

Dichroic Color Filters (Page 1 of 2)

Additive and subtractive dichroic color filters are used to separate color in CCD imaging, digital projection, machine vision, and printing. Each filter is designed so that it only transmits a small portion of the visible spectrum.

3-Color Composite Image

A set of red/green/blue filters was used to build a composite color image from a black and white CCD camera image.

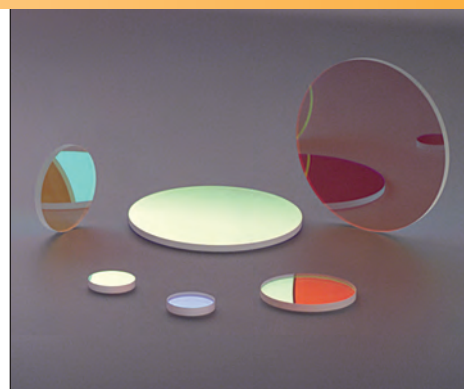
In the simplest case (as shown to the left) the red, green, and blue additive filters can be used in succession to produce a high-contrast color image from a black and white CCD image. Unlike traditional color CCD cameras, which make use of repetitive groups consisting of three spatially separated pixels, these color filters allow one to achieve the same effect without sacrificing resolution.

Dichroic color filters have many applications. For example, additive filters are commonly used in digital projection to enhance contrast. These kinds of filters also have benefits to machine vision; a

single filter can be placed in front of the CCD camera to increase contrast, thus making it easier to sort items. Copy machines and print preprocessing centers make use of subtractive filters to create images that will later be printed in ink.

- Will Not Fade Like Gels or Plastic Filters
- Ø1/2", Ø1", and Ø2" Available
- Multilayer Thin Film Coatings on Glass Substrates
- Also Available in a Kit

In contrast to plastic filters or gels, these coatings can withstand high temperatures, provide unparalleled durability, and will not fade with time. Each filter in the filter set is mounted in an SM1 lens tube. The filter part number and filter color are engraved on the lens tube.

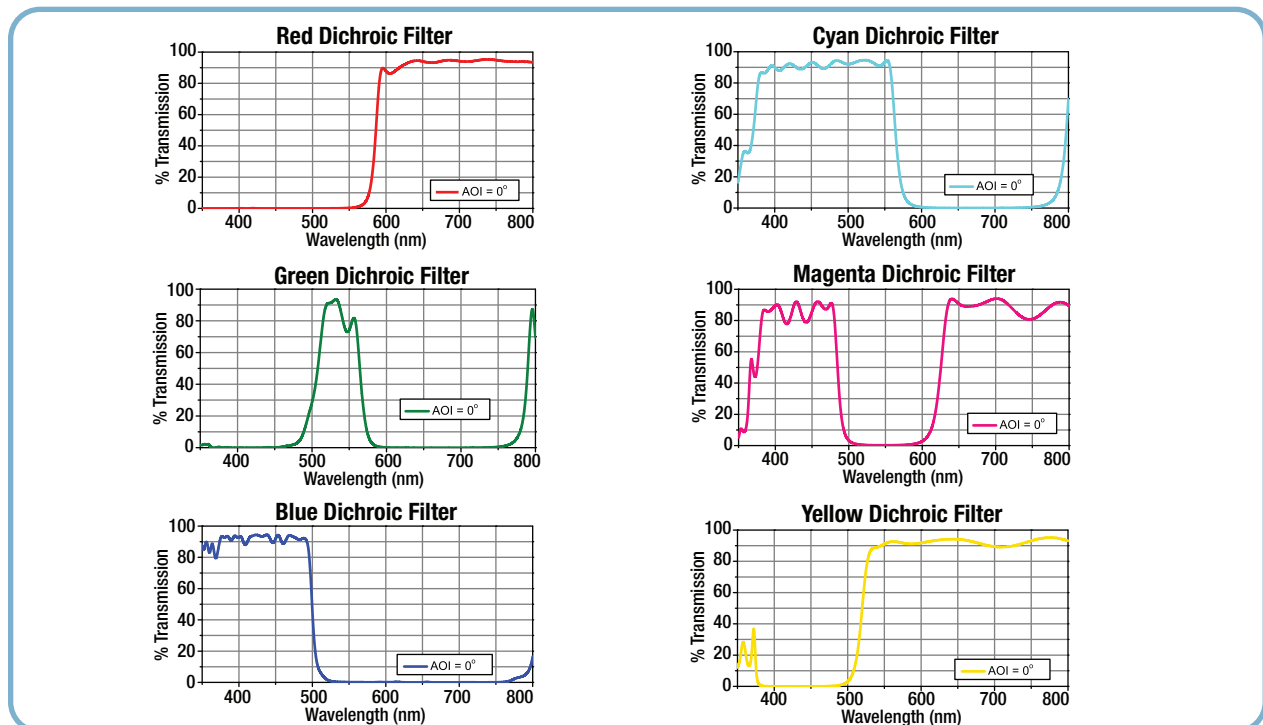


Preloaded Filter Wheel

FW1ADF is a Filter Wheel that Comes Preloaded with All Six Ø25.4 mm (Ø1") Dichroic Color Filters

ITEM#	\$	£	€	RMB
FW1ADF	\$ 235.70	£ 163.40	€ 209.30	¥ 1,990.30

Added Savings Over Buying the Pieces Individually



Dichroic Color Filters (Page 2 of 2)

Common Specifications

- Material: Borofloat Glass
- Clear Aperture: >90% Diameter
- Surface Quality: 80-50 Scratch-Dig
- Angle of Incidence: 0°
- Temperature Range: -50 to 80 °C
- Dimensional Tolerance:
 - Ø12.7 mm +0/-0.25 mm
 - Ø25.4 mm +0/-0.25 mm
 - Ø50.8 mm +0/-0.5 mm
- Thickness: 2 mm (+0.2/-0.5 mm)

Additive Filters:

- Red**
 - $T_{Avg} >75\%$ (615 - 730 nm)
 - $T_{Avg} <1\%$ (380 - 550 nm)
 - Cut-On: 585 ± 15 nm
- Green**
 - $T >70\%$ @ Peak
 - $T_{Avg} <1\%$ (400 - 460 nm)
 - Low Edge: 505 nm ± 15 nm
 - High Edge: 575 ± 15 nm
- Blue**
 - $T_{Avg} >85\%$ (390 - 480 nm)
 - $T_{Avg} <1\%$ (540 - 750 nm)
 - Cut-Off: 505 ± 15 nm

Subtractive Filters:

- Cyan**
 - $T_{Avg} >85\%$ (390 - 530 nm)
 - $T_{Avg} <1\%$ (585 - 710 nm)
 - Cut-Off: 555 ± 15 nm
- Magenta**
 - $T_{Avg} >80\%$ (380 - 470 nm and 655 - 750 nm)
 - $T_{Avg} <1\%$ (535 - 565 nm)
- Yellow**
 - $T_{Avg} >85\%$ (550 - 750 nm)
 - $T_{Avg} <1\%$ (410 - 475 nm)
 - Cut-On: 515 ± 15 nm

Ø1/2" Dichroic Color Filters

ITEM#	\$	£	€	RMB	DIAMETER	COLOR	DESCRIPTION
FD05R	\$ 18.70	£ 13.00	€ 16,70	¥ 158.00	12.7 mm (1/2")	Red	Unmounted Additive Dichroic Color Filter
FD05G	\$ 18.70	£ 13.00	€ 16,70	¥ 158.00	12.7 mm (1/2")	Green	Unmounted Additive Dichroic Color Filter
FD05B	\$ 18.70	£ 13.00	€ 16,70	¥ 158.00	12.7 mm (1/2")	Blue	Unmounted Additive Dichroic Color Filter
FD05C	\$ 18.70	£ 13.00	€ 16,70	¥ 158.00	12.7 mm (1/2")	Cyan	Unmounted Subtractive Dichroic Color Filter
FD05M	\$ 18.70	£ 13.00	€ 16,70	¥ 158.00	12.7 mm (1/2")	Magenta	Unmounted Subtractive Dichroic Color Filter
FD05Y	\$ 18.70	£ 13.00	€ 16,70	¥ 158.00	12.7 mm (1/2")	Yellow	Unmounted Subtractive Dichroic Color Filter

Ø1" Dichroic Color Filters

ITEM#	\$	£	€	RMB	DIAMETER	COLOR	DESCRIPTION
FD1R	\$ 23.20	£ 16.10	€ 20,60	¥ 196.00	25.4 mm (1")	Red	Unmounted Additive Dichroic Color Filter
FD1G	\$ 23.20	£ 16.10	€ 20,60	¥ 196.00	25.4 mm (1")	Green	Unmounted Additive Dichroic Color Filter
FD1B	\$ 23.20	£ 16.10	€ 20,60	¥ 196.00	25.4 mm (1")	Blue	Unmounted Additive Dichroic Color Filter
FD1C	\$ 23.20	£ 16.10	€ 20,60	¥ 196.00	25.4 mm (1")	Cyan	Unmounted Subtractive Dichroic Color Filter
FD1M	\$ 23.20	£ 16.10	€ 20,60	¥ 196.00	25.4 mm (1")	Magenta	Unmounted Subtractive Dichroic Color Filter
FD1Y	\$ 23.20	£ 16.10	€ 20,60	¥ 196.00	25.4 mm (1")	Yellow	Unmounted Subtractive Dichroic Color Filter

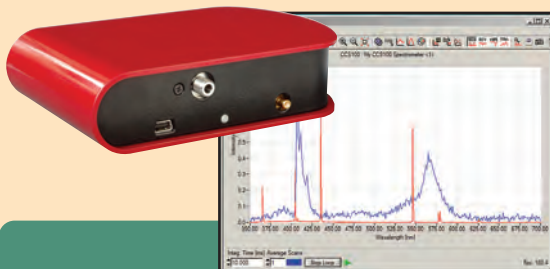
Ø2" Dichroic Color Filters

ITEM#	\$	£	€	RMB	DIAMETER	COLOR	DESCRIPTION
FD2R	\$ 32.00	£ 22.20	€ 28,50	¥ 270.30	50.8 mm (2")	Red	Unmounted Additive Dichroic Color Filter
FD2G	\$ 32.00	£ 22.20	€ 28,50	¥ 270.30	50.8 mm (2")	Green	Unmounted Additive Dichroic Color Filter
FD2B	\$ 32.00	£ 22.20	€ 28,50	¥ 270.30	50.8 mm (2")	Blue	Unmounted Additive Dichroic Color Filter
FD2C	\$ 32.00	£ 22.20	€ 28,50	¥ 270.30	50.8 mm (2")	Cyan	Unmounted Subtractive Dichroic Color Filter
FD2M	\$ 32.00	£ 22.20	€ 28,50	¥ 270.30	50.8 mm (2")	Magenta	Unmounted Subtractive Dichroic Color Filter
FD2Y	\$ 32.00	£ 22.20	€ 28,50	¥ 270.30	50.8 mm (2")	Yellow	Unmounted Subtractive Dichroic Color Filter

Ø1" Dichroic Color Filter Kits

ITEM#	\$	£	€	RMB	DIAMETER	COLOR	DESCRIPTION
FD1D	\$ 195.00	£ 135.20	€ 173,20	¥ 1,646.60	25.4 mm (1")	CMYRGB	Six Ø25.4 mm (Ø1") SM1 Mounted Dichroic Filters

Compact CCD Spectrometers

NEW
 PRODUCTS


Features

- 3 Models Cover the 200-1000 nm Spectral Range
- Resolution: <0.5 nm FWHM
- Sensitivity: 160 V/lux-s
- Integration Time: 10 µs to 60 s
- Czerny-Turner Spectrometer
- Compact Size: 30 mm x 120 mm x 80 mm
- High-Speed USB Connection
- External Trigger Synchronization
- 16-Bit A/D Converter
- 3,648 Pixel CCD Line Array

See Pages 1310-1311