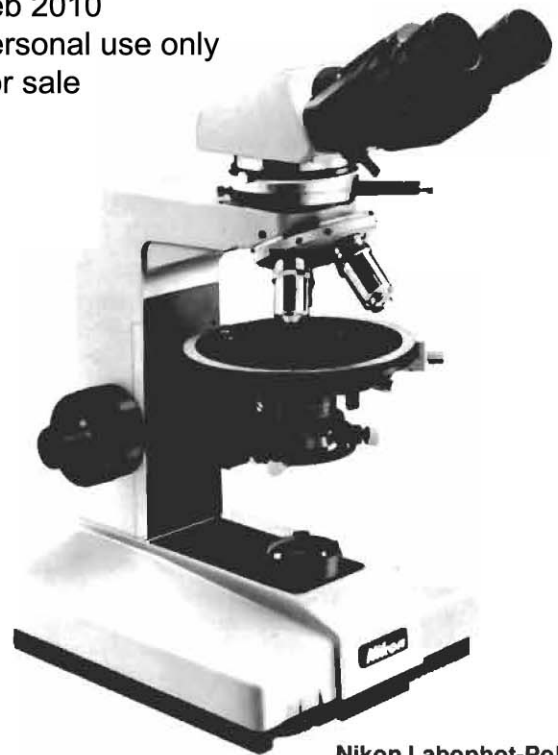

NIKON OPTIPHOT-POL & LABOPHOT-POL MICROSCOPES

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Nikon Optiphot-Pol



Nikon Labophot-Pol

Nikon's new Optiphot-Pol and Labophot-Pol Polarizing Microscopes offer unequalled advanced-design features for the ultimate in quality performance. Although each was designed to fulfill different laboratory needs, they both utilize many of the same state-of-the-art components, including Nikon's CF optical system. Unlike the compensating system that has been incorporated in microscopes for the past century, Nikon's CF system corrects the chromatic aberration in the objective and the eyepiece independently. This eliminates the problem of chromatic difference of magnification for various objective-eyepiece combinations.

The newly designed CF Achromat P (transmitted light) and CF DIC M Plan Achromat (reflected light) objectives are free of strain for maximum performance in polarized light microscopy. Integrated multilayer coatings, oversized optical elements and fixed apertures are utilized on the surface of various optical components to enhance contrast by the elimination of flare and ghost images.

A Koehler illumination system is featured in both models for excellent photomicrographic results. Vibration-

free performance is provided by their rigid cantilevered support arms, large bases, smooth focusing mechanisms with built-in roller race, and ball bearing stages.

Features exclusive to the Optiphot-Pol include a powerful 12V-50W halogen lamp; interchangeable centerable quadruple nosepiece; a special 360° rotatable stage with a goniometer divided into 1-degree increments, 2 verniers placed 90° apart (6' reading), click stops at 45° steps and a locking clamp; ultra-smooth focusing mechanism with 1 μm graduation and 4.7mm (coarse) and 0.1mm (fine) vertical movement of the stage; and a large 240 x 271mm base.

The Labophot-Pol's standard equipment includes a 6V-20W halogen lamp; fixed centerable quadruple nosepiece; 360° rotatable stage divided into 1-degree increments, 1 vernier (6' reading) and a locking clamp; ultra-smooth focusing system with 4.7mm (coarse) and 0.2mm (fine) vertical movement of the stage; and a large 200 x 256mm base.

Both the Optiphot-Pol and Labophot-Pol have a five year full warranty supported by a nationwide network of service representatives.

Product No.	Description	Price	Product No.	Description	Price
SUGGESTED NIKON OPTIPHOT-POL CONFIGURATIONS					
Nikon Optiphot-Pol binocular research polarizing microscope, equipped for <i>transmitted polarized light</i> with flatfield CF Achromat strain-free objectives.					
79145	Nikon Optiphot-Pol stand: stable 240mm x 270mm base; built-in transformer and voltmeter for 12V/50W quartz — halogen Koehler illumination system; lamp housing assembly, grounded 3-wire power cord. Coaxial coarse/fine adjustment moving on roller bearing slideways: fine adjustment to .001mm; intermediate tube with analyzer, graduated and rotatable 180°, built-in depolarizer and 20 x 6mm compensator slot. Circular rotating stage, graduated, pre-centered with 45° click stop mechanism, 150mm diameter; substage polarizer, rotatable 360° with 45° graduations; 4-place removable turret nosepiece, individually centerable, with ball bearing motion and internal clickstops. Centerable substage condenser carrier on rack and pinion slide-way. Catalog No. 76516 bulb included.	3,543.00			
79154	"BP" binocular-body tube: Siedentopf design, inclined 30° from horizontal, incorporating high transmission multilayer coatings. Magnification factor 1X, with built-in Bertrand lens.	677.00			
79040	CFDW 10x High eyepoint eyepiece	90.00			
79176	CFDW 10xCM High eyepoint eyepiece with crossline reticle and scale, 10mm in 100 graduations	172.00			
79090	Daylight blue filter, 45mm	23.00			
79165	CF P4x Achromat objective, flatfield n.a. 0.10, w.d. 20.0mm	92.00			
79166	CF P10x Achromat objective, flatfield, n.a. 0.25, w.d. 5.6mm	125.00			
79167	CF P20x Achromat objective, flatfield, n.a. 0.40, w.d. 2.23mm	166.00			
79168	CF P40x Achromat objective, flatfield, n.a. 0.65, w.d. 0.53mm	248.00			
79175	Strain-free Achromat condenser with swing-out top lens, on dovetail slider for precise interchangeability, graduated aperture diaphragm, n.a. 0.90, for magnifications from 2x to 100x	245.00			
Total for above		\$5,381.00			
Nikon Optiphot-Pol trinocular research polarizing microscope, equipped for <i>transmitted polarized light</i> with flatfield CF strain-free objectives					
79145	Nikon Optiphot-Pol stand: stable 240mm x 270mm base; built-in transformer and voltmeter for 12V/50W quartz — halogen Koehler illumination system; lamp housing assembly, grounded 2-wire power cord. Coaxial coarse/fine adjustment moving on roller bearing slideways; fine adjustment to .001mm; intermediate tube with analyzer, graduated and rotatable 180°, built-in depolarizer and 20 x 6mm compensator slot. Circular rotating stage, graduated, precentered with 45° click stop mechanism, 150mm diameter; substage polarizer, rotatable 360° with 45° graduations; 4-place removable turret nosepiece, individually centerable, with ball bearing motion and internal				
	ment to .001mm; intermediate tube with analyzer, graduated and rotatable 180°, built-in depolarizer and 20 x 6mm compensator slot. Circular rotating stage, graduated, precentered with 45° click stop mechanism, 150mm diameter; substage polarizer, rotatable 360° with 45° graduations; 4-place removable turret nosepiece, individually centerable, with ball bearing motion and internal clickstops. Centerable substage condenser carrier on rack and pinion slide-way. Catalog No. 76516 bulb included.	3,543.00	79153	"TP" trinocular body with Siedentopf binocular tube, inclined 30° from horizontal, incorporating high transmission multilayer coatings; two-way prism slider for 100% visual, or 14% visual/86% photo. Magnification factor 1X. Bertrand lens built into binocular tube.	1,394.00
			79040	CFDW 10x High eyepoint eyepiece	90.00
			79176	CFDW 10xCM High eyepoint eyepiece with crossline reticle and scale, 10mm in 100 graduations	172.00
			79090	Daylight blue filter, 45mm	23.00
			79066	CF 2x Plan Achromat objective, n.a. 0.05, w.d. 5.5mm	177.00
			79166	CF P10x Achromat objective, flatfield, n.a. 0.25, w.d. 5.6mm	125.00
			79167	CF P20x Achromat objective, flatfield, n.a. 0.40, w.d. 2.23mm	166.00
			79168	CF P40x Achromat objective, flatfield, n.a. 0.65, w.d. 0.53mm	248.00
			79175	Strain-free Achromat condenser with swing-out top lens, on dovetail slider for precise interchangeability, graduated aperture diaphragm, n.a. 0.90, for magnifications from 2x to 100x	245.00
				Total for above	\$6,183.00
Nikon Optiphot-Pol trinocular research polarizing microscope, equipped for <i>reflected and transmitted polarized light</i> with CF M Plan Achromat strain-free objectives					
79145	Nikon Optiphot-Pol stand: stable 240mm x 270mm base; built-in transformer and voltmeter for 12V/50W quartz — halogen Koehler illumination system; lamp housing assembly, grounded 2-wire power cord. Coaxial coarse/fine adjustment moving on roller bearing slideways; fine adjustment to .001mm; intermediate tube with analyzer, graduated and rotatable 180°, built-in depolarizer and 20 x 6mm compensator slot. Circular rotating stage, graduated, precentered with 45° click stop mechanism, 150mm diameter; substage polarizer, rotatable 360° with 45° graduations; 4-place removable turret nosepiece, individually centerable, with ball bearing motion and internal				

Product No.	Description	Price	Product No.	Description	Price
	clickstops. Centerable substage condenser carrier on rack and pinion slide-way. Catalog No. 76515 bulb included.	3,543.00	79154	"BP" binocular-body tube; Siedentopf design, inclined 30° from horizontal; incorporating high transmission multi-layer coatings. Magnification factor 1X, with built-in Bertrand lens.	677.00
79153	"TP" trinocular body with Siedentopf binocular tube, inclined 30° from horizontal, incorporating high transmission multilayer coatings; two-way prism slider for 100% visual, or 14% visual/86% photo. Magnification factor 1X. Bertrand lens built into binocular tube.	1,394.00	79040	CFDW 10x High eyepoint eyepiece	90.00
79040	CFDW 10x High eyepoint eyepiece	90.00	79176	CFDW 10xCM High eyepoint eyepiece with crossline reticle & scale, 10mm in 100 graduations	172.00
79176	CFDW 10xCM High eyepoint eyepiece with crossline reticle and scale, 10mm in 100 graduations	172.00	79159	Diascopic polarizer for Labophot-Pol	36.00
79022	Epi illuminator "M"; 6V/20W tungsten halogen, Koehler illuminator with field and aperture diaphragms, lemon skin filter, with metallurgical stage plate and transformer, 1x magnification factor.	802.00	79165	CF P4x Achromat objective, flatfield n.a. 0.10, w.d. 20.0mm	92.00
79160	Episcopic polarizer	44.00	79166	CF P10x Achromat objective, flatfield n.a. 0.25, w.d. 5.6mm	125.00
79090	Daylight blue filter, 45mm	23.00	79168	CF P40x Achromat objective, flatfield n.a. 0.65, w.d. 0.53mm	248.00
78852	CF DIC 5x M Plan Achromat objective, n.a. 0.10, w.d. 20.0mm	299.00	79175	Strain-free Achromat condenser with swing-out top lens, on dovetail slider for precise interchangeability, graduated aperture diaphragm, n.a. 0.90, for magnifications from 2x to 100x	245.00
78853	CF DIC 10x M Plan Achromat objective, n.a. 0.25, w.d. 9.0mm	430.00	79090	Daylight blue filter, 45mm	23.00
78854	CF DIC 20x M Plan Achromat objective, n.a. 0.40, w.d. 3.0mm	498.00		Total for above	\$3610.00
79175	Strain-free Achromat condenser with swing-out top lens, on dovetail slider for precise interchangeability, graduated aperture diaphragm, n.a. 0.90, for magnifications from 2x to 100x	245.00		Nikon Labophot-Pol trinocular polarizing microscope, equipped for transmitted polarized light with flatfield CF strain-free objectives	
	total for above	\$7,540.00	79147	Nikon Labophot-Pol stand with in-base high-intensity 6V/20W tungsten halogen Koehler illumination system; in-base transformer with continuously variable solid-state integrated circuit intensity control; grounded 3-wire power cord. Low position coaxial coarse and fine focus assembly on roller bearing slideways; fine adjustment is graduated in 2 micrometer units, coarse and fine adjustments have 30mm travel. Centerable substage condenser carrier on rack and pinion slideway; dovetail slider for rapid interchange of condensers; intermediate tube with analyser, graduated and rotatable 180°, built-in depolarizer and 20 x 6mm compensator slot. Circular rotating stage, graduated and precentered, 150mm diameter; 4-place turret nosepiece, individually, centerable, with ball bearing motion and internal click stop. Catalog No. 79099 bulb included.	1,902.00
	SUGGESTED NIKON LABOPHOT-POL CONFIGURATIONS		79153	"TP" trinocular body with Siedentopf binocular tube, inclined 30° from horizontal, incorporating high transmission multilayer coatings; two-way prism slider for 100% visual, or 14% visual/86% photo. Magnification factor 1X. Bertrand lens built into binocular tube.	1,394.00
	Nikon Labophot-Pol binocular polarizing microscope, equipped for transmitted polarized light with flatfield CF Achromat strain-free objectives		79040	CFDW 10x High eyepoint eyepiece	90.00
79147	Nikon Labophot-Pol stand with in-base high-intensity 6V/20W tungsten halogen Koehler illumination system; in-base transformer with continuously variable solid-state integrated circuit intensity control; grounded 3-wire power cord. Low position coaxial coarse and fine focus assembly on roller bearing slideways; fine adjustment is graduated in 2 micrometer units, coarse and fine adjustments have 30mm travel. Centerable substage condenser carrier on rack and pinion slideway; dovetail slider for rapid interchange of condensers; intermediate tube with analyzer, graduated and rotatable 180°, built-in depolarizer and 20 x 6mm compensator slot. Circular rotating stage, graduated and precentered, 150mm diameter; 4-place turret nosepiece, individually centerable, with ball bearing motion and internal click stop. Catalog No. 79099 bulb included.	1902.00	79176	CFDW 10xCM High eyepoint eyepiece with crossline reticle and scale, 10mm in 100 graduations	172.00

Product No.	Description	Price	Product No.	Description	Price
79090	Daylight blue filter, 45 mm	23.00	79090	Daylight blue filter, 45mm	23.00
79159	Diascopic polarizer for Labophot-Pol	36.00	79159	Diascopic polarizer for Labophot-Pol	36.00
79066	CF 2x Plan Achromat objective, n.a. 0.05, w.d. 5.5mm	177.00	79022	Epi illuminator "M"; 6V/20W tungsten halogen, Koehler illuminator with field and aperture diaphragms, lemon skin filter, with metallurgical stage plate and transformer, 1x magnification factor	802.00
79166	CF P10x Achromat objective, flatfield, n.a. 0.25, w.d. 5.6mm	125.00	79160	Episcopic polarizer	44.00
79168	CF P40x Achromat objective, flatfield, n.a. 0.65, w.d. 0.53 mm	248.00	78852	CF DIC 5x M Plan Achromat objective, n.a. 0.10, w.d. 20.0mm	299.00
79175	Strain-free Achromat condenser with swing-out top lens, on dovetail slider for precise interchangeability, graduated aperture diaphragm, n.a. 0.90, for magnifications from 2x to 100x	245.00	78853	CF DIC 10x M Plan Achromat objective, n.a. 0.25, w.d. 9.0mm	430.00
Total for above		\$4,412.00	78854	CF DIC 20x M Plan Achromat objective, n.a. 0.40, w.d. 3.0mm	498.00
			78855	CF DIC 40x M Plan Achromat objective, n.a. 0.65, w.d. 1.0mm	598.00
			Total for above		\$6533.00

Nikon Labophot-Pol trinocular polarizing microscope, equipped for reflected and transmitted light with CF M Plan Achromat strain-free objectives

79147	Nikon Labophot-Pol stand with in-base high-intensity 6V/20W tungsten halogen Koehler illumination system; in-base transformer with continuously variable solid-state integrated circuit intensity control; grounded 3-wire power cord. Low position coaxial coarse and fine focus assembly on roller bearing slideways; fine adjustment is graduated in 2 micrometer units, coarse and fine adjustments have 30mm travel. Centerable substage condenser carrier on rack and pinion slideway; dovetail slider for rapid interchange of condenser carrier on rack and pinion slideway; dovetail slider for rapid interchange of condensers; intermediate tube with analyser, graduated and rotatable 180°, built-in depolarizer and 20 x 6mm compensator slot. Circular rotating stage, graduated and precentered, 150mm diameter; 4-place turret nosepiece, individually centerable, with ball bearing motion and internal click stop. Catalog No. 79099 bulb included	1,902.00
79153	"TP" trinocular body with Siedentopf binocular tube, inclined 30° from horizontal, incorporating high transmission multilayer coatings; two-way prism slider for 100% visual, or 14% visual/86% photo. Magnification factor 1X. Bertrand lens built into binocular tube.	1394.00
79040	CFDW 10x High eyepoint eyepiece	90.00
79176	CFDW 10xCM High eyepoint eyepiece with crossline reticle and scale, 10mm in 100 graduations	172.00
79175	Strain-free Achromat condenser with swing-out top lens, on dovetail slider for precise interchangeability, graduated aperture diaphragm, n.a. 0.90, for magnifications from 2x to 100x	245.00

NIKON LABOPHOT-POL AND OPTIPHOT-POL COMPONENTS AND ACCESSORIES

Microscope Stands

79145	Nikon Optiphot-Pol stand: stable 240mm x 270mm base; built-in transformer and voltmeter for 12V/50W quartz — halogen Koehler illumination system; lamp housing assembly, grounded 3-wire power cord. Coaxial coarse/fine adjustment moving on roller bearing slideways; fine adjustment to .001mm; intermediate tube with analyser, graduated and rotatable 180°, built-in depolarizer and 20 x 6mm compensator slot. Circular rotating stage, graduated, precentered with 45° click stop mechanism, 150mm diameter; substage polarizer, rotatable 360° with 45° graduations; 4-place removable turret nosepiece, individually centerable, with ball bearing motion and internal click-stops. Centerable substage condenser carrier on rack and pinion slideway. Catalog No. 76515 bulb included	3,543.00
79147	Nikon Labophot-Pol stand with in-base high-intensity 6V/20W tungsten halogen Koehler illumination system; in-base transformer with continuously variable solid-stage integrated circuit intensity control; grounded 3-wire power cord. Low position coaxial coarse and fine focus assembly on roller bearing slideways; fine adjustment is graduated in 2 micrometer units, coarse and fine adjustments have 30mm travel. Centerable substage condenser carrier on rack and pinion slideway; dovetail slider for rapid interchange of condensers; intermediate tube with analyser, graduated and rotatable 180°, built-in depo-	

Product No.	Description	Price	Product No.	Description	Price	
	larizer and 2 x 6mm compensator slot. Circular rotating stage, graduated and precentered, 150mm diameter; 4-place turret nose-piece, individually centerable, with ball bearing motion and internal click stop. Catalog No. 79099 bulb included	1,902.00				
	Body Tubes			Long Working Distance Objectives for use with Universal Stage		
79153	"TP" trinocular body with Siedentopf binocular tube, inclined 30° from horizontal, incorporating high transmission multilayer coatings; two-way prism slider for 100% visual, or 14% visual/86% photo. Magnification factor 1X. Bertrand lens built into binocular tube.	1,394.00	77250	Achromat U 5x, n.a. 0.10.	253.00	
79154	"BP" binocular-body tube; Siedentopf design, inclined 30° from horizontal; incorporating high transmission multilayer coatings. Magnification factor 1X, with built-in Bertrand lens	677.00	77252	Achromat U 10x, n.a. 0.22.	220.00	
79155	"AP" monocular body tube with built-in Bertrand lens; high transmission multilayer coatings. Magnification factor 1X	958.00	77254	Achromat U 20x, n.a. 0.33.	358.00	
	Attachable Mechanical Stage			Reticles (21mm)		
77237	Attachable mechanical stage, low-profile; 30 x 30mm for circular stages	328.00		Fits built-in reticle holder of CFDW 10x eyepiece (#79040).		
	Dual-viewing teaching attachment		SO75950	0.1" scale in 100 graduations	30.00	
79030	Dual-viewing accessory with attached binocular body tube, Siedentopf design; illuminated pointer with green and white arrows, power supply w/on-off switch, less eyepieces. Magnification factor 1.25X	987.00	SO75955	0.5" scale in 100 graduations	30.00	
	Episcopic Polarized Light		SO75960	5mm scale in 100 graduations	30.00	
79022	Epi illuminator "M"; 6V/20W Tungsten Halogen, Koehler illuminator with field and aperture diaphragms, lemon skin filter, with metallurgical stage plate and transformer, 1x magnification factor.	802.00	SO75961	10mm scale in 100 graduations	30.00	
79160	Episcopic polarizer	44.00	SO75962	1mm squares	30.00	
79021	Episcopic polarizing filter set.	87.00	SO75963	0.5mm squares	30.00	
	Diascopic polarizer for Labophot-Pol		SO75966	Crossline 90°	30.00	
79159	Diascopic polarizer for Labophot-Pol.	36.00	SO75967	Whipple disc	30.00	
	Compensators		SO75968	Porton Reticle	30.00	
79161	¼λ plate — first order red compensator.	254.00	76960	Eyepiece pointer.	2.50	
79162	Senarmont compensator.	157.00		Object Marker		
79163	Quartz wedge.	523.00	79032	Object Marker, Spring Loaded	62.00	
	Universal 4 Axis Stage for use with Optiphot-Pol			Stage micrometers		
77240	Universal stage, 4 axis with 3 pairs of 13.5mm diameter hemispheres with ND 1.516, 1.556 and 1.649, stage plate, 2 coating screws and fitted case.	3,681.00		76954	Stage micrometer A (1mm scale divided into 100 parts).	59.00
				76955	Stage micrometer B (0.2mm with 400 squares).	59.00
					Filters	
			79090	Filter, 45mm, daylight blue.	23.00	
			79091	Filter, 45mm, NCB10 daylight color balance recommended for photomicrography.	33.00	
			79092	Filter, 45mm, ND2 neutral density.	16.00	
			79093	Filter, 45mm, ND16 neutral density.	16.00	
			79094	Filter, 45mm, GIF 546nm green interference.	21.00	
				Replacement Accessories.		
			79157	4-place turret nosepiece, individually centerable, with ball bearing motion and internal clickstop. As replacement.	536.00	
			79099	6V20W Tungsten Halogen bulb.	7.00	
			76516	12V50W Tungsten Halogen bulb.	7.00	
			76997	Lens cleaning tissue back — 50 sheets.	.50	
			76999	Immersion oil 8cc (PCB free).	4.00	
			77001	Immersion oil 50cc (PCB free).	16.50	
			77002	Immersion oil 500cc (PCB free).	138.00	
			79186	6V Bulb for Teaching Attachment	2.00	

CF Objectives (160mm tube length) Type		Individual Magnification	Product Number	Numerical Aperture	Working Distance (mm)	Focal Length (mm)	Price
CF Strain Free achromat (flatfield)	Dry	P 4x	79165	.10	20.0	30.97	\$ 92.00
		P 10x	79166	0.25	5.6	16.6	125.00
		P 20x	79167	0.40	2.23	8.75	166.00
		P 40x ^e	79168	0.65	0.53	4.4	248.00
		P100x ^e	79169	1.25	0.14	1.81	290.00
Plan achromat	Dry	2x	79066	0.05	5.5	70.1	177.00
		P 60x	79173	0.85	0.43		730.00
CF Strain Free	Dry	DIC 20x	78843	0.4	1.4	8.4	449.00
		DIC 40x ^e	78844	0.65	0.48	4.1	520.00
Plan achromat	Oil	DIC100x ^e	78845	1.25	0.2	1.8	897.00

CF Objectives (210mm tube length) Type		Individual Magnification	Product Number	Numerical Aperture	Working distance (mm)	Focal Length (mm)	Price
CF Strain Free M Plan Achromat	Dry	DIC 5x	78852	0.10	20.0	27.6	299.00
		DIC 10x	78853	0.25	9.0	21.2	430.00
		DIC 20x	78854	0.40	3.0	11.6	498.00
		DIC 40x ^e	78855	0.65	1.0	5.3	598.00
		DIC100x ^e	78856	0.90	0.3	2.1	1,146.00
CF M Plan Achromat	Dry	LWD 20x	78729	0.40	6.0	10.1	598.00
		LWD 40x ^e	78730	0.55	3.0	5.19	747.00
	Oil	100x ^e	78736	1.25	0.23	2.23	969.00
CF M Plan Apochromat	Dry	50x ^e	78738	0.90	0.22	4.24	1,494.00

CF Eyepiece				Field No.		
High Eyepoint Wide Field		CFDW 8X	79039	18		\$142.00
		CFDW 10x	79040	18	25	90.00
		CFDW 10xCM	79176	18	25	172.00
		CFDW 10xPM ^d	79045	18	25	144.00
		CFDW 15x	79043	14	16.7	96.00

CF Projection Lenses			
		CFPL 2.5x	79410
		CFPL 4x	79411
		CFPL 5x	79412
			126.00
			126.00
			126.00

^dPhoto mask
^eSpring loaded

All prices are suggested selling prices. Terms: Net 30 days
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change without notice.

Nikon

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Mid Atlantic: 10605 Concord Street, Kensington, MD 20795, (301) 933-7900
New England: 36 Washington St., Wellesley Hills, MA 02181, (617) 969-8600
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