

# ASTRONOMICAL PHOTOMETRY AND CCD CAMERA ACCESSORIES PRICE LIST

*Effective Date: November 29, 2005*

## SINGLE-CHANNEL PHOTOMETERS

17003	<b>Model SSP-3 Solid State Stellar Photometer, Generation 2.</b> Includes: 1¼" telescope coupler, 1 mm diameter photodiode with 1 mm field aperture mounted, 9 V rechargeable battery, 12 VDC power supply/charger for 100-240 VAC, serial data/control I/O, and Install CD. <i>Order 2-position filter slider, filters and serial cable separately.</i>	\$1,095.00
17005	<b>Model SSP-3A Automated Solid-State Stellar Photometer, Generation 2.</b> Includes: 1¼" telescope coupler, 1 mm diameter photodiode with 1 mm field aperture mounted, filter slider stepper motor, 12 VDC power supply for 100-240 VAC, serial data/control I/O and Install CD. <i>Order 6-position filter slider, filters and serial cable separately..</i>	\$1,495.00
17533	<i>Upgrade SSP-3 or 3A instrument to Generation 2. (no discount)</i>	\$395.00
17006	<b>Model SSP-4 Infrared Stellar Photometer.</b> Includes: 1¼" telescope coupler, 0.3mm infrared InGaAs cooled photodiode detector, 5 VDC power supply (stock #17065) and Install CD. <i>Order 2-position filter slider, J-H filters and serial cable separately. (Not available in automatic slider version.)</i>	\$2,195.00
17007	<b>Model SSP-5 PMT Stellar Photometer, Generation 2.</b> Includes: 1¼" telescope coupler, 1 mm field aperture, 12 VDC power supply for 100 – 240 VAC and Install CD. <i>Order PMT, 2-position filter sliders, filters and serial cable separately.</i>	\$1,795.00
17009	<b>Model SSP-5A Automated PMT Stellar Photometer, Generation 2.</b> Includes: 1¼" telescope coupler, 1 mm field aperture, filter slider stepper motor, 12 VDC power supply for 100 – 240 VAC and Install CD. <i>Order PMT, 6-position filter slider, filters and serial cable separately.</i>	\$2,195.00
17535	<i>Upgrade SSP-5 or 5A instrument to Generation 2 (no discount)</i>	\$495.00

## DETECTOR APERTURE OPTIONS (factory installed only.)

17011	<b>0.5 mm diameter field aperture for SSP-3/3A or SSP-5/5A.</b>	\$65.00
17012	<b>0.75 mm diameter field aperture for SSP-3/3A or SSP-5/5A.</b>	\$65.00
17013	<b>2 mm diameter field aperture for SSP-3/3A (larger detector) or SSP-5/5A.</b>	\$75.00

## PHOTOMULTIPLIER TUBE & InGaAs DETECTOR OPTIONS (for SSP-4/ SSP-5/SSP-5A photometers)

17014	<b>1 mm infrared InGaAs photodiode detector option for SSP-4.</b>	CALL
17015	<b>Hamamatsu R6350 Sb-Cs PMT with S-5 response (185 to 650 nm).</b>	\$300.00
17017	<b>Hamamatsu R6358 Multialkali PMT with extended red response (185 to 830 nm).</b>	\$625.00

## FILTER SLIDERS

17050	<b>2-position filter slider for manual photometers.</b>	\$50.00
17052	<b>6-position filter slider for automatic photometers.</b>	\$185.00

 **OPTEC, Inc.**

199 Smith Street • Lowell, MI 49331 • U.S.A.  
(616) 897-9351 • FAX: (616) 897-8229  
sales@optecinc.com • <http://www.optecinc.com>

*All prices and specifications subject to change without notice.*

**BATTERIES AND POWER SUPPLIES**

17060	<b>9 volt Nickel Hydride battery replacement.</b>	\$12.00
17064	<b>12 VDC Universal Power Supply, input range 90-264V AC, 12-watt output.</b> For use with most Optec devices including TCF-S, IFW, SSP-3, SSP-5 and PYXIS.	\$25.00
17065	<b>5 VDC Power Supply, input range 100-120V AC input, 15-watt output. Use with SSP-4 only.</b>	\$25.00
17067	<b>9-foot power supply extender cable.</b>	\$12.00

**SERIAL CABLES FOR SSP PHOTOMETERS**

*RS-232 null modem cable for connection between PC DB-9 serial port and DB-9 port on SSP photometers*

17154	<b>6-ft. Serial cable for SSP photometers, DB-9 F/F.</b>	\$20.00
17155	<b>10-ft. Serial cable for SSP photometers, DB-9 F/F.</b>	\$25.00
17156	<b>15-ft. Serial cable for SSP photometers, DB-9 F/F.</b>	\$35.00
17157	<b>25-ft. Serial cable for SSP photometers, DB-9 F/F.</b>	\$45.00

**CARRYING & STORAGE CASES**

17200	<b>SSP-3 or SSP-4 Carrying &amp; Storage Case.</b>	\$125.00
17205	<b>SSP-5 Carrying &amp; Storage Case.</b>	\$125.00
17210	<b>SSP-3A Carrying &amp; Storage Case.</b>	\$125.00
17215	<b>SSP-5A Carrying &amp; Storage Case.</b>	\$125.00



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**NextGEN CCD CAMERA MOUNTING PLATES**

*The most popular mounts are shown below. Consult our web site under mounting plates for NextGEN telecompressors to see and find stock numbers for all available camera mounts. Make sure the tube length dimension is included with the description when ordering. These mounting plates accommodate the 52 mm back focus distance of the NextGEN MAXfield and NextGEN WideField telecompressors.*

17392	<b>-1.47 tube length, NextGEN mounting plate for SBIG ST-7/8/9/10/2000</b>	\$50.00
17392	<b>-0.72 tube length, NextGEN mounting plate for SBIG ST-7/8/9/10/200 with CFW-8 filter wheel</b>	\$50.00
17395	<b>-1.67 tube length, NextGEN mounting plate for Starlight Xpress MX and HX series</b>	\$50.00
17396	<b>-1.30 tube length, NextGEN mounting plate for FLI MaxCam with SCT thread</b>	\$50.00
17399	<b>-1.69 tube length, NextGEN mounting plate for standard C-Mount cameras.</b>	\$50.00

*NOTE: Starlight Xpress SXV-M25 cannot be used with the NextGen telecompressor systems*

*NOTE: Mounting plates are available for most T, SCT, Pentax and C thread cameras.*

**TELECOMPRESSOR LENS SYSTEMS**

17401	<b>2" Receiver fits 2" SCT threads to fit NextGEN directly to telescope</b>	\$50.00
17403	<b>NextGEN MAXfield 0.33X Telecompressor Lens</b>	\$195.00
	Second generation MAXfield telecompressor design with 0.33X reduction. Complete redesign of Optec's premier f/3.3 reducer provides better color correction and a longer back-focus distance. Now compatible with SBIG's CFW-8 color wheel. Stk. #17430, violet light rejection filter included. (NOTE: Order NextGEN CCD camera mounting plate separately <b>above</b> .)	
17406	<b>NextGEN WideField 0.5X Telecompressor Lens</b>	\$235.00
	Second generation WideField telecompressor design with 0.5X reduction. Re-design of Optec's WideField reducer provides improved color correction and longer back-focus. Provides unvignetted field approx. 18mm in diameter. Now compatible with SBIG's CFW-8 color wheel. (NOTE: Order NextGEN CCD camera mounting plate separately <b>above</b> .)	
17408	<b>WideField-FLI 0.5X Telecompressor Lens</b>	\$95.00
	Special version of the original WideField f/5 telecompressor designed to fit directly into the FLI camera faceplate using a 2" 24tpi thread. (For use with FLI cameras only – separate camera mount is not required.)	
17409	<b>NextGEN Ultra WideField 0.62X Telecompressor Lens</b>	\$395.00
	New parfocal telecompressor specifically designed to work with apochromatic designs such as the Takahashi FS-series, AstroPhysics, and other high-end refractors. Four-element optical system delivers an extremely flat field up to 18mm diagonal for CCD detectors. (Order CCD Camera mounting plate separately <b>below</b> .)	
17370	<b>APUS 0.36X SCT webcam telecompressor for Schmidt-Cassegrains.</b>	\$165.00
17374	<b>APUS 2.5X SCT webcam tele-extender for Schmidt-Cassegrains.</b>	\$165.00

**CCD CAMERA/TELECOMPRESSOR MOUNTING PLATES**

*Designed for use with NextGEN 0.62X Ultra WideField. Telecompressors and the discontinued original MAXfield (0.33X) and WideField (0.50X). These mounting plates accommodate the 29 mm back focus.*

17410	<b>Mounting plate and hardware kit for SBIG ST-6 camera.</b>	\$50.00
17411	<b>Mounting plate and hardware kit for SBIG ST-6B camera.</b>	\$50.00
17412	<b>Mounting plate and hardware kit for SBIG ST-4 or ST-5 cameras.</b>	\$145.00
17413	<b>Mounting plate and hardware kit for Meade Pictor 216XT camera.</b>	\$50.00
17414	<b>Mounting plate and hardware kit for Meade Pictor 416XT camera.</b>	\$50.00
17419	<b>Mounting plate and hardware kit for SBIG STV, ST-237, &amp; ST-5C cameras.</b>	\$50.00
17422	<b>Mounting plate and hardware kit for SBIG ST-x cameras including ST-7/8/9/10/2000</b>	\$50.00
17424	<b>Mounting plate and hardware kit for Starlight Xpress camera.</b>	\$50.00
17425	<b>Mounting plate and hardware kit for Starlight Xpress MX5, MX-7, MX916 &amp; HX5 cameras.</b>	\$50.00
17426	<b>Mounting plate and hardware kit for Starlight Xpress SXV-H9 T-thread camera.</b>	\$50.00
17429	<b>Mounting plate and hardware kit for C-mount camera.</b>	\$50.00



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**TELESCOPE MOUNTS FOR IFW & TCF-S FOCUSER**

*These telescope mounts fit the IFW Filter Wheel and TCF-S Focuser.*

17451	<b>Takahashi 2.5" mount, fits the Takahashi Sky 90 telescope drawtube with TKP35001 coupling removed</b>	\$75.00
17651	<b>Takahashi 2.8" (72mm) male mount, fits the Takahashi Mewlon 210 and 250.</b>	\$75.00
17652	<b>TeleVue 3" telescope mount, fits the NP101 male thread.</b>	\$55.00
17453	<b>Takahashi 2.8" (72mm) female mount, fits most Takahashi telescopes including: FS-102/128, FS-152 with TKP27113 89mm adapter ring, TOA-130/150 with TRP31003 coupling(W) and Mewlon 300.</b>	\$75.00
17454	<b>Meade/Celestron Mount for 2" Rear Cell Thread, Meade/Celestron 8", Celestron 9.25" telescopes</b>	\$55.00
17455	<b>Meade Telescope Mount for 3" Rear Cell Thread, Meade 10" and 12" telescopes.</b>	\$55.00
17456	<b>Meade Telescope Mount for 4" Rear Cell Thread, Meade 16" telescopes.</b>	\$95.00
17457	<b>Celestron Telescope Mount for 3" Rear Cell Thread, Celestron C-11/C-14 telescopes.</b>	\$55.00
17458	<b>AstroPhysics 2.7" mount, fits all AP telescopes with 2.7" adapter.</b>	\$75.00
17459	<b>2" Barrel Mount (male) for any 2" focuser, approx. 2" barrel length.</b>	\$55.00
17653	<b>Spacer to allow 0.5-inch increase in length for telescope mounts.</b>	\$50.00
17656	<b>Takahashi FS-78 mount, fits the 2.2-inch thread directly.</b>	\$50.00

**TELESCOPE MOUNTS FOR TCF-S3**

17801	<b>Meade Telescope Mount for 4" Rear Cell Thread, TCF-S3</b>	\$85.00
17802	<b>Meade Telescope Mount for 3" Rear Cell Thread, TCF-S3</b>	\$85.00
17803	<b>Celestron Telescope Mount for 3" Rear Cell Thread, TCF-S3</b>	\$85.00

**AUTOMATED FILTER SELECTOR SYSTEMS**

17350	<b>IFW Filter Wheel – Automatic 2" Filter Selector System.</b> Includes IFW filter selector system with integrated stepper motor, intelligent hand controller with SBIG CFW-8 emulation and PC serial modes. 12 VDC power supply included. <i>Order telescope mount, mounting ring, control cable, PC control cable, filter wheels and filters separately.</i>	\$725.00
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**FILTER WHEELS**

17352	<b>5-position Filter Wheel, 2" diameter filters.</b> 5-position filter wheel can be easily inserted into and removed from the IFW Filter Wheel system. Specially designed for oversized 2" filters (50.4mm diameter). Orders with Optec filters should specify #17355 below.	\$195.00
17355	<b>5-position Filter Wheel, 50mm diameter filters.</b> 5-position filter wheel can be easily inserted into and removed from the IFW Filter Wheel system. Order 50mm diameter filters separately for factory mounting into the wheel. Multiple 5-position filter wheels can accommodate up to 25 filters.	\$195.00
17358	<b>8-position Filter Wheel, 25.4mm filters.</b> New 8-position filter wheel for 1" filters. 25.4mm diameter round filters should be factory mounted into this wheel. New IFW firmware allows use with older IFW systems. Contact Optec for additional details.	\$225.00
17359	<b>IFW Filter Wheel Carrying &amp; Storage Case.</b> Case is made from solid hardwood and can hold up to four wheels.	\$125.00



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**MOUNTING RINGS FOR IFW & MAXFILTER**

17460	<b>Universal Mounting Ring for MAXfield/WideField or any 2" barrel accessory.</b>	\$50.00
17461	<b>TCF Mounting Ring for TCF Temperature Compensating Focuser (stk. no. 17670) below.</b>	\$50.00
17462	<b>JMI MotoFocus Mounting Ring for JMI NGF-S motorized focuser.</b>	\$50.00
17463	<b>ST-1001E Mounting Ring for SBIG ST-1001E CCD camera</b>	\$95.00
17464	<b>SCT Threaded Mounting Ring with male SCT 2" thread for other accessories.</b>	\$50.00
17465	<b>T-Thread Mounting Ring with 42mm T-thread for direct camera coupling.</b>	\$50.00
17466	<b>C-mount Mounting Ring for C-mount cameras.</b>	\$50.00

**SBIG CAMERA CABLES FOR IFW**

*Cables designed especially for use with SBIG camera when using the IFW in CFW8 emulation mode.*

17475	<b>18-inch, SBIG Cable, ST-x CCD Camera to Hand Controller w/ pickoff female RJ-11.</b>	\$15.00
17476	<b>6-foot Cable, SBIG Cable, ST-x CCD Camera to Hand Controller w/ pickoff female RJ-11.</b>	\$25.00
17477	<b>12-foot Cable, SBIG Cable, ST-x CCD Camera to Hand Controller w/ pickoff female RJ-11.</b>	\$30.00
17478	<b>25- foot Cable, SBIG Cable, ST-x CCD Camera to Hand Controller w/ pickoff female RJ-11.</b>	\$35.00
17479	<b>50- foot Cable, SBIG Cable, ST-x CCD Camera to Hand Controller w/ pickoff female RJ-11.</b>	\$40.00

**TEMPERATURE COMPENSATING FOCUSER SYSTEM**

17670	<b>Model TCF-S, 2-inch I.D. Temperature Compensating Focuser, Serial Version with RS-232 I/O.</b>	\$725.00
	Includes 2" TCF-S focuser, temperature sensor probe with 20" cable, control box with precision digital display (DRO) and IN/OUT manual focus push buttons and power supply. Order telescope mount, control cable and optional adapters separately. For PC computer operation, order 9-pin serial port converter (stock number 17695) and RJ-12 reverse cable separately. See <a href="http://optecinc.com/optec_056.htm">http://optecinc.com/optec_056.htm</a> for a complete list of accessories.	
17677	<b>Model TCF-S3, 3-inch I.D. Temperature Compensating Focuser, Serial Version with RS-232 I/O.</b>	\$1725.00
	Same as 17670 except the focuser is much more massive and capable of handling instrument loads up to 25 pounds. Recommended for observatory class telescopes with large field diameters. Includes: temperature sensor probe with 20" cable, control box and power supply. Uses same accessories as 17670. Selection of telescope mounts is limited to large sizes only.	
17661	<b>Custom temperature sensor probe up to 6-ft. length.</b>	\$10.00
	Substitutes for standard 20" cable supplied with stk. #17670 and #17677 above.	

**TCF-S and TCF-S3 REMOTE KEYPAD**

17680	<b>Remote IN/OUT Keypad</b>	\$129.00
	Metal hand paddle with IN and OUT pushbuttons. Plugs into temperature probe connector on the focuser and allows for direct manual operation of the instrument. Connection is hot swappable. Default cable length is 3 feet.	
17681	<b>Custom remote cable length</b>	\$10.00
	If the default cable length of 3 feet is not acceptable, this option allows any length up to 6 feet to be specified.	

**ADAPTERS FOR TCF-S FOCUSER**

17662	<b>2" to 1 1/4" adapter, fits directly into the 2" TCF focuser.</b>	\$50.00
17664	<b>2" to T-thread adapter, fits directly into the 2" TCF focuser.</b>	\$50.00
17665	<b>2" to SCT thread (2" diameter) adapter, fits directly into the 2" TCF focuser.</b>	\$50.00
17804	<b>3" to 2" reducer bushing, allows the adapters above to fit the TCF-S3</b>	\$75.00



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**USB to SERIAL CONVERTERS**

17690	<b>USB to Serial Converter 1-Port.</b>	\$29.00
	We have found the above converter to be the most compatible with our instruments.	
17691	<b>USB to Serial Converter 4-Port.</b>	\$175.00
	Provides 4 serial ports from one USB connection. Control TCF-S, IFW, Pyxis and SSP photometer from one USB.	

**PC SERIAL CABLES & CONVERTERS FOR TCF-S, TCF-S3, IFW and PYXIS**

17695	<b>PC Serial Port Converter, DB-9 to RJ-12, for TCF-S Focuser.</b>	\$15.00
	Allows PC serial communications with the TCF-S Focuser and IFW Filter Wheel using any 9-pin serial port. A RJ-12 Reverse Cable is required for proper operation. See stock numbers 17671 through 17675 below.	
17671	<b>6-foot RJ-12 Reverse Cable for use with #17695 converter above.</b>	\$12.00
17672	<b>12-foot RJ-12 Reverse Cable for use with #17695 converter above.</b>	\$15.00
17673	<b>25-foot RJ-12 Reverse Cable for use with #17695 converter above.</b>	\$25.00
17674	<b>50-foot RJ-12 Reverse Cable for use with #17695 converter above.</b>	\$35.00
17675	<b>Custom length RJ-12 Reverse Cable for use with #17695 converter above, per foot.</b>	\$5 plus \$1.50/ft.

**CONTROL CABLES FOR IFW, TCF-S and TCF-S3**

17470	<b>6-foot Control Cable, Hand Controller to TCF-S/IFW, RJ-45 to DB-9.</b>	\$25.00
17471	<b>12-foot Control Cable, Hand Controller to TCF-S/IFW, RJ-45 to DB-9.</b>	\$35.00
17472	<b>25-foot Control Cable, Hand Controller to TCF-S/IFW, RJ-45 to DB-9.</b>	\$45.00
17473	<b>50-foot Control Cable, Hand Controller to TCF-S/IFW, RJ-45 to DB-9.</b>	\$55.00
17474	<b>Custom length Control Cable, Hand Controller to TCF-S/IFW, priced per foot.</b>	\$20 plus \$1.50/ft.

**PYXIS CAMERA FIELD ROTATOR**

17645	<b>Pyxis Camera Field Rotator.</b>	\$895.00
	Pyxis camera rotator attaches directly to most CCD camera using one of the mounts listed below. On the telescope side, the standard 2-inch nosepiece will push-fit directly into TCF-S or any 2-inch ID focuser. The <b>Pyxis</b> includes a built-in serial port for remote operations – no external hand control is required. 12VDC power supply is included. Standard 2-inch nosepiece (stock number 17642) is included but the camera mount must be ordered separately. Order serial port converter (stock number 17695) and reverse cable (stock numbers 17671 to 17675) separately. <i>(PC connection is required for operation.)</i>	

**PYXIS ADAPTERS**

17640	<b>L Mounting Bracket with ½ - 20 thread.</b>	\$25.00
	The L bracket allows the Pyxis to be mounted on a side support or optical bench.	
17642	<b>Pyxis 2-inch nosepiece replacement.</b>	\$50.00
	The Pyxis is shipped with this adapter to fit any 2-inch ID focusing mount.	
17644	<b>Pyxis STL camera mount.</b>	\$50.00
17646	<b>Pyxis T-thread camera mount.</b>	\$50.00
	This adapter allows use of NextGEN reducers to work with most SBIG cameras without CFW wheel. However, SBIG cameras using the CFW wheel must also purchase the 17654 extender tube. This moves the camera further back so that the CFW motor does not interfere with the Pyxis	



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17647	<b>Pyxis Pentax camera mount.</b>	\$50.00
17648	<b>Pyxis SCT threaded camera mount.</b>	\$50.00
17649	<b>Pyxis C-thread camera mount.</b>	\$50.00
17650	<b>T-thread to Nikon adapter</b>	\$20.00
17654	<b>Extender tube, 16mm.</b>	\$35.00

The extender tube moves the camera away from the Pyxis by 16 mm. Mounts between the camera adapter and Pyxis. This is sometimes needed if some member of the camera or camera filter wheel obstructs the Pyxis during rotation. In order for the CFW-8/10 filter wheel from SBIG to be used, this adapter must be added to the T-thread camera mount stock number 17646.

## SPECIAL WIRING AND MOUNTING KITS

17499	<b>Paramount ME Mounting &amp; Wiring kit for IFW &amp; TCF-S.</b>	\$195.00
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Specially designed mounting platforms and hardware kit for mounting the IFW and TCF-S hand controllers to the telescope plate of Software Bisque's Paramount ME. Includes all tools, hardware and wires needed to take advantage of the internal auxiliary ports of the mount. The IFW and TCF-S hand controls are placed at the telescope with minimal wiring clutter, a must-have accessory for all Paramount ME owners.

## CUSTOM EQUATORIAL WEDGE

17995	<b>Ultra-Wedge for the Meade 16" LX-200</b>	\$3,500.00
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Optec designed equatorial wedge using 5/8" aluminum plate. Ultra-Wedge for Meade 16" SCT telescope, target latitude specified by customer. Ultra-Wedge includes custom base plate fabricated to match customer supplied hole pattern. Installation kit includes all necessary hardware including leveling washers, all stainless fasteners, and required tools. Weighs approximately 100 pounds. Customer to assume responsibility for final installation.

## MANUAL FOCUS KNOB & CONVERSIONS

17659	<b>BFK, Big Focus Knob.</b>	\$45.00
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Oversized knob for manual focus knob of Meade and Celestron SCT telescopes. BFK slips over existing aluminum knob (will not fit new Celestron rubberized knobs) and fastens with three setscrews. Provides fine manual control of focus. Highly Recommended!

17655	<b>Meade 16" Focus Mechanism Replacement</b>	\$195.00
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Conversion kit for stock Meade focus mechanism includes pressure bearings and 1/2" stainless steel precision threaded shaft. Full instructions for installation. Includes BFK above.



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**1/2" DIAMETER ROUND FILTERS for SSP Photometers***Designed for mounting in 2 or 6 position filter sliders (stk. #17050, #170523)*

17031	<b>Johnson U (Ultra-Violet) filter for SSP-3 or SSP-5 with R6358 PMT</b>	\$75.00
17032	<b>Johnson B (Blue) filter for SSP-3 or SSP-5 with R6358 or R6350 PMT</b>	\$75.00
17033	<b>Johnson V (Visual) filter for SSP-3 or SSP-5 with R6358 PMT</b>	\$75.00
17034	<b>Johnson R (Red) filter for SSP-3 or SSP-5 with R6358 PMT.</b>	\$75.00
17035	<b>Johnson I (Infrared) filter for SSP-3</b>	\$75.00
17036	<b>Clear filter window for any SSP</b>	\$30.00
17137	<b>J-band filter, 1.25 <math>\mu\text{m}</math> CW, .28<math>\mu\text{m}</math> BW for SSP-4 infrared photometer.</b>	\$300.00
17138	<b>H-band filter, 1.65 <math>\mu\text{m}</math> CW, .30<math>\mu\text{m}</math> BW for SSP-4 infrared photometer.</b>	\$300.00
17041	<b>Johnson U (Ultra-violet) filter for SSP-5 with R6350 PMT.</b>	\$75.00
17043	<b>Johnson V (Visual) filter for SSP-5 with R6350 PMT.</b>	\$75.00
17045	<b>Strömgren u (ultra-violet) filter for SSP-5 with R6358 or R6350 PMT</b>	\$95.00
17046	<b>Strömgren v (violet) filter for SSP-5 with R6358 or R6350 PMT</b>	\$95.00
17047	<b>Strömgren b (blue) filter for SSP-5 with R6358 or R6350 PMT</b>	\$95.00
17048	<b>Strömgren y (yellow) filter for SSP-5 with R6358 or R6350 PMT</b>	\$95.00
17049	<b>H<math>\beta</math> narrow and wide band filter set with R6358 or R6350 PMT</b>	\$95.00

Set of two interference filters used to study the strength of H $\beta$  absorption at 4861Å. The narrow band filter has a halfwidth (FWHM) of 3 nm and the wide band filter has a halfwidth of 15 nm. These two filters must be used together and are often used in conjunction with the Strömgren four-color filter set.

**1" DIAMETER ROUND FILTERS, MOUNTED.**

*These filters are mounted in 1/4" metal threaded cell for use with many screw-in type filter wheels (SBIG CFW), eyepieces, or any adapter that accepts 1/4" filter cells. Filters are broadband coated and made to the highest standards for imaging in the standard colors. A custom transmission curve is supplied with each filter.*

17131	<b>Bessell U filter, 25.4mm diameter, 5mm thick</b>	\$125.00
17132	<b>Bessell B filter, 25.4mm diameter, 5mm thick</b>	\$125.00
17133	<b>Bessell V filter, 25.4mm diameter, 5mm thick</b>	\$125.00
17134	<b>Bessell R filter, 25.4mm diameter, 5mm thick</b>	\$125.00
17135	<b>Bessell I filter, 25.4mm diameter, 5mm thick</b>	\$125.00
17136	<b>Clear filter, 25.4mm diameter, 5mm thick</b>	\$55.00



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**MOUNTED 2" DIAMETER ROUND FILTERS***Glass filters mounted in 48mm metal threaded cell for insertion into 2" eyepiece or NextGEN telecompressors*

17430	<b>Violet light rejection filter, mounted in 48mm threaded cell.</b>	\$40.00
17431	<b>#8 Pale Yellow, mounted in 48mm threaded cell.</b>	\$40.00
17432	<b>Premium UV blocking filter with 435nm cutoff, mounted in 48mm threaded cell.</b>	\$55.00
17433	<b>#21 Orange, mounted in 48mm threaded cell.</b>	\$40.00
17435	<b>#23A Light Red, mounted in 48mm threaded cell.</b>	\$40.00
17436	<b>#47B Blue, mounted in 48mm threaded cell.</b>	\$40.00
17437	<b>#29 Deep Red, mounted in 48mm threaded cell.</b>	\$40.00
17438	<b>#58 Light Green, mounted in 48mm threaded cell.</b>	\$40.00
17439	<b>#80A Medium Blue, mounted in 48mm threaded cell.</b>	\$40.00
17440	<b>IR Blocking Filter, mounted in 48mm threaded cell.</b>	\$95.00
17266	<b>Optec Deep Sky Filter, mounted in 48mm threaded cell.</b>	\$95.00

**50 mm DIAMETER ROUND FILTERS for IFW Filter Wheels - unmounted***50mm diameter filters designed for factory installation into our 5-position IFW filter wheel.*

17229	<b>Violet rejection filter, 2mm thick.</b>	\$40.00
17230	<b>Clear window, 2mm thick.</b>	\$40.00
17231	<b>#8 Pale Yellow, 2mm thick.</b>	\$40.00
17232	<b>#12 Yellow, 2mm thick.</b>	\$40.00
17233	<b>#21 Orange, 2mm thick.</b>	\$40.00
17235	<b>#23A Light Red, 2mm thick.</b>	\$40.00
17236	<b>#47B Blue, 2mm thick.</b>	\$40.00
17237	<b>#29 Deep Red, 2mm thick.</b>	\$40.00
17238	<b>#58 Light Green, 2mm thick.</b>	\$40.00
17239	<b>#80A Medium Blue, 2mm thick.</b>	\$40.00
17240	<b>ND 0.6 (25% T), Neutral Density 25% transmission, 2mm thick.</b>	\$40.00
17246	<b>Dichroic RED-IR filter for Tri-Color (RGB) Imaging, 2mm thick.</b>	\$125.00
17247	<b>Dichroic GREEN-IR filter, Tri-Color (RGB) Imaging, 2mm thick.</b>	\$125.00
17248	<b>Dichroic BLUE-IR filter for Tri-Color (RGB) Imaging, 2mm thick.</b>	\$125.00
17445	<b>Optec RGB-IR Tri-Color (RGB) Imaging Filter Set, includes 17246, 17247 &amp; 17248</b>	\$295.00
17241	<b>Luminance filter with IR-Blocking for LRGB Imaging, 2mm thick</b>	\$95.00
17251	<b>Precision Clear filter for use with Bessell set, 5mm thick, A/R coated.</b>	\$85.00
17250	<b>Bessell specification U filter for photometry, 5mm thick.</b>	\$295.00
17446	<b>Bessell specification B filter for photometry, 5mm thick.</b>	\$295.00
17447	<b>Bessell specification V filter for photometry, 5mm thick.</b>	\$250.00
17448	<b>Bessell specification R filter for photometry, 5mm thick.</b>	\$250.00
17449	<b>Bessell specification I filter for photometry, 5mm thick.</b>	\$200.00
17267	<b>Optec Deep Sky filter, mounted in 50mm bushing (46mm clear aperture), 4mm thick.</b>	\$95.00

**CUSTOM OPTICAL SERVICES**

17999	<b>Custom transmission curve, 360nm to 1000nm. (No charge for filters priced \$100 &amp; up.)</b>	\$20.00
17299	<b>Custom mount user-supplied 50mm (nominal) filter into IFW 5-position wheel.</b>	\$10.00



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**BOOKS, MANUALS, AND PUBLICATIONS**

Optec product manual available on-line in pdf format for no charge.

17325	<b><i>Photoelectric Photometry of Variable Stars</i></b> , 2 <sup>nd</sup> Ed. (no dealer discount) by D.S. Hall and R.M. Genet. Topics include: Automatic Photoelectric Telescopes, Photoelectric Observatories, Data Reduction, Achieving Maximum Accuracy, Observing Program Selection, and much more.	\$26.95
17330	<b><i>Astronomical Photometry</i></b> , 2 <sup>nd</sup> edition. (no dealer discount) by A. Henden and R. Kaitchuck. The classic text and handbook written for advanced amateurs and professionals. Covers equipment, photometric systems, statistics, observational techniques, data reduction and much more. Hardbound.	\$29.95
17335	<b><i>CCD Astronomy</i></b> . (no dealer discount) by Cristian Buil. Extremely thorough discussion of astronomical CCD cameras including tips and techniques for both constructing and using CCD cameras. Topics include operating CCD and image processing algorithms.	\$26.95
17339	<b><i>TCF-S Technical Manual, printed and bound</i></b> Complete description of the TCF-S temperature compensating focuser with serial interface protocol, circuit diagrams, and theory of operation.	\$10.00
17340	<b><i>SSP-3 Generation 2 Technical Manual, printed and bound</i></b> Contains complete description of the SSP-3 photometer, Johnson and Wing filters, SSP-3A option, and accessories. Many diagrams and tables.	\$10.00
17344	<b><i>SSP-4 Technical Manual, printed and bound</i></b> Contains complete description of the theory and operation of the SSP-4 infrared photometer including circuit diagrams and detector details.	\$10.00
17345	<b><i>SSP-5 Generation 2 Technical Manual, printed and bound</i></b> Contains complete description of the SSP-5 photometer, Johnson and Strömgen filters, SSP-5A option, and accessories. Many diagrams and tables.	\$10.00
17347	<b><i>Pyxis Camera Field Rotator Technical Manual, printed and bound</i></b> Contains complete description of the Pyxis camera field rotator.	\$10.00
17349	<b><i>IFW Intelligent Filter Wheel Technical Manual, printed and bound</i></b> Complete description of the IFW automatic filter selector system including serial interface and circuit diagrams.	\$10.00



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**REPAIR SERVICES AND REPLACEMENT PARTS**

17295	Silica gel desiccator replacement cartridge for SSP Carrying and Storage Cases.	\$12.00
17501	Alignment of SSP detector with reticle.	\$25.00
17503	Replacement of 1mm photodiode, SSP-3.	\$100.00
17505	Replacement of electrometer op-amp, SSP-3.	\$40.00
17507	Cleaning & recoating of detector/electrometer, SSP-3.	\$50.00
17509	Complete detector/electrometer assembly, 1 mm SSP-3.	\$195.00
17511	Repair of SSP digital main board, flat rate.	\$95.00
17513	New SSP digital main board tested and adjusted.	\$295.00
17515	SSP-3/4/5 focusing eyepiece with reticle.	\$75.00
17519	Clean, grease and adjust flip mirror assembly.	\$15.00
17533	Upgrade SSP-3/3A to Generation 2.	\$395.00
17535	Upgrade SSP-5/5A to Generation 2.	\$495.00
17555	Replacement PMT chamber access port with desiccant, SSP-5.	\$45.00
17556	Repair of SSP-5/5A H/V power supply flat rate.	\$95.00
17558	Upgrade temperature probe and socket to 6-pin DIN type.	\$75.00
17560	Replacement temperature probe for TCF/TCF-S/TCF-S3 focuser.	\$25.00
17561	Replace RS232 interface chip, TCF-S focuser, IFW filter wheel, Pyxis rotator or SSP-3/4/5.	\$20.00
17562	Replacement drawtube for TCF/TCF-S focuser.	\$95.00
17563	IFW controller board replacement.	\$150.00
17564	IFW hand control box, complete.	\$195.00
17565	TCF-S/TCF-S3 firmware upgrade PIC chip, contact Optec for current version.	\$20.00
17567	IFW firmware upgrade PIC chip, contact Optec for current version.	\$20.00
17568	TCF-S/TCF-S3 controller board replacement.	\$150.00
17569	TCF-S/TCF-S3 hand control box, complete.	\$195.00
17572	PYXIS firmware upgrade PIC chip, contact Optec for current version	\$20.00
17575	IFW filter wheel replacement O-ring, 3-pack.	\$10.00
17577	12 VDC power supply for SSP-3/SSP-5/TCF-S/IFW/Pyxis	\$25.00
17578	5 VDC power supply for SSP-4	\$29.00

**WARRANTY AND RETURN POLICY**

We warranty all Optec products to be free from defects in workmanship and material for one year from date of delivery. We will replace or repair at our option any item, should it be defective during this period, providing there is no evidence of misuse. Warranty items must be returned to us freight prepaid. Repaired items will be returned via UPS ground within the continental USA at our expense. Overnight shipping services may be arranged in advance at the customer's expense. Contact Optec before returning any instruments for repair and to arrange for return shipping.

If not completely satisfied, return the merchandise with freight prepaid within 30 days from date of invoice and the full purchase price will be refunded. Shipping charges will not be refunded. Any damage to the product will be charged against the refund amount.



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