adapt our video couplers to virtually every microscope in the marketplace. These clamps slide over the end of the video coupler and provide secure attachment to the microscope. The 3CCD video coupler and bottom clamp typically adapt to the vertical phototube or port (phototube removed) in compound and stereo microscopes. On inverted microscopes, the phototube or photoport is usually on the side of the microscope. If the microscope does not have a phototube or port, the coupler can be adapted to the microscope eyepiece tube. **Note: A bottom clamp is included if the 3CCD coupler is ordered as a system.**

3CCD CAMERA COUPLERS / T-SERIES

Selection Guide

How to Order a 3CCD Coupler

Diagnostic 3CCD couplers are no longer sold as a "coupler and bottom clamp" (as in former HRT045-ENG12, HRT060-ENG12NS, etc.). Because the T45 and T60 3CCD couplers have interchangeable bottom field lenses (four for each magnification), they are not universally adaptable to all microscopes. It is important to match the right field lens to the microscope configuration being used to achieve the least amount of color shading and to avoid vignetting.

The T45 and T60 series video couplers can be ordered as one system or by the four individual components: focus mount, relay lens assembly, field lens and microscope bottom clamp.

Option #1—Ordering a 3CCD Coupler as a Complete System

Use this method if ordering a 3CCD coupler to attach one 3CCD camera to one brand/model microscope. A system ordering guide is provided on pages 26-29. The catalog numbers given are for a complete coupling system including the focus mount, relay lens assembly, field lens and microscope bottom clamp (see system diagram on page 23).

Note: For some microscope configurations, there is an "X" in the catalog number which indicates that the field lens required is not known at the time of this printing. **Please call before ordering an "X" version as updated information about the field lens may be available.** For these microscopes, all four field lenses are sent. During installation, the proper field lens is determined and the remaining three lenses can be returned for a credit.

Example:
A 3CCD coupler is needed for an Optronics 1/2" 3CCD with a C-mount lens mount. The microscope being used is a Zeiss Axioskop. The customer wants the widest field of view possible.

Step A:
Use the flow chart on page 25 to determine the magnification coupler needed to give the widest field of view for a 1/2" 3CCD camera. The 0.45x (T45) coupler is the proper choice.

Step B:
Find the correct microscope category from the charts on pages 26-29. Look under Zeiss (page 29) Compound for "Axioskop."

Step C:
Identify the proper catalog number under the coupler magnification desired and camera lens mount required. In this case, the 0.45x (T45) with a C-mount is the proper column. **The correct catalog number would be T453ZAC.**

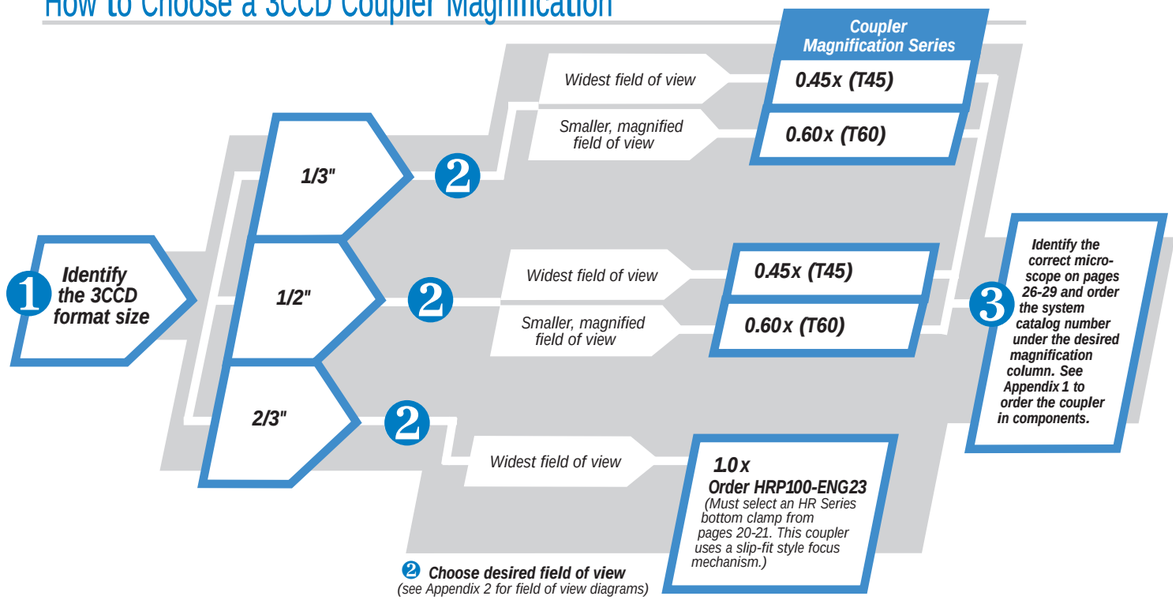
Option #2—Ordering a 3CCD Coupler by Components

Use this method if:

- The 3CCD camera will be used on more than one microscope configuration.
- Constructing a demonstration kit for various 3CCD cameras and microscopes.
- For ordering larger quantities of 3CCD couplers for stocking purposes.

The T45 and T60 series can be ordered in four separate components: focus mount, relay lens assembly, field lens and microscope bottom clamp. **See Appendix 1 for a complete guide on "Ordering by Components."**

How to Choose a 3CCD Coupler Magnification



3CCD CAMERA COUPLERS / T-SERIES

3CCD Coupler Selection Chart

❶ SELECT MAGNIFICATION ➢ / ❷ IDENTIFY CAMERA LENS MOUNT ➢ / ❸ IDENTIFY MICROSCOPE ⋎	T45 0.45x Series			T60 0.60x Series		
	For Sony ½" Bayonet	For Non-Sony ½" Bayonet	For C-Mount	For Sony ½" Bayonet	For Non-Sony ½" Bayonet	For C-Mount
AMERICAN OPTICAL (LEICA)						
COMPOUND						
Diastar, Microstar IV	T451ADS	T451ADN	T451ADC	T601ADS	T601ADN	T601ADC
Epistar	T451AMS	T451AMN	T451AMC	T601AMS	T601AMN	T601AMC
Microstar 10, 110, 120	T451AMS	T451AMN	T451AMC	T601AMS	T601AMN	T601AMC
AUS JENA						
COMPOUND						
Jenaval, Jenamed, Jenapol, Jenavert	T45XJVS	T45XJVN	T45XJVC	T60XJVS	T60XJVN	T60XJVC
BAUSCH & LOMB (LEICA)						
COMPOUND						
Balplan, Microzoom	T451BBS	T451BBN	T451BBC	T601BBS	T601BBN	T601BBC
STEREO						
Stereozoom 6	T452BBS	T452BBN	T452BBC	T602BBS	T602BBN	T602BBC
Stereozoom 7 (newer slip in port)	T452BSS	T452BSN	T452BSC	T602BSS	T602BSN	T602BSC
BIORAD						
CONFOCAL						
Viewscan confocal	T45XBRS	T45XBRN	T45XBRC	T60XBRS	T60XBRN	T60XBRC
LEICA (also see American Optical, Bausch & Lomb, Leitz, Reichert, Wild)						
COMPOUND (CAUTION: Field not completely flat at edges when using 3CCD Coupler with Leica DM series scopes.)						
DMR with FSA tube adapter, TV tube adapter	T453DMS	T453DMN	T453DMC	T603DMS	T603DMN	T603DMC
DMR with variotube	T45XDMS	T45XDMN	T45XDMC	T60XDMS	T60XDMN	T60XDMC
DMR with DMRD, DMLP, DMRB, DMC	T452DMS	T452DMN	T452DMC	T602DMS	T602DMN	T602DMC
DMR, HC optics series	T452HCS	T452HCN	T452HCC	T602HCS	T602HCN	T602HCC
DMLB laboratory scope	T452DMS	T452DMN	T452DMC	T602DMS	T602DMN	T602DMC
DMLS clinical scope	T452DMS	T452DMN	T452DMC	T602DMS	T602DMN	T602DMC
STEREO						
GZ6 with 13410302 phototube	T452NLS	T452NLN	T452NLC	T602NLS	T602NLN	T602NLC
MS5, MZ6, MZ8, MZ12, MZAPO with 38mm ISO photoport	T452NLS	T452NLN	T452NLC	T602NLS	T602NLN	T602NLC
MS5, MZ6, MZ8, MZ12, MZAPO with 38mm ISO photoport (with coaxial illuminator)	T453NLS	T453NLN	T453NLC	T603NLS	T603NLN	T603NLC
MS5, MZ6, MZ8, MZ12, MZAPO, MZFL3, MZ16 with new phototube HU (446 174), video/photo objective 1.0x (445 930), video/photo objective H (445 931)	T452DMS	T452DMN	T452DMC	T602DMS	T602DMN	T602DMC
S6D series, S8APO	T45XDMS	T45XDMN	T45XDMC	T60XDMS	T60XDMN	T60XDMC
INVERTED						
DMIL	T452NLS	T452NLN	T452NLC	T602NLS	T602NLN	T602NLC
DMIRB	T453DMS	T453DMN	T453DMC	T603DMS	T603DMN	T603DMC
DMIL, DMIRB with HC optics	T45XHCS	T45XHCN	T45XHCC	T60XHCS	T60XHCN	T60XHCC
MACROSCOPE						
M420 with 38mm ISO photoport	T452NLS	T452NLN	T452NLC	T602NLS	T602NLN	T602NLC
M420 with new 37mm photoport	T452DMS	T452DMN	T452DMC	T602DMS	T602DMN	T602DMC
LEITZ (LEICA)						
COMPOUND						
Dialux, Laborlux, Ortholux, Diaplan, Aristoplan, Aristomet, Orthoplan, Metalloplan	T451NLS	T451NLN	T451NLC	T601NLS	T601NLN	T601NLC
Dialux, Laborlux, Ortholux, Diaplan, Ergolux, Aristoplan, Aristomet, Mettalux, Orthoplan, Metalloplan with reflected light	T452NLS	T452NLN	T452NLC	T602NLS	T602NLN	T602NLC
Ortholux (old black version)	T452NLS	T452NLN	T452NLC	T602NLS	T602NLN	T602NLC
INVERTED						
Diavert, Labovert, Fluovert, Metallovert	T451NLS	T451NLN	T451NLC	T601NLS	T601NLN	T601NLC

❶ SELECT MAGNIFICATION ➢ / ❷ IDENTIFY CAMERA LENS MOUNT ➢ / ❸ IDENTIFY MICROSCOPE ⋎	T45 0.45x Series			T60 0.60x Series		
	For Sony ½" Bayonet	For Non-Sony ½" Bayonet	For C-Mount	For Sony ½" Bayonet	For Non-Sony ½" Bayonet	For C-Mount
MITUTOYO						
COMPOUND						
Finescope FS60	T45XMAS	T45XMAN	T45XMAC	T60XMAS	T60XMAN	T60XMAC
Finescope FS60T	T45XMBS	T45XMBN	T45XMBC	T60XMBS	T60XMBN	T60XMBC
Finescope FS110	T45XMCS	T45XMCN	T45XMCC	T60XMCS	T60XMCN	T60XMCC
NIKON						
COMPOUND						
Eclipse 800, E1000 with phototube	T453OCS	T453OCN	T453OCC	T603OCS	T603OCN	T603OCC
Eclipse 800, E1000 into 38mm ISO photoport	T453NLS	T453NLN	T453NLC	T603NLS	T603NLN	T603NLC
E600/400, E200 (w/E2-TF trinoc):						
with "T" tube	T451OCS	T451OCN	T451OCC	T601OCS	T601OCN	T601OCC
with "F" tube	T45XOCS	T45XOCN	T45XOCC	T60XOCS	T60XOCN	T60XOCC
with "TV" tube	T452NLS	T452NLN	T452NLC	T602NLS	T602NLN	T602NLC
Optiphot, Labophot (and -2's) with phototube:						
with "T" head	T453OCS	T453OCN	T453OCC	T603OCS	T603OCN	T603OCC
with "F" head	T451OCS	T451OCN	T451OCC	T601OCS	T601OCN	T601OCC
with Quad head	T452OCS	T452OCN	T452OCC	T602OCS	T602OCN	T602OCC
with "T," "F" or Quad head & Vertical Fluorescence Illuminator (EDF2 or EDF3)	T454OCS	T454OCN	T454OCC	T604OCS	T604OCN	T604OCC
Optiphot-2, Labophot-2 w/o phototube:						
with "T" head	T453NLS	T453NLN	T453NLC	T603NLS	T603NLN	T603NLC
with "F" head	T451NLS	T451NLN	T451NLC	T601NLS	T601NLN	T601NLC
with "T" or "F" head & Vertical Fluorescence	T454NLS	T454NLN	T454NLC	T604NLS	T604NLN	T604NLC
Alphaphot (and -2) with phototube	T451OCS	T451OCN	T451OCC	T601OCS	T601OCN	T601OCC
Alphaphot-2 w/o phototube	T451NLS	T451NLN	T451NLC	T601NLS	T601NLN	T601NLC
Multi-Image Module	T45XOCS	T45XOCN	T45XOCC	T60XOCS	T60XOCN	T60XOCC
Microphot FX, FXA, SA (with ENG adapter 79429)	T454OCS	T454OCN	T454OCC	T604OCS	T604OCN	T604OCC
Microphot FX, FXA, SA in top, front bayonet port	T454NMS	T454NMN	T454NMC	T604NMS	T604NMN	T604NMC
Optiphot 100S, 150, 200, 300 metallurgical with phototube	T452OCS	T452OCN	T452OCC	T602OCS	T602OCN	T602OCC
Optiphot 100S, 150, 200, 300 metallurgical w/o phototube	T452NLS	T452NLN	T452NLC	T602NLS	T602NLN	T602NLC
Fluophot, Metaphot, Biophot	T45XFMS	T45XFMN	T45XFMC	T60XFMS	T60XFMN	T60XFMC
STEREO						
SMZ800, SMZ1000, SMZ1500, SMZ-U with phototube	T453OCS	T453OCN	T453OCC	T603OCS	T603OCN	T603OCC
SMZ800, SMZ1000, SMZ1500, SMZ-U w/o phototube (38mm ISO photoport)	T453NLS	T453NLN	T453NLC	T603NLS	T603NLN	T603NLC
SMZ-2T	T451OCS	T451OCN	T451OCC	T601OCS	T601OCN	T601OCC
SMZ10 (photoport has 0.60x reduction lens)	N/A	N/A	N/A	N/A	N/A	N/A
SMZ10A with phototube	T452OCS	T452OCN	T452OCC	T602OCS	T602OCN	T602OCC
SMZ10A w/o phototube (38mm ISO photoport)	T452NLS	T452NLN	T452NLC	T602NLS	T602NLN	T602NLC
INVERTED						
Diaphot TMD	T451OCS	T451OCN	T451OCC	T601OCS	T601OCN	T601OCC
TS100-F, TE 300/200 Eclipse with phototube	T45XOCS	T45XOCN	T45XOCC	T60XOCS	T60XOCN	T60XOCC
TS100-F, TE 300/200 Eclipse w/o phototube	T45XOCS	T45XOCN	T45XOCC	T60XOCS	T60XOCN	T60XOCC
TMS-F	T451OCS	T451OCN	T451OCC	T601OCS	T601OCN	T601OCC
Diaphot 300/200 with phototube	T454OCS	T454OCN	T454OCC	T604OCS	T604OCN	T604OCC
Diaphot 300/200 w/o phototube	T454NLS	T454NLN	T454NLC	T604NLS	T604NLN	T604NLC
Diaphot Quantum bottom port (under scope)	T45XDQS	T45XDQN	T45XDQC	T60XDQS	T60XDQN	T60XDQC
Epiphot TME	T453OCS	T453OCN	T453OCC	T603OCS	T603OCN	T603OCC
Epiphot 200/300 with phototube (sideport)	T452OCS	T452OCN	T452OCC	T602OCS	T602OCN	T602OCC
Epiphot 200/300 w/o phototube (sideport)	T452NLS	T452NLN	T452NLC	T602NLS	T602NLN	T602NLC
TE2000 S, U&E (sideport)	T45XNLS	T45XNLN	T45XNLC	T60XNLS	T60XNLN	T60XNLC

3CCD CAMERA COUPLERS / T-SERIES

3CCD Coupler Selection Chart

❶ SELECT MAGNIFICATION ➢ ❷ IDENTIFY CAMERA LENS MOUNT ➢ ❸ IDENTIFY MICROSCOPE ⩛	T45 0.45x Series			T60 0.60x Series		
	For Sony ½" Bayonet	For Non-Sony ½" Bayonet	For C-Mount	For Sony ½" Bayonet	For Non-Sony ½" Bayonet	For C-Mount
MEASURING						
MM-11C, MM-11U, MM-22, MM-22U	T453OCS	T453OCN	T453OCC	T603OCS	T603OCN	T603OCC
MM40, MM60 with phototube	T45XOCS	T45XOCN	T45XOCC	T60XOCS	T60XOCN	T60XOCC
MM40, MM60 w/o phototube (38mm ISO photoport)	T45XNLS	T45XNLN	T45XNLC	T60XNLS	T60XNLN	T60XNLC
TOOLMAKERS						
TM-10 toolmakers scope	T45XTMS	T45XTMN	T45XTMC	T60XTMS	T60XTMN	T60XTMC
OLYMPUS						
COMPOUND						
BH, CK40, CH, CH30, CH-2 with 25mm phototube	T451PCS	T451PCN	T451PCC	T601PCS	T601PCN	T601PCC
BH-2 (BHS, BHT, BHTU, BHM)	T451BHS	T451BHN	T451BHC	T601BHS	T601BHN	T601BHC
BH-2 series with intermediate attachment	T452BHS	T452BHN	T452BHC	T602BHS	T602BHN	T602BHC
Vanox with AH2-ADF	T451BHS	T451BHN	T451BHC	T601BHS	T601BHN	T601BHC
BX trinoc or dual port with phototube	T452BHS	T452BHN	T452BHC	T602BHS	T602BHN	T602BHC
BX trinoc or dual port with phototube with reflected light or polarizing attach.	T453BHS	T453BHN	T453BHC	T603BHS	T603BHN	T603BHC
BX trinoc or dual port w/o phototube	T452BXS	T452BXN	T452BXC	T602BXS	T602BXN	T602BXC
BX trinoc or dual port w/o phototube with reflected light or polarizing attach.	T453BXS	T453BXN	T453BXC	T603BXS	T603BXN	T603BXC
BX tilting trinoc (any configuration with phototube)	T454BHS	T454BHN	T454BHC	T604BHS	T604BHN	T604BHC
BX tilting trinoc (any configuration w/o phototube)	T454BXS	T454BXN	T454BXC	T604BXS	T604BXN	T604BXC
CX series (U-SPT phototube removed)	T45XBXS	T45XBXN	T45XBXC	T60XBXS	T60XBXN	T60XBXC
MX series with phototube	T453BHS	T453BHN	T453BHC	T603BHS	T603BHN	T603BHC
MX series w/o phototube	T453BXS	T453BXN	T453BXC	T603BXS	T603BXN	T603BXC
AX 80 with standard trinoc with phototube	T454BHS	T454BHN	T454BHC	T604BHS	T604BHN	T604BHC
AX 80 with standard trinoc w/o phototube	T454BXS	T454BXN	T454BXC	T604BXS	T604BXN	T604BXC
AX 80 with U-Photo attach. with phototube	T454BHS	T454BHN	T454BHC	T604BHS	T604BHN	T604BHC
AX 80 with U-Photo attach. w/o phototube	T454BXS	T454BXN	T454BXC	T604BXS	T604BXN	T604BXC
AX 80 with multi-port attach. with phototube	T45XBHS	T45XBHN	T45XBHC	T60XBHS	T60XBHN	T60XBHC
AX 80 with multi-port attach. w/o phototube	T45XBXS	T45XBXN	T45XBXC	T60XBXS	T60XBXN	T60XBXC
AX 70 with U-Photo attach. with phototube	T452BHS	T452BHN	T452BHC	T602BHS	T602BHN	T602BHC
AX 70 with U-Photo attach. w/o phototube	T452BXS	T452BXN	T452BXC	T602BXS	T602BXN	T602BXC
AX 70 with standard trinoc with phototube	T453BHS	T453BHN	T453BHC	T603BHS	T603BHN	T603BHC
AX 70 with standard trinoc w/o phototube	T453BXS	T453BXN	T453BXC	T603BXS	T603BXN	T603BXC
AX 70 with multi-port attach. with phototube	T45XBHS	T45XBHN	T45XBHC	T60XBHS	T60XBHN	T60XBHC
AX 70 with multi-port attach. w/o phototube	T45XBXS	T45XBXN	T45XBXC	T60XBXS	T60XBXN	T60XBXC
STEREO						
SZH and SZ series	T451BHS	T451BHN	T451BHC	T601BHS	T601BHN	T601BHC
SZIII and X-TR	T451PCS	T451PCN	T451PCC	T601PCS	T601PCN	T601PCC
SZX9, SZX12 with phototube	T45XBHS	T45XBHN	T45XBHC	T60XBHS	T60XBHN	T60XBHC
SZX9, SZX12 w/o phototube	T45XBXS	T45XBXN	T45XBXC	T60XBXS	T60XBXN	T60XBXC
INVERTED						
IX2, CKX series	T45XBXS	T45XBXN	T45XBXC	T60XBXS	T60XBXN	T60XBXC
IX trinoc or sideport with phototube	T454BHS	T454BHN	T454BHC	T604BHS	T604BHN	T604BHC
IX sideport w/o phototube	T454IXS	T454IXN	T454IXC	T604IXS	T604IXN	T604IXC
IX trinoc w/o phototube	T454BXS	T454BXN	T454BXC	T604BXS	T604BXN	T604BXC
IX51, IX71, IX81 series, GX51/71	T454BXS	T454BXN	T454BXC	T604BXS	T604BXN	T604BXC
IMT-2 sideport or trinoc head	T451BHS	T451BHN	T451BHC	T601BHS	T601BHN	T601BHC
CK/CK-2, CK40	T451PCS	T451PCN	T451PCC	T601PCS	T601PCN	T601PCC
RATHENOWER						
STEREO						
SMC, SMT	T45XRSS	T45XRSN	T45XRSC	T60XRSS	T60XRSN	T60XRSC

❶ SELECT MAGNIFICATION ➢ ❷ IDENTIFY CAMERA LENS MOUNT ➢ ❸ IDENTIFY MICROSCOPE ⩛	T45 0.45x Series			T60 0.60x Series		
	For Sony ½" Bayonet	For Non-Sony ½" Bayonet	For C-Mount	For Sony ½" Bayonet	For Non-Sony ½" Bayonet	For C-Mount
REICHERT (LEICA)						
COMPOUND						
Microstar IV	T451ADS	T451ADN	T451ADC	T601ADS	T601ADN	T601ADC
Diastar	T451ADS	T451ADN	T451ADC	T601ADS	T601ADN	T601ADC
Polyvar, Polyvar-2, Polyvar MET (not SC model)	T45XRPS	T45XRPN	T45XRPC	T60XRPS	T60XRPN	T60XRPC
INVERTED						
MEF3, MEF4	T45XMES	T45XMEN	T45XMEC	T60XMES	T60XMEN	T60XMEC
UNITRON						
STEREO						
ZST	T45XPCS	T45XPCN	T45XPCC	T60XPCS	T60XPCN	T60XPCC
WILD (LEICA)						
STEREO						
M3, M5, M7, M8, M10	T452NLS	T452NLN	T452NLC	T602NLS	T602NLN	T602NLC
Older stereos with 30mm ID phototube	T45XZWS	T45XZWN	T45XZWC	T60XZWS	T60XZWN	T60XZWC
MACROSCOPE						
M-400 Macroscope	T45XWMS	T45XWMN	T45XWMC	T60XWMS	T60XWMN	T60XWMC
M-420 Macroscope with 38mm ISO photoport	T452NLS	T452NLN	T452NLC	T602NLS	T602NLN	T602NLC
ZEISS						
COMPOUND						
Axioskop, Axioskop-40	T453ZAS	T453ZAN	T453ZAC	T603ZAS	T603ZAN	T603ZAC
Axioplan	T453ZAS	T453ZAN	T453ZAC	T603ZAS	T603ZAN	T603ZAC
Axioplan-2, Axioskop-2, Axiostar	T454ZNS	T454ZNN	T454ZNC	T604ZNS	T604ZNN	T604ZNC
Axiophot	T454ZAS	T454ZAN	T454ZAC	T604ZAS	T604ZAN	T604ZAC
Axiophot-2	T454ZNS	T454ZNN	T454ZNC	T604ZNS	T604ZNN	T604ZNC
Axiotron, Axiotron-2	T453ZAS	T453ZAN	T453ZAC	T603ZAS	T603ZAN	T603ZAC
Axiolab	T454ZNS	T454ZNN	T454ZNC	T604ZNS	T604ZNN	T604ZNC
Axiotech	T454ZNS	T454ZNN	T454ZNC	T604ZNS	T604ZNN	T604ZNC
Standard trinoc (old 47 30 26, 47 30 28, 47 30 29, 45 29 03)	T45XPCS	T45XPCN	T45XPCC	T60XPCS	T60XPCN	T60XPCC
Standard trinoc (new 45 29 02)	T451ZNS	T451ZNN	T451ZNC	T601ZNS	T601ZNN	T601ZNC
Universal, Photomicroscope II & III, UEM, Ultraphot IIIB, Axiomat	T452ZUS	T452ZUN	T452ZUC	T602ZUS	T602ZUN	T602ZUC
STEREO						
SV6, SV8, SV11	T451ZNS	T451ZNN	T451ZNC	T601ZNS	T601ZNN	T601ZNC
Stemi 2000-C	T452ZNS	T452ZNN	T452ZNC	T602ZNS	T602ZNN	T602ZNC
Stemi DRC	T45XZNS	T45XZNN	T45XZNC	T60XZNS	T60XZNN	T60XZNC
Old Zeiss stereo 30mm ID (SR, DR, DRC, SV8)	T451ZWS	T451ZWN	T451ZWC	T601ZWS	T601ZWN	T601ZWC
Old Zeiss stereo with phototube removed	T451ZSS	T451ZSN	T451ZSC	T601ZSS	T601ZSN	T601ZSC
INVERTED						
Axiovert 10, 35, 35M, 405M	T453ZAS	T453ZAN	T453ZAC	T603ZAS	T603ZAN	T603ZAC
Axiovert 100, 135, 135M with trinocular ports only	T453ZNS	T453ZNN	T453ZNC	T603ZNS	T603ZNN	T603ZNC
Axiovert 100, 135, 135M, 200 with trinocular port and sideport attachment	T451ZNS	T451ZNN	T451ZNC	T601ZNS	T601ZNN	T601ZNC
Axiovert 25, CFI, (Note: select next higher magnification).	T45XZVS	T45XZVN	T45XZVC	T60XZVS	T60XZVN	T60XZVC
IM scope with old Standard trinoc	T451PCS	T451PCN	T451PCC	T601PCS	T601PCN	T601PCC
MISCELLANEOUS						
Eyepiece tube with 23.2mm ID	T45XECS	T45XECN	T45XECC	T60XECS	T60XECN	T60XECC
Swift scopes	T451PCS	T451PCN	T451PCC	T601PCS	T601PCN	T601PCC
Meiji scopes	T451PCS	T451PCN	T451PCC	T601PCS	T601PCN	T601PCC
Leco 300 microscope	T45XL3S	T45XL3N	T45XL3C	T60XL3S	T60XL3N	T60XL3C

(Note: select next higher magnification).

35mm CAMERA COUPLERS / PA1 SERIES

PA1 Microscope/35mm SLR Camera Adapters

Benefits of the PA1 Adapter

Versatile

The PA1 line of camera adapters permit you to take photographs through your microscope using your personal 35mm SLR camera. The camera adapter replaces your camera's lens and depends on a microscope eyepiece to form the image on the film. The PA1 adapter is also used with some digital cameras with large format CCD's.

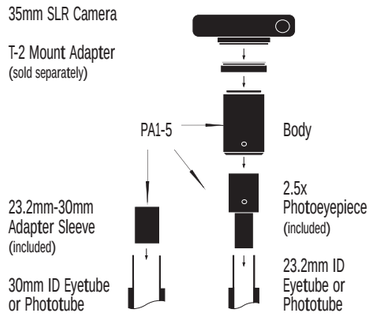
Parfocal

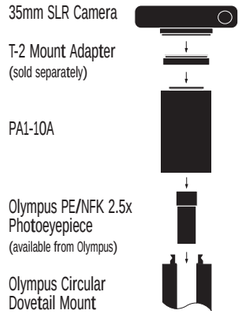
Focusing is done by looking through the viewfinder of your camera and adjusting the microscope focus knob until the image appears in focus.

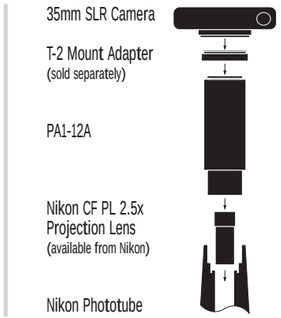
Ease of Use

Framing and exposure metering are also done by looking through the viewfinder. The photos that are taken will be full frame, rectangular photographs, not just bright circular images with dark corners.

Selected PA1 Microscope/35mm Camera Adapters









PA1 Microscope/35mm SLR Camera Adapter

Note: Older microscopes that use compensating optics may produce images with lateral chromatic abberation and spherical abberations uncorrected (see Appendix 4).

The System . . .



35mm SLR Camera

35mm camera or digital camera with removable lens.

Note: We recommend that a cable release be used to trip the shutter on your 35mm camera when using any PA1 adapter.

T-Mount Adapter

Each PA1 adapter has an industry standard "T-2 Mount" thread on the camera end. T-2 mount adapters are thin rings that screw onto this thread and have a particular camera's bayonet mount on the other side. Because the PA1 adapters use the T-2 Mount system, each adapter can fit a wide variety of existing cameras. All PA1 adapters require a T-2 Mount ring (sold separately, see page 33).

Body

There are a number of microscopes that have unique phototubes and we have designed unique photoadapters to fit them. We recommend the use of a specific PA1 adapter along with the photoeyepiece. In some cases the photoeyepiece is included with the PA1 adapter. For older microscopes, scopes that have had limited distribution and those that do not have phototubes, we have designed a "universal" camera adapter, the PA1-5.

Photoeyepiece

The photoeyepiece comes in a variety of magnifications. In some cases the photoeyepiece is included with the PA1 adapter. In other cases the photoeyepiece needs to be purchased separately. For those adapters that include a photoeyepiece, 2.5x magnification is used.

35mm SLR CAMERA ADAPTERS

PA1 Adapter, Photoeyepiece & T-mount Selection Charts

Adapter Selection Chart

MICROSCOPE	ADAPTER
AMERICAN OPTICAL (LEICA)	
COMPOUND	
Diastar, Microstar IV	PA1-44
Microstar 10, 110, 120, Epistar	PA1-43
BAUSCH & LOMB (LEICA)	
COMPOUND	
Balplan, Microzoom	PA1-45
STEREO	
Stereozoom 6	PA1-45
Stereozoom 7 (newer slip in port)	PA1-46
LEICA (also see American Optical, Bausch & Lomb, Leitz, Reichert, Wild)	
COMPOUND	
DMR series, fits FSA tube adapter, Variotube and DMRD (does not fit photo TV module), DMLS clinical microscope, DMLB, DMLP, DMRB, DMC	PA1-36
DMR HC series	PA1-49
STEREO	
MS5, MZ6, MZ8, MZ12, MZAPO with 38mm ISO photoport	PA1-35A
MS5, MZ6, MZ8, MZ12, MZAPO, MZFL3, S6D, S8APO in 37mm port of new phototubes HU(446 174), video/phototube objective 1.0x (445 930), video/phototube objective H(445 931)	PA1-36
GZ6 with 13410302 phototube	PA1-35A
SZ6	PA1-45
SZ7	PA1-46
INVERTED	
DMIL	PA1-35A
DMIRB, DMRE	PA1-36
MACROSCOPE	
M420 (old style with 38mm ISO photoport)	PA1-35A
M420 (new style with 37mm photoport)	PA1-36
LEITZ (LEICA)	
COMPOUND	
Dialux, Laborlux, Ortholux, Orthoplan, Diaplan, Ergolux, Aristoplan, Aristomet, Mettalux (for all models, inserts into 38mm ISO photoport)	PA1-35A
INVERTED	
Diavert, Labovert, Fluovert, Metallovert (for all, inserts into 38mm ISO photoport)	PA1-35A
NIKON	
COMPOUND	
Optiphot, Labophot & Alphaphot (including -2) Optiphot 100S, 150, 200, 300 Eclipse series, Microphot (with Nikon phototube 79429) (NOT YIDP phototube)	*PA1-12A
STEREO	
SMZ-U, SMZ10A, SM2-2T, SMZ800, SMZ1000, SMZ1500	*PA1-12A
INVERTED	
Eclipse TE 300/200, Diaphot 300/200, TMS-F, TMD, TS100-F	*PA1-12A
METALLURGICAL	
Epiphot 300/200, Epiphot TME	*PA1-12A
MEASURING	
MM40/MM60	*PA1-12A
MM-11, MM-22	
OLYMPUS	
COMPOUND	
BX series, AX Provis series, MX series, CX series (U-SPT phototube installed) BH-2 series: BHT, BHTU, BHS, BHM, Vanox	*PA1-10A
INVERTED	
IX sideport or trinocular head w/phototube, IMT-2 IX2, CKX series, IX51/71/81, GX51/71 (U-SPT phototube installed) *PA1-10A	*PA1-10A
STEREO	
SZ, SZH, SZX	*PA1-10A
REICHERT (LEICA)	
COMPOUND	
Microstar IV, Diastar	PA1-44
WILD (LEICA)	
STEREO	
All new stereos with removable phototube that reveals 38mm ISO photoport; including M3, M5, M7, M8, M10	PA1-35A
MACROSCOPE	
M420 (inserts into 38mm ISO photoport)	PA1-35A
ZEISS	
COMPOUND	
Axioskop, Axioplan, Axiophot, Axiotron, Axioskop-40	PA1-41
Axio-2 series	PA1-50
Universal, Photomicroscope II & III, UEM, Ultraphot IIIB, Axiomat (replaces phototube in all models)	PA1-42
STEREO	
SVG, SV8, SV11, Stemi2000	PA1-50
INVERTED	
Axiovert models 10, 35, 35M, 405M	PA1-41
MISCELLANEOUS	
Eyepiece tube with 23.2mm inside diameter eyetube	PA1-5
25mm Phototube with 23.2mm inside diameter phototube (such as Meiji, Swift)	PA1-5

***Note:** All of the PA1 adapters listed here include a 2.5x photoeyepiece, except those marked with an asterisk. Photoeyepieces are sold separately for PA1-10A. For the PA1-12A, contact your local Nikon microscope distributor.

Photoeyepiece Selection Chart (sold separately)

ADAPTER	PHOTOEYEPIECE
Photoeyepiece 2.5x compensating	PE-23
Photoeyepiece 2.5x noncompensating	PE-BX-2.5
Photoeyepiece 2.0x noncompensating	PE-BX-2.0

T-mount Selection Chart

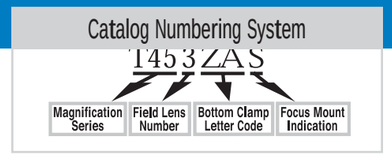
CAMERA	T-MOUNT
CANON	
Canon	CANC-T2
Canon EOS	EOSC-T2
KONICA	
Konica	KONC-T2
MINOLTA	
Minolta	MINC-T2
Minolta Maxxum Note: Xi models must disable autofocus by turning on the camera with the timer and spot buttons depressed.	MAXC-T2
NIKON	
Nikon (F-Mount)	NIKC-T2
OLYMPUS	
Olympus	OLYC-T2
PENTAX	
Pentax Bayonet (also Chinon & Richo Bayonet) (K-Mount)	PXBC-T2
Pentax Thread (also Chinon Thread)	PXTC-T2
C-MOUNT CAMERAS	
C-mount video and digital cameras	CMTC-T2

Camera Lens to C-Mount Selection Chart

CAMERA	C-MOUNT
CANON	
Canon Standard SLR Lens to C-Mount	CANL-CMTC
MINOLTA	
Minolta Standard SLR Lens to C-Mount	MINL-CMTC
NIKON	
Nikon F-Mount SLR Lens to C-Mount	NIKL-CMTC
OLYMPUS	
Olympus Standard SLR Lens to C-Mount	OLYL-CMTC
PENTAX	
Pentax Bayonet SLR Lens to C-Mount	PXKL-CMTC
Pentax Thread SLR Lens to C-Mount	PXSL-CMTC

APPENDIX 1 / COMPONENT SELECTION CHARTS

How to Order a 3CCD Coupler by Components



Option #2—Ordering a 3CCD Coupler by Components

A) Select the desired magnification series T45 (0.45x) or T60 (0.60x) from the charts below. See page 24 for instructions on selecting the correct magnification.

B) Select the 3CCD focus mount with the appropriate camera lens mount: Sony 1/2"bayonet, non-Sony 1/2" bayonet or C-mount.

C) Select the proper field lens number in the corresponding magnification series. The field lens number required for various microscope configurations is indicated in the system ordering catalog numbers given on pages 26-29. This number immediately follows the magnification series (T45, T60) in the system catalog number. If there is an "X" in the catalog number, this means the required field lens is not known.
Example: T45XZAS.
For these microscopes, all four lenses should be ordered. After determining the proper field lens during installation (instructions provided) the remaining three lenses can be returned for a credit.

D) Select the proper microscope bottom clamp from the component cross reference chart on page 35. For the T45 and T60 series, the bottom clamp can also be selected from the charts on pages 20-21. The "Bottom Clamp Cross Reference Guide" indicates the bottom clamp catalog number required, based on the second to last letters in the catalog number, given in the system selection guide on pages 26-29. See the "Catalog Numbering System" guide above.

Example:

A 3CCD coupler is needed to attach a Sony DXC-970 (1/2" Sony Bayonet mount) to an Olympus BX40, Zeiss Axioskop and Nikon Optiphot (with "T" head and vertical fluorescence illuminator). A slightly smaller, magnified field of view is desired.

Step A:

Using the flow chart on page 25, and examining the field of view diagram on page 36, it is determined that 0.45x magnification will provide the desired field of view.

The 0.45x lens is ordered from below.
T45LA – 0.45x 3CCD lens assembly

Step B:

Order the T45 series focus mount for the Sony 1/2" bayonet mount.
T45S– focus mount of Sony 1/2" bayonet mount

Step C:

Identify the three microscopes in the charts on pages 26-29 and the appropriate system catalog numbers under the column heading 0.45x series, Sony 1/2" bayonet mount. Order the appropriate field lenses based on the number after "T45" in the system catalog number.

For the Olympus BX40:
T452BXS (Locate "2" in system catalog number)
Order: **T45FL2 –** #2 field lens for 0.45x series

For the Zeiss Axioskop:
T453ZAS (Locate "3" in system catalog number)
Order: **T45FL3 –** #3 field lens for 0.45x series

For the Nikon Optiphot (with T-head and fluores):
T454OCS (Locate "4" in system catalog number)
Order: **T45FL4 –** #4 field lens for 0.45x series

Step D:

Identify the two letter code in the same system catalog numbers used above and order the corresponding bottom clamp from the cross reference guide on page 35.

For the Olympus BX40:
T452BXS (Locate "BX" in system catalog number)
Order: **BMX-CLAMP** for Olympus BX series

For the Zeiss Axioskop:
T453ZAS (Locate "ZA" in system catalog number)
Order: **Z-CLAMP** for Zeiss Axio series

For the Nikon Optiphot:
T454OCS (Locate "OC" in system catalog number)
Order: **O-CLAMP** for Nikon Optiphot series

Component Catalog Numbers

Components	T45 (0.45x) Series	T60 (0.60x) Series
Lens Assembly		
Lens assembly	T45LA	T60LA
Focus Mount		
Sony 1/2" bayonet mount	T45S	T60S
Non-Sony 1/2" bayonet mount	T45N	T60N
C-Mount	T45C	T60C
Field Lens		
#1 field lens	T45FL1	T60FL1
#2 field lens	T45FL2	T60FL2
#3 field lens	T45FL3	T60FL3
#4 field lens	T45FL4	T60FL4

Microscope Bottom Clamp Cross Reference Guide

Two Letter Code Used in System Catalog Number	Microscope Bottom Clamp Catalog Number for HR, HRP, HRD & T-Series	Microscope Bottom Clamp Catalog Number for HRU Ultra Widefield Series
AD	AO2 -CLAMP	UCAD
AM	AO1 -CLAMP	UCAM
BB	BL1 -CLAMP	UCBB
BH	V -CLAMP	UCBH
BR	BR -CLAMP	N/A
BS	BL2 -CLAMP	UCBS
BX	BMX -CLAMP	UCBX
DM	L -CLAMP	UCDM
DQ	DQ -CLAMP	N/A
EC	B -CLAMP	N/A
FM	FM -CLAMP	N/A
HC	HC -CLAMP	N/A
IX	IX -CLAMP	UCIX
JV	J -CLAMP	N/A
L3	L300 -CLAMP	N/A
LS	LS -CLAMP	N/A
MA	FS60 -CLAMP	UCMA
MB	FS60T -CLAMP	UCMB
MC	FS110 -CLAMP	UCMC
ME	MEF3 -CLAMP	N/A
NL	NLW -CLAMP	UCNL
NM	NM -CLAMP	UCNM
NS	S -CLAMP	N/A
NQ	DQ -CLAMP	N/A
OC	O -CLAMP	N/A
PC	P -CLAMP	N/A
RP	RPV2 -CLAMP	N/A
RS	RTH -CLAMP	N/A
TM	TM -CLAMP	N/A
WM	M400 -CLAMP	N/A
ZA	Z -CLAMP	UCZA
ZN	ZN -CLAMP	UCZN
ZS	ZS -CLAMP	N/A
ZU	ZU -CLAMP	UCZU
ZW	ZW -CLAMP	UCZW
ZV	ZV -CLAMP	N/A

APPENDIX 2 / FIELD OF VIEW

Monitor vs. Eyepiece

Field of View Diagram

In each diagram, the circles represent the field of view seen through the microscope eyepieces. The rectangles represent the image that will appear on the TV monitor (or computer screen).

Each circle corresponds to a certain "field number" (FN) eyepiece. Eyepieces with wider fields have larger field numbers. The field number is usually engraved on the eyepiece following the magnification, as in WFK 10x/20. In this example, FN = 20.

Choosing a Magnification

Usually the desired field of view on the monitor is that which most closely corresponds to what is seen through the microscope eyepiece. This is achieved by selecting the lowest magnification coupler recommended for a specific chip size.

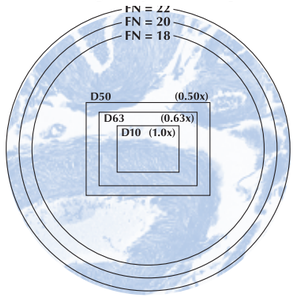
However, there are situations that require a higher magnification coupler. Specimens that are blurred on the monitor are better resolved at a higher magnification by utilizing more pixels on the monitor. This is especially useful when using a 100x objective which is usually the highest available microscope magnification. A higher magnification coupler may also be useful when using a non-flat field objective. This enables the user to image only the center (in focus) portion of the image.

Ultrawide vs. Standard Field of View

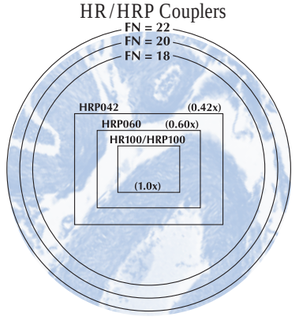
What makes an HRU060 ultrawide field coupler different from an HRD060 standard field coupler? It is the size of the image the bottom lens captures. The ultrawide design captures a 26mm diameter image, whereas a standard coupler captures a 19mm diameter image. Capture and correction of this larger field of view requires larger and more exotic (apochromatic glass) lenses making the HRU060 ultrawide coupler correspondingly more expensive.

1/3" CCD Cameras

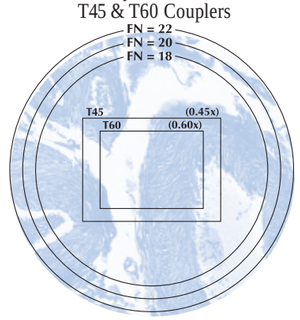
1CCD C-Mount
Direct Image Projection Couplers



1CCD C-Mount
HR/HRP Couplers

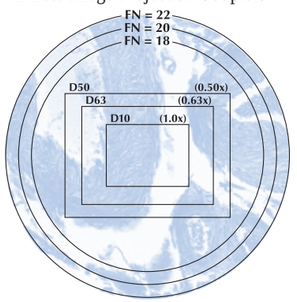


3CCD Bayonet or C-Mount
T45 & T60 Couplers

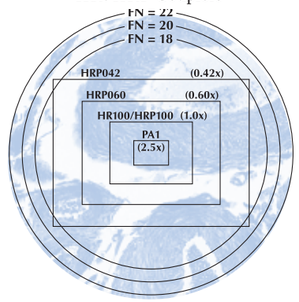


1/2" CCD Cameras

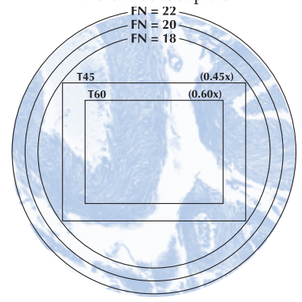
1CCD C-Mount
Direct Image Projection Couplers



1CCD C-Mount
HR/HRP Couplers

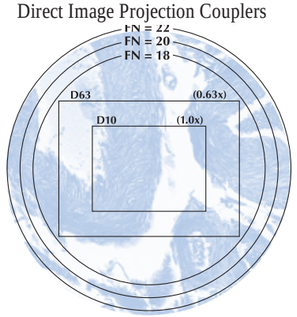


3CCD Bayonet or C-Mount
T45 & T60 Couplers

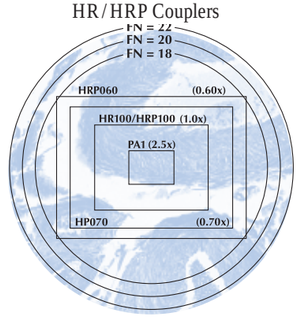


2/3" CCD Cameras

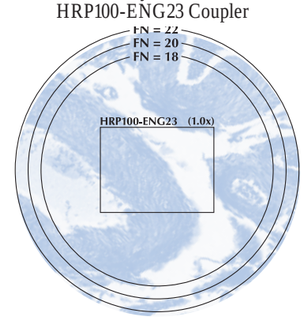
1CCD C-Mount
Direct Image Projection Couplers



1CCD C-Mount
HR/HRP Couplers

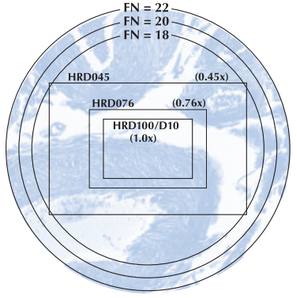


3CCD Bayonet Mount
HRP100-ENG23 Coupler

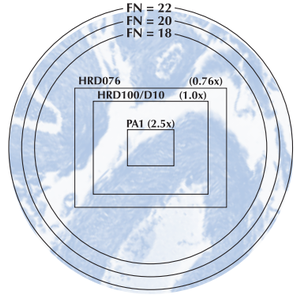


Digital Cameras

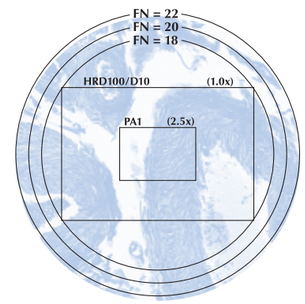
Kodak KAF-0402ME
SPOT Enhanced-SP500 & SP540



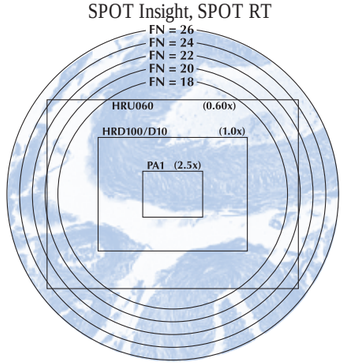
Kodak KAF-1402ME
SPOT Enhanced-SP600 & SP640



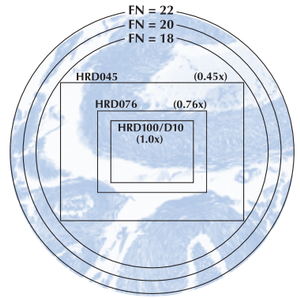
Kodak KAF-3200E



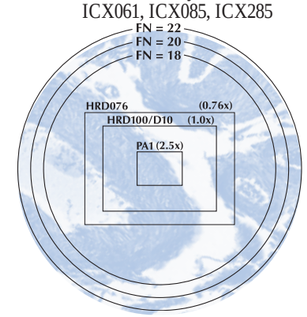
Kodak KAI-2000/2001
SPOT Insight, SPOT RT



Sony
ICX205



Sony
ICX061, ICX085, ICX285



APPENDIX 3 / DETERMINING FIELD SIZE & MAGNIFICATION

Determining Field of View Size (in mm) on the TV Monitor

It is sometimes useful to determine whether a specimen will be fully visible on the TV monitor with a video system. The portion of the specimen that is visible on the monitor does not vary with the size of the monitor. The field of view size varies with changes in:

1.) Size of the CCD chip
2.) Objective magnification
3.) Video coupler magnification

The field of view size is determined by the following formula:

$$\text{Field of view size on the TV monitor (height, width or diagonal)} = \frac{\text{CCD chip size (height, width or diagonal)}}{\text{Objective magnification x Coupler mag.}}$$

Table of Common CCD Chip Dimensions

Chip Format	Height	Width	Diagonal
1/3"	3.6mm	4.8mm	6mm
1/2"	4.8mm	6.4mm	8mm
2/3"	6.6mm	8.8mm	11mm
1"	9.6mm	12.8mm	16mm

Example:

What is the field of view size of a specimen if a 20x objective, a 0.42x coupler and a 1/3" chip camera are used? First we get the chip dimensions from the table:

Chip Height = 3.6mm
Chip Width = 4.8mm
Chip Diagonal = 6.0mm

We know the microscope objective magnification and the coupler magnification:

Objective Magnification = 20x
Coupler Magnification = 0.42x

We can now calculate the specimen field height and width:

Field Height = 3.6mm / (20 x 0.42) = 0.43mm
Field Width = 4.8mm / (20 x 0.42) = 0.57mm
Field Diagonal = 6.0mm / (20 x 0.42) = 0.71mm

Note: In the discussion, we have assumed that an "underscanned" monitor is used. An underscanned monitor displays an image slightly smaller than the picture tube. This means that every pixel on the camera chip will get displayed on the monitor. "Overscanned" monitors display an image that is slightly larger than the picture tube, which means that the pixels on the edges of the image are lost.

Magnification on the TV Monitor

In order to determine the total magnification on the TV monitor, the following variables must be known:

1.) Objective magnification
2.) Video coupler magnification
3.) CCD chip diagonal dimension
4.) TV monitor diagonal dimension

The formula used to calculate total magnification on the TV monitor is:

Total Magnification = Objective Mag. x Video Coupler Mag. x Video Mag.

The video magnification is determined by dividing the TV monitor diagonal (mm) by the CCD chip diagonal (mm). A reference chart is given below which shows video magnification for various monitor and chip sizes. To determine "video magnification" on a computer monitor, divide the actual image diagonal (as measured on the screen) by the CCD chip diagonal.

Video Magnification

	9"	12"	13"	19"	20"	27"
1/3"	38.1x	50.8x	55.0x	80.4x	84.7x	114.3x
1/2"	28.6x	38.1x	41.3x	60.3x	63.5x	85.7x
2/3"	20.8x	27.7x	30.0x	43.9x	46.2x	62.3x
1"	14.3x	19.1x	20.6x	30.2x	31.8x	42.9x

TV monitor diagonal (columns), CCD chip format (rows)

Example:

What is the total magnification on the TV monitor when using a 10x objective, 0.45x video coupler, a 1/2" format CCD and a 19" monitor?

$$\text{Total Magnification} = 10 \times 0.45 \times \frac{\text{482.6mm (19" diagonal)}}{\text{8mm chip diagonal}}$$
$$= 10 \times 0.45 \times 60.3$$
$$= 271.35x$$

Determining the Size of Specimen:

The approximate real size of a specimen can be determined by dividing the Length of the specimen measured on the monitor screen by the Total magnification on the monitor.

$$\text{Real size of specimen} = \frac{\text{Length of specimen measured on monitor screen}}{\text{Total magnification}}$$

Example:

In the above example, if the measured length of a specimen was 100mm, the real size of the specimen would be:

Real size of specimen = 100mm / 271.35
= 0.37mm

1/3" Chip Cameras

Specimen field of view (mm) for different objective magnifications (rows) and coupler magnifications (columns).

	0.42x	0.45x	0.55x	0.6x	0.7x	1x	2x
1x	8.57 x 11.4	8.00 x 10.7	6.55 x 8.73	6.00 x 8.00	5.14 x 6.86	3.60 x 4.80	1.80 x 2.40
2x	4.29 x 5.71	4.00 x 5.33	3.27 x 4.36	3.00 x 4.00	2.57 x 3.43	1.80 x 2.40	0.900 x 1.20
4x	2.14 x 2.86	2.00 x 2.67	1.64 x 2.18	1.50 x 2.00	1.28 x 1.71	0.900 x 1.20	0.450 x 0.600
10x	0.857 x 1.14	0.800 x 1.07	0.655 x 0.873	0.600 x 0.800	0.514 x 0.686	0.360 x 0.480	0.180 x 0.240
20x	0.429 x 0.571	0.400 x 0.533	0.327 x 0.436	0.300 x 0.400	0.257 x 0.343	0.180 x 0.240	0.0900 x 0.0120
40x	0.214 x 0.286	0.200 x 0.267	0.164 x 0.218	0.150 x 0.200	0.128 x 0.171	0.0900 x 0.0120	0.0450 x 0.0600
100x	0.0857 x 0.114	0.0800 x 0.107	0.0655 x 0.0873	0.0600 x 0.0800	0.0514 x 0.0686	0.0360 x 0.0480	0.0180 x 0.0240

1/2" Chip Cameras

Specimen field of view (mm) for different objective magnifications (rows) and coupler magnifications (columns).

	0.42x	0.45x	0.55x	0.6x	0.7x	1x	2x
1x	11.4 x 15.2	10.7 x 14.2	8.73 x 11.6	8.00 x 10.7	6.86 x 9.14	4.80 x 6.40	2.40 x 3.20
2x	5.71 x 7.62	5.33 x 7.11	4.36 x 5.82	4.00 x 5.33	3.43 x 4.57	2.40 x 3.20	1.20 x 1.60
4x	2.86 x 3.81	2.67 x 3.56	2.18 x 2.91	2.00 x 2.67	1.71 x 2.29	1.20 x 1.60	0.600 x 0.800
10x	1.14 x 1.52	1.07 x 1.42	0.873 x 1.160	0.800 x 1.070	0.686 x 0.914	0.480 x 0.640	0.240 x 0.320
20x	0.571 x 0.762	0.533 x 0.711	0.436 x 0.582	0.400 x 0.533	0.343 x 0.457	0.240 x 0.320	0.120 x 0.160
40x	0.286 x 0.381	0.267 x 0.356	0.218 x 0.291	0.200 x 0.267	0.171 x 0.229	0.120 x 0.1600	0.0600 x 0.0800
100x	0.114 x 0.152	0.107 x 0.142	0.0873 x 0.116	0.0800 x 0.1070	0.0686 x 0.0914	0.0480 x 0.0640	0.0240 x 0.0320

2/3" Chip Cameras

Specimen field of view (mm) for different objective magnifications (rows) and coupler magnifications (columns).

	0.42x	0.45x	0.55x	0.6x	0.7x	1x	2x	3.1x
1x	NR*	NR	NR	11.0 x 14.7	9.43 x 12.6	6.60 x 8.80	3.30 x 4.40	2.13 x 2.84
2x	NR	NR	NR	5.50 x 7.33	4.71 x 6.29	3.30 x 4.40	1.65 x 2.20	1.06 x 1.42
4x	NR	NR	NR	2.75 x 3.67	2.36 x 3.14	1.65 x 2.20	0.825 x 1.10	0.532 x 0.710
10x	NR	NR	NR	1.10 x 1.47	0.943 x 1.26	0.660 x 0.880	0.330 x 0.440	0.213 x 0.284
20x	NR	NR	NR	0.550 x 0.733	0.471 x 0.629	0.330 x 9.440	0.165 x 0.220	0.106 x 0.142
40x	NR	NR	NR	0.275 x 0.367	0.236 x 0.314	0.165 x 0.220	0.0825 x 0.110	0.0532 x 0.0710
100x	NR	NR	NR	0.110 x 0.147	0.0943 x 0.126	0.0660 x 0.0880	0.0330 x 0.0440	0.0213 x 0.0284

*NR = Not Recommended, vignetting will occur

APPENDIX 4 / PARFOCALIZING

Parfocalizing Direct Image Projection Series Video Couplers

Microscopes with Photofinder (Photoframing) Eyepieces

The Direct Image Projection Couplers are designed to be parfocal if used with a photofinder eyepiece. Parfocalizing with a photofinder eyepiece is the best method because it accommodates for differences between peoples' eyes. People using video cameras that display the image continuously on a video monitor will find the use of a photofinder eyepiece helpful if they cannot watch the monitor continuously. The eyepiece is available from the microscope manufacturer and is normally used when a film camera is attached to the microscope. The photofinder eyepiece (sometimes called a photoframing eyepiece) replaces one of the visual eyepieces in the binocular head. It is usually available matched to the second visual eyepiece. The photofinder eyepiece has a cross-hair (or circle) recticle and a focusing front lens.

1. Turn on the microscope, camera and monitor.
2. Turn the focusing front lens on the photofinder eyepiece until the cross hair recticle comes into sharp focus (this calibrates the user's eye to the camera system).
3. Now, when the microscope image is brought into sharp focus in the photofinder eyepiece, the camera will also be in focus.

Cameras with CCD Back Focus Adjustment

1. Turn on the microscope, camera and monitor.
2. Set the diopter adjustment at zero. If there are two diopter adjustments, set both at zero. If you wear glasses, put them on for the next step.
3. Focus on the specimen through the left eyepiece and then adjust the right microscope diopter to the correct focus difference between your eyes.
4. Bring the camera into focus on the monitor by adjusting the back focus mechanism on your camera (see your camera's user manual).

Cameras without Back Focus Adjustment

1. Turn on the microscope, camera and monitor.
2. Bring the image into focus on the monitor.
3. Adjust the diopters on the eyepieces to bring the eyepieces into equal focus. For microscopes with only one diopter adjustment, only one eyepiece can be parfocalized.

Parfocalizing HR Series and T-Series Video Couplers

Microscopes with Photofinder (Photoframing) Eyepieces

Parfocalizing with a photofinder eyepiece is the best method because it accommodates for differences between peoples' eyes. It is especially useful with digital cameras that take one picture at a time. The first time the camera is installed, it must be "parfocalized" with the photofinder eyepiece.

1. First, get the cross-hair recticle in the photofinder eyepiece into sharp focus by turning the focusing front lens on the photofinder eyepiece.
2. Next, get the microscope image in sharp focus in the photofinder eyepiece by turning the microscope's focus control.
3. Now, get the camera in sharp focus by looking at the computer screen, video monitor or through the camera viewfinder (on some digital cameras) while moving the focus adjustment on the coupler (using twist ring focus adjustment).
4. When the camera image is sharply in focus, lock the focus at this position by tightening the small silver colored set screw (locking ring not available on HR, HRP C-mount couplers).

Microscopes Without Photofinder Eyepieces

1. Set the microscope eyepiece diopter adjustment at the zero position. If there are two diopter adjustments, set both at zero. If you wear glasses, put them on for the next step.
2. Put the subject matter to be observed on the stage plate and bring the image into sharp focus through the left eyepiece.
3. Adjust the right microscope diopter to the correct focus difference between your eyes.
4. Loosen the locking set screw (use 1/16" hex key) on the knurled focus ring of the coupler (locking ring not available on HR, HRP C-mount couplers) and twist the focus ring back and forth until the image on the monitor comes into sharp focus. Tighten the set screw if you desire to lock this setting. Note: For ENG23 slip-fit focus, loosen two locking set screws on the top of coupler and move the upper portion up and down until the image comes into sharp focus on the monitor. Lock the two set screws.

Compensating Optics

It should be noted that many older microscopes used an optical design called compensating optics to provide abberation correction. The design philosophy knowingly produced only partially corrected intermediate images (images produced by the objective alone). The design then relies on the eyepiece or photoeyepiece to provide the final abberation correction. Diagnostic Instruments optical designs rely on fully corrected intermediate images since we cannot predict the compensation necessary for each manufacturers design. Microscopes with compensating optics should use the manufacturers optical elements if possible, since Diagnostic Instruments couplers will just relay any abberation on to the final image.

Artisan Technology Group is an independent supplier of quality pre-owned equipment

Gold-standard solutions

Extend the life of your critical industrial, commercial, and military systems with our superior service and support.

We buy equipment

Planning to upgrade your current equipment? Have surplus equipment taking up shelf space? We'll give it a new home.

Learn more!

Visit us at **artisantg.com** for more info on price quotes, drivers, technical specifications, manuals, and documentation.

Artisan Scientific Corporation dba Artisan Technology Group is not an affiliate, representative, or authorized distributor for any manufacturer listed herein.

We're here to make your life easier. How can we help you today?

(217) 352-9330 | sales@artisantg.com | artisantg.com

ARTISAN® TECHNOLOGY GROUP