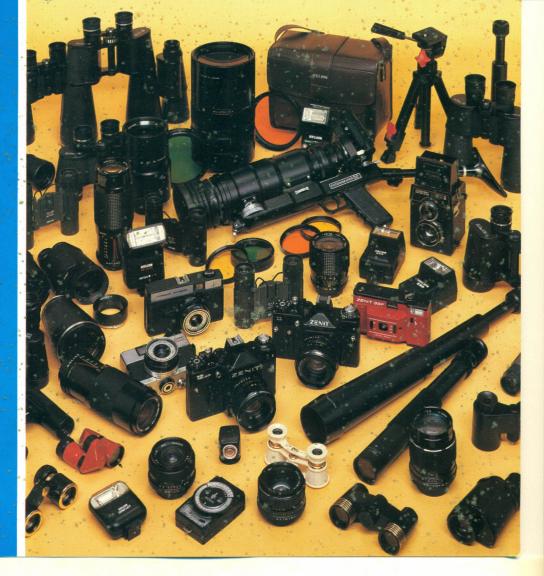
ZENITH +HELIOS



Technical & Optical Equipment (London) Ltd.

Zenith House, Unit D, 69 Lawrence Road Tottenham, London N15 4EB





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INTRODUCTION

The names Zenith and Helios have for many years been associated with the best, in 'value-for-money' photographic, and top quality optical equipment.

The latest Zenith 12XP SLR camera with its fine specification follows the examples set by its world-famous predecessors in establishing itself as one of the most popular and successful cameras in its price range.

T.O.E. (London) Ltd. constantly ensure to maintain the high standards that have become associated with their name. The comprehensive range of cameras, interchangeable Helios lenses and other optical equipment and accessories illustrated in this catalogue, offer tremendous scope to the photographer, outdoor activist or sports enthusiast. All are designed and produced to give many years of satisfaction and reliability to the user.



3

ZENITH 12

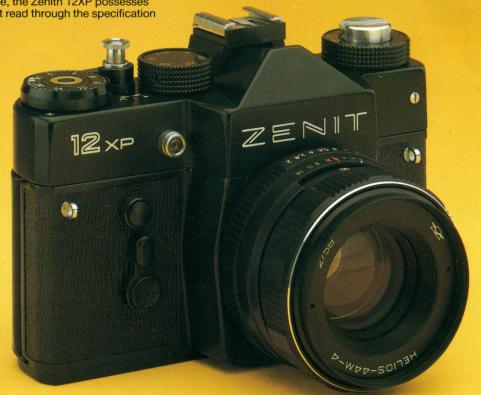
The heart of a 35mm SLR system of proven pedigree, the Zenith 12XP possesses features found in cameras many times its price! Just read through the specification and judge for yourself the value Zenith offers!

Rapid LED viewfinder indication

A sensitive CdS cell takes accurate store

A sensitive CdS cell takes accurate stop-down readings through the lens-automatically compensating for the effect of any accessory fitted. Instantly visible glowing signals in the viewfinder indicate over or under exposure – when both signals flash rapidly in sequence 'correct' exposure is indicated. The meter is calibrated for films from 16 to 500 ASA (13 to 28 DIN) and is powered by two G12 cells (supplied).

- A horizontal travelling cloth focal plane shutter speeded 1/30th to 1/500th sec + 'B'.
- Electronic flash synchronised at 1/30th sec. via "hot-shoe" or 3mm co-axial connection.
- Self-timer with approximately 7 second delay ample time to get in the picture!
- Strong leather-clad ever-ready case and neckstrap available as an optional extra.
- Helios 44m-4 Lens the 'standard' lens supplied with this camera has a high reputation for optical brilliance and is, according to leading photo magazines, "quite outstanding in its price range". This 6 element F.A.D. lens has 42mm thread mounting for easy substitution of standard 'single-pin' interchangeable auto lenses and accessories. Aperture range: f/2 to f/16 with click stops at full and half apertures (except between f/11 and f/16). Focussing range 0.5m to infinity. Filter size 52mm. Dimensions: 135 x 95 x 93mm. Weight: 900g.



ZENITHII

Successor to a long line of rugged, reliable 35mm SLR cameras, the Zenith 11 features a host of modern refinements. And don't forget this inbuilt value can be extended still further with an extensive array of easily affordable quality accessories. Features include:-

- Selenium cell metering system, sensitive and accurate, powered by ambient light (needs no batteries) and calibrated 16 to 500 ASA/13 to 28 DIN. It gives simple-to-read exposure information on the camera's top plate. Note the new faster films e.g. 1000 ASA can be used with the Zenith 11 camera by manually adjusting the exposure reading obtained.
- A horizontal travelling, cloth focal plane shutter speeded 1/30th to 1/500th sec. + 'B'.
- Electronic flash synchronised at 1/30th sec. via "hot-shoe" or 3mm co-axial connection.
- Self-timer with approximately 7 second delay ample time to get yourself in the picture!
- Strong leather-clad ever-ready case and neckstrap available as an optional extra.
- Helios 44m-4 Lens as for Zenith 12. Dimensions: 135 x 95 x 93mm. Weight: 900g.

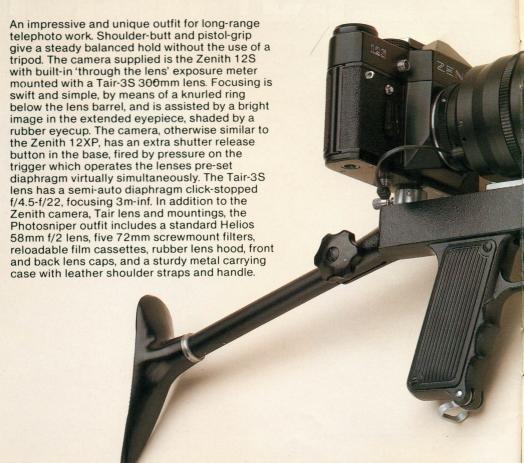


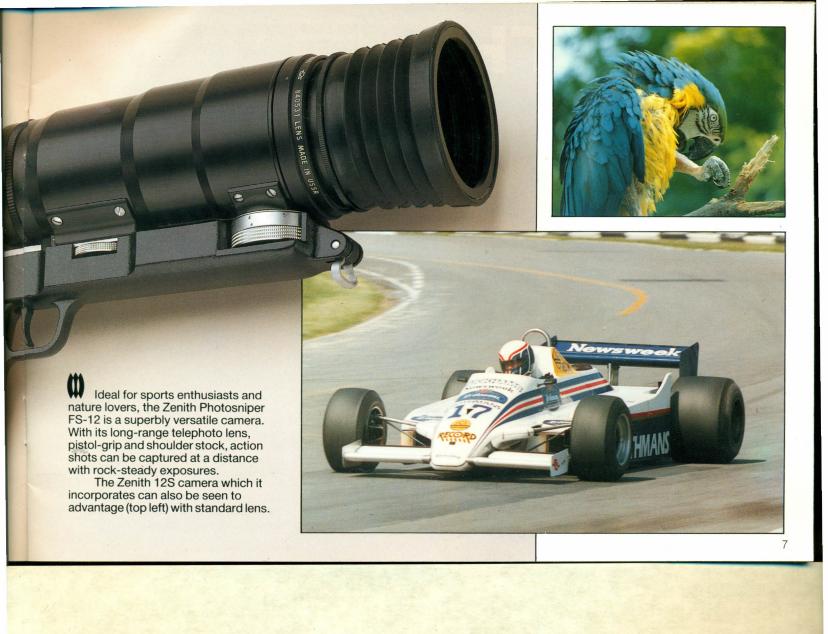
ZENITH+HELIOS

ZENITH PHOTOSNIPER









ENTH 35F



The Zenith 35F is an extremely versatile compact camera, with a fine specification. It is incredibly easy to use and produces excellent results. Available in traditional black and also in red. It features:

- Focus-free optical glass lens with high resolution
- Built-in flash
- Low light sensor
- Robust construction
- Double exposure prevention
- Built-in lens cover

Specification:

Viewfinder: Telescopic

Lens: Focus-free optical glass lens with high

resolution

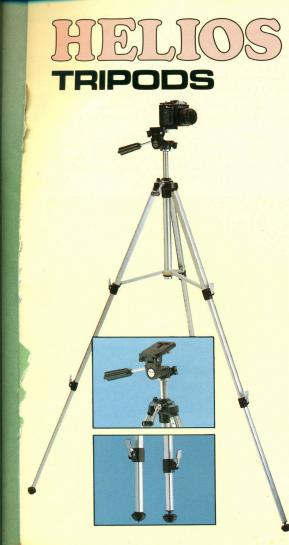
Focussing range: 1.5 metres to inf.

Relative aperture: f/5.6 Power supply: 2 x 1.5v AA size batteries

Film size: 35mm Built-in flash: GN 12

Film speed accepted: 100, 200, 400ISO

Dimensions: 124 x 76 x 51mm Weight: 270g (without batteries).



Helios T-61 Tripod Dolly

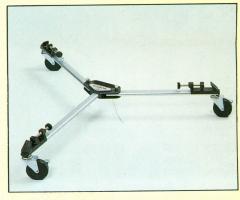
This rigid, yet fully mobile, tripod platform is an accessory the video and movie enthusiast will appreciate – ideal also for lighting equipment and large format still cameras. Silent running on 75mm castors with individual positive toe-action brakes it will, when erect, take heavyweight tripods with a base diameter up to 85cm (leg locks adjustable up to 55mm dia.), yet with its built-in handgrip is easily portable too! (Folds down to around 550m x 150mm and weighs a mere 1800g.)

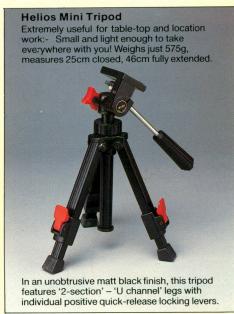
Helios T-1 Tripod

Height: 55cm closed, 133cm fully extended. Sturdy 3-section 'U channel' legs. Quick-change spike/rubber feet for outdoor/indoor use. Individual locking levers for swift and easy leg-height adjustment. Self-erecting centre-brace for extra rigidity. 28cm geared centre column threaded at base for vertical copying or low-level shots. 3 way pan/tilt head with independent controls. Padded platform 60 x 80mm, suitable for most 35mm and roll-film cameras. Bright satin finish with matt black enamel trim. Complete with smart zip-up carrying-case and adjustable shoulder strap.



A supple, simulated leather zip-up carrying case, with soft fabric lining and adjustable shoulder strap. Accepts and protects tripods with an overall size of around 550 x 90mm.





The Zeniths are system cameras - and these pages show just how much we mean by that.
The comprehensive range of precision
engineered Helios lenses (illustrated on these pages) offer tremendous scope for the photographer.
All have M42 thread mount to fit your Zenith,

and all have been chosen to give you quality and value.

The three zoom lenses cover the complete range from wide-angle through to long telephoto. Each is infinitely adjustable throughout its range, and one has a "close-focus" facility which allows you to approach to within around 9" of your subject.

ENITH + HILLIOS

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Specifications	Helios Auto 28	Helios Auto 135	Helios Auto 28-70mm close focus	Helios Auto 75-150mm non-Macro				
Focal length:	28mm	135mm	28-70mm	75-150mm				
Construction:	6 elements in 6 groups	5 elements in 5 groups	13 elements in 13 groups	9 elements in 7 groups				
Angle of view:	74°	18°	74°—34°	32°11-16°25				
Distance scale:	0.3m-INF	1.5m-INF	2.1 m (close focus 0.23m)-INF	1.9m—INF				
Diaphragm:	Fully auto/manual f/2.8-22	Fully auto/manual f/2.8-22	Fully auto only f/3.5/3.8-16	Fully auto only f/3.8-22				
Filter size:	49mm	52mm	67mm	55mm				
Length:	63mm approx.	72mm approx.	98mm approx.	115mm approx.				
Weight:	155g approx.	290g approx.	465g approx.	400g approx.				
				One touch zoom Multi coated				



Subject as seen with standard 44M-4 lens

Helios Auto 28

Helios Auto 135





Helios Auto 28-70mm **Zoom**

29°2 1.5r Full

49m 123i 440i







80-200mm non-Macro 3M-5A) Mirror Lens Mirror Lens alteration without prior notice. 80-200mm 500mm 1100mm Catadioptric system 12 elements in 9 groups Catadioptric system 4 elements in 3 groups 5 elements in 3 groups 2.5° MTO-11 CA 29°22-6°21 1.5m—INF 4m-INF 10m-INF Fixed at f/8.5 Fixed at f/10.5 Fully auto only f/5.6-32 77mm screw 120mm MTO 3M-5A 175mm approx.
1.1kg approx., supplied complete with 4 filters in fitted leather case. 278mm approx. 3.6kg approx., supplied complete with 3 filters in fitted leather case. 123mm approx. 440g approx. One touch zoom Multi coated Helios Auto 80-200mm **Zoom** Helios Auto 75-150mm **Zoom**

MTO 1000A

Helios Auto

MTO 500A (or MTO

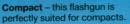
Due to a policy of continual development specifications may be subject to



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Every photographer needs a flashgun, whether it is just for the occasional family gathering, or for more serious 'studio type' work where special lighting effects are often required. With five models to choose from, you're bound to find the ideal gun to suit your needs!







Helios 220 - An easy-to-use manual unit with high light output. Ideal for compacts.



Helios 228 – Same size as the 220, but has a higher light output.



Helios 34 - A high light output gun with adjustable bounce head. Auto/manual.



Helios 38 - Another versatile high light output unit with 7 position bounce head. Auto/manual.

*Dependent on battery type (Penlight or Alkaline) and, in the case of Auto flashguns whether Auto or Manual operation is selected.														
	Helios Compact	Helios 220	Helios 228	Helios 34 Auto	Helios 38 Auto									
GN (100ASA/M) Auto Apertures	12 None	14 None	17 None	17 f/2.8 & f/5.6 1.0 to 6 m	24 f/2 & f/4 1.2 to 12 m									
Auto Range Power Source	None DC, one 1½ v AA size batt.	None DC, four 1½ v AA size batts.	None DC, four 1½ v AA size batts.	DC, two 1½ v AA size batts.	DC, four 1½v AA size batts.									
Recycling Time	7 to 8 secs	5 secs (min)	5 secs (min)	6 secs	0.5 to 6 secs									
Flashes per battery set*	70 to 140	120 to 250	120 to 250	80	120 to 800									
Flash Duration	1/2,000th sec	1/2,000th sec	1/2,000th sec	1/2,000th to 1/25,000th sec	1/1,000th to 1/30,000th sec									
Connection	Locking Hot Shoe	Locking Hot Shoe or coaxial cable	Locking Hot Shoe or coaxial cable	Locking Hot Shoe or coaxial cable	Locking Hot Shoe or coaxial cable									
Flash Head Movements	None	None	None	0°, 45°, 60°, 75° & 90°	0°, 15°, 30°, 45°, 60°, 75° & 90°									
Dimensions (approx).	73 x 56 x 23 mm	102 x 60 x 56 mm	102 x 60 x 56 mm	130 x 75 x 40 mm	105 x 72 x 41 mm									
Weight (W/out Batts), approx.	43g	134g	134g	160 g	170g									



Helios Slave Flash Unit
For multiple flash photography, this small remote unit simply clips to the coaxial cable of the extension flashgun which is fired in automatic synchronisation by light from the main gun. Works with any combination of flashguns, indoors or out, up to 30 feet away, without





Helios Close-up Lenses
The simplest way – they screw on to your standard lens like a filter. No exposure adjustment is needed. Available in powers of 1, 2 or 3 dioptres. 52mm screwmount only.

Helios Filters

Skylight. Ultra-Violet and 2x Yellow. Available in both 52mm or 49mm screwmounts (skylight 52mm only).





A set of three in 11mm, 20mm and 30mm lengths. Used singly or in combination they allow an even closer approach to the subject than closeup lenses. Reproduction ratios: 1:10 to 1:1 with standard lens. M42 thread mount. A set of Zenith manual tubes is also available.







Helios Macro Bellows

A sturdy unit providing rack and pinion focusing over a continuously variable range (far more flexible than the fixed definite steps of extension tubes) and reproduction ratios 0.8x to 4.2x with standard lens. Rotating, lockable camera and lens mounts. M42 thread mount. Bellows available with Canon/Olympus/ Pentax-K mounts (see inset) - adaptor kits available too in same fittings for owners of existing M42 mount bellows.

Helios Teleconverters

These fine quality fully coated 4 element converters, in 2x and 3x magnification powers, fit between the camera body and lens in use and double or treble the focal length of that lens. A standard lens becomes a useful 100mm plus portrait lens or a telephoto in excess of 150mm, for example. Both models operate with auto/ manual diaphragm and come complete with case. M42 thread mount.

HIELIOS

GADGET BAGS AND CASES



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Helios Aluminium Cases

A range of five sturdy reinforced outfit cases, finished in smart heavy duty aluminium with bright metal trim. All complete with strong carry-handle and locks, two keys and clip-on shoulder strap. Model Nos. TAC-1, TAC-2 and TAC-3 are suitcase style with foam padded lid and base plus replaceable 'diced foam' block, (simply pull out the cubes to the shape and depth required to fit your camera outfit). Model No. TAC-4 is suitcase style, as above, but with rubberised grooved interior and adjustable partitions, Model No. TAC-5 also makes use of rubberised grooved interior and adjustable partitions, but is an

ingenious cantilevered 'toolbox' style with three compartments that fully utilise available space while simultaneously providing ready access to the most comprehensive camera system.

Internal dimensions mm (approx.)

Ixwxh	Weight
340 x 270 x 70	2300g
385 X 285 x 75	3050g
285 x 210 x 80	2250g
415 x 300 x 85	3000g
330 x 180 x 100	3800g
	340 x 270 x 70 385 X 285 x 75 285 x 210 x 80 415 x 300 x 85

*(main compartment - plus twin lid compartments - 33 x 85 x 85 mm)



Helios 2000

Room enough for 35mm camera, lenses, films and much, much, more in this capacious holdall. Main compartment (internal dimensions 235 x 135 x 115mm), plush lined with removable partitions, plus large flapped outer pocket, sealed by snaplock fastener on main cover, for smaller accessories. Smartly finished with light tan nylon outer and contrast trim, protective feet on base, 1" webbing adjustable carrying-strap with non-slip rubber shoulder pad. Weight 370g.

Helios Black Handybag

Lightweight (315g) padded holdall in water-repellant black nylon with vinyl trim outside, spongeable vinyl interior (dimensions 220 x 120 x 135mm) with removable 3-section partition.

Overlapping inner flaps and lid allow instant access via velcro fasteners.

Protective feet. Adjustable shoulder-strap.



HELIOS

GADGET BAGS ACCESSORIES



Helios 1500 Handybag

Neat and compact, yet with ample room for 35mm camera, interchangeable lenses, filters and other accessories. In good quality simulated leather complete with adjustable padded shoulder strap.

Dimensions: 180 x 230 x 140mm



Helios Neckstraps

Ideal for cameras or binoculars, these strongly woven straps come in two widths, 50mm bandolier style and 25mm standard – all are fully adjustable and fitted with swivel rings and quick release safety clips.





Zenith Darkroom Phototimer

A lever-wound luminous alarm with 1-minute settings up to 50 minutes maximum. For wall-mounting or table-top use. Dial 41/8" diameter.



Leningrad 8 Exposure Meter

A sensitive and accurate selenium cell exposure meter, both compact and lightweight. Easy-to-read dials give clear information of incident and reflected light. Complete with case and lanyard.

Specification:

Film Speeds: 3-1600ASA/6 33DIN Shutter Speeds: 1/2000th to 30 seconds Apertures: f/1 4 to f/22

Apertures: f/1.4 to f/22 Dimension: 80 x 53 x 25mm.



H HILLIAM

-

20 x 60 High magnification for long-range observation – ideally used with a tripod (tripod adaptor supplied)



Some simple facts on binoculars and telescopes.

telescopes.

Using example (10x50). The first part of the code (10x) represents the power of magnification; i.e. the image will appear ten times closer than with the naked eye. Magnifications from 6x-10x are ideal for general use, spectator sports and tourism. Higher magnifications are generally used for more specialized purposes.

The second part of the code (50) represents the effective diameter of the objective lens. The relation between the two figures (10x50) determines how well the binoculars 'see' in dim light. A 7x50 model has more night vision than a 10x50, a 10x50 has more than a 12x50.

			BII	NOCULA	RS	
	20 x 60	12 x 40	10 x 50	8 x 40	8 x 30	7 x 50
Magnification	20 x	12x	10x	8x	8x	7x
Objective glass dia.	60 mm	40 mm	50 mm	40 mm	30 mm	50mm
Exit pupil diameter	3 mm	3.3 mm	5mm	5mm	3.8 mm	7.1 mm
Dioptric adjustment	±6	±6	±5	±5	±5	±5
Field of view	3°30′	6°	6°	7°30′	8°30′	7°
Field at 1000 m	63 m	105m	105 m	131 m	148m	122m
Dimensions L W H	260 mm 215 mm 75 mm	. 140 mm 190 mm 60 mm	191 mm 190 mm 66 mm	150 mm 182 mm 56 mm	155 mm	200 mm 190 mm 64 mm
Weight (w/out case)	1400g	850g	890 g	790g	660 g	980g

10 x 50 For use in all light conditions – ideal for sports enthusiasts and nature lovers.



5 YEAR Guarantee

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ARS	3			ROOF PRISM BINOCULARS		TELESCOPES								монос	CULARS				OPERA C			
	8×30	7 x 50	7 x 35	10 x 25	8 x 21	Zenitsa 8-24 x 40	ZRT 460 20 x 50	Turist 5 20 x 30	Turist 3 20 x 50	Turist 4 10 x 30	Turist P 8-20 x 32	12 x 40/20 x 60		10 x 50	8×30	7 x 50	5×25	OG4	OG3	OG2	OG1	
ı	8x	7x	7x	10x	8x	8-24x	20x	20x	20×	10x	8-20×	12x	20 x	10x	8x	7×	5x	4x	2.5x	2.5x	2.5 x	Magnification
3	30 mm	50mm	35 mm	25mm	21 mm	40 mm	50 mm	30 mm	50 mm	30 mm	32 mm	40 mm	60 mm	50 mm	30 mm	50 mm	25 mm	36 mm	24mm	24 mm	25 mm	Objective glass dia.
3	3.8mm	7.1 mm	5mm	2.5 mm	2.5 mm	5-1.6mm	2.5 mm	1.5 mm	2.5 mm	3 mm	4-1.6 mm	3.3 mm	3mm	5 mm	3.8 mm	7.1 mm	5mm	9mm	9.6 mm	9.6 mm	10mm	Exit pupil diameter
н	±5	±5	±5	N/A	N/A	±5	±5	-7+10	+15	+10	±5	±6	± 6	±5	±5	± 5	±5	+7	+7	+7	+7	Dioptric adjustment
ш	8°30′	7°	8°30′	5.5°	7°	5°-1°40′	3°	2°	2°	4°	5°-2°	6°	3°30′	6°	8°30′	7°	10°	7°	12°40′	12°40′	11°40′	Field of view
ш	148m	122 m	148m	96 m	122 m	87 m	52 m	35 m	35 m	70 m	87 m	105 m	63 m	105 m	148 m	122 m	174 m	N/A	N/A	N/A	N/A	Field at 1000 m
1 1	120 mm 155 mm 57 mm	200 mm 190 mm 64 mm	130 mm 175 mm 53 mm	115mm 125mm 24mm	98 mm 125 mm 24 mm	308/465 mm 60 mm	360/375 mm 150 mm	202/328 mm 37 mm	515/215 mm 59mm	350/210 mm 39 mm	330mm 39mm	150 mm 85 mm 65 mm	250 mm 95 mm 65 mm	186 mm 86 mm 66 mm	120 mm 60 mm 50 mm	200 mm 85 mm 64 mm	74 mm 52 mm 52 mm	42 mm 115 mm 70 mm	35 mm 107 mm 50 mm	34 mm 100 mm 53 mm	32 mm 105 mm 55 mm	L Dimensions W H
1	660 g	980g	700g	250 g	210g	580g	800g	250 g	600g	250 g	400 g	450 g	750 g	430 g	300 g	450 g	130 g	270 g	140g	140g	150g	Weight (w/out case)



HELIOS

ROOF PRISM BINOCULARS

These folding 'roof prism' binoculars are light and compact, easy to carry, yet robust. Ideal for nature lovers and sports enthusiasts, the central focussing feature, allows you to zero in on your subject quickly and easily. Supplied with soft pouch, cleaning cloth and

Helios 10 x 25 available in black leatherette and also green rubber armoured.

Helios 8 x 21 available in black leatherette and also green rubber armoured.

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HELIOS

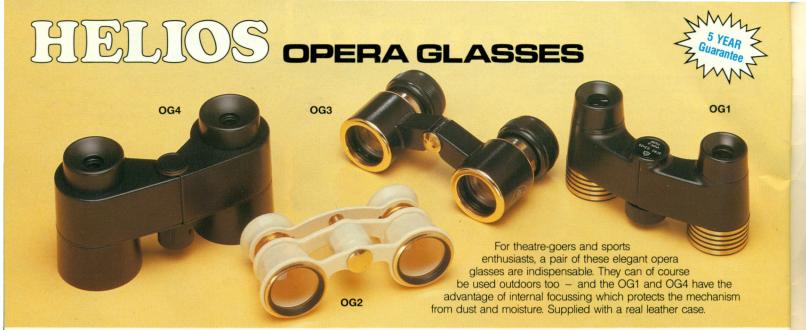
MONOCULARS

Engineered to the same high standards as Helios binoculars, these monoculars are an ideal alternative for outdoor and general use.

With the exception of the 5 x 25 mode they are supplied with 'haze-reducing' filters.







GENERAL USAGE CHART

This information is provided for guidance only so does not have to be rigidly adhered to. In the final analysis much will depend on how comfortable you feel using the equipment. Your local photographic dealer, sports shop or specialist optician is also available to give help and demonstration.

	BINOCULARS							RPB	INOS	TELESCOPES							MONOCULARS							OPERA GLASSES			
PURPOSE	20x60	12x40	10x50	8x40	8x30	7x50	7x35	10x25	8x21	Zenitsa	ZRT460	20x30	20x50	10x30	8-20x32	12x40	20x60	10x50	8x30	7x50	5x25	OG4	OG3	OG2	OG1		
Generaluse					•	•	•	•	•	•		•	•	•	•				•	•	•	•			•		
Touring				•	•		•	•	•			•	•	•					•	•		•		-			
Sports			•	•	•		•				•								•			•					
Theatre									•												•	•	•	•	•		
Nature	1		•		•		•	•		•					• .				•								
Target	•	•		in the						•	•	•	•		•	•	•	•									
Night use			•			•												•		•							
Distance	•	•		5711						•	•	•	•			•	•										



TWO YEAR GUARANTEE

Every photographic and optical product illustrated in this catalogue is fully guaranteed, parts and labour, for a full 24 months from its original date of purchase, against any defects arising from faulty workmanship or materials.

In these circumstances the equipment in question should be returned to the dealer from which it was bought, accompanied by a receipt proving the date of purchase.

This guarantee does not affect or prejudice the purchaser's statutory rights.

Every effort has been made to ensure accuracy of details and illustrations contained herein. We reserve the right, however, to vary, modify or improve any specification and/or design at any time without prior notice.

Some other products

Vega Snowcap Refrigerators and Freezers

A choice of models to suit every household need – among the features are: brilliant white easy-clean cabinets, luxury interior fitments, magnetic seal, levelling feet, thermostat control – all economical in both price and operation.



from T.O.E.



Vega Radio and TV
A range of home entertainment products
that brings you up to date with the latest in
electronic equipment. VHF, LM, MW and SW
Radios and Mini-portable b/w Televisions –
a great choice from a great range.

Zenith Biolam Microscopes

T.O.E. microscopes share family characteristics with Zenith cameras: optical excellence, fine precision engineering, robust construction and moderate prices. There are models especially suitable for schools and colleges, as well as specialised instruments for industrial and research use.

