



HARTMANN

Binoculars

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HARTMANN *Binoculars*

posses all the qualities by which proprietary binoculars are especially distinguished.

Mechanical and optical precision

High magnification combined with wide field of view

Bright, well contrasted image and high twilight value



These are only a few of the advantages and characteristics of our quality binoculars.

An anti reflection coating is applied to all our models which, by increasing the effective, i. e. light transmission by about 30 %, not only improves their efficiency under twilight conditions but also affords sharper contrast in broad daylight.



FOUNDED 1921

The brief description beside each illustration and the technical data on the last page of this pamphlet are designed to assist you make the correct choice from the wide range of *Hartmann* binoculars and monoculars.

How can I find the right binoculars for my purpose?

Considering that requirements are so different, this question is not by any means easy to answer. All the good features of different binoculars cannot, of course, be incorporated into any pair of binoculars. Above all, the customer must make up his mind for what purpose he really wants his binoculars.

In the present catalogue the Porlerim 6 x 30, 8 x 30 wide field, 8 x 30 wide angle, 7 x 35, 8 x 40 and 10 x 40 wide angle can be recommended as the most popular all purpose binoculars all over the world.

Owing to their high twilight value and bright, well contrasted image, the Porlerim 7 x 50, 8 x 50, 10 x 50 wide angle, 8 x 60, 10 x 60 and 16 x 60 wide angle are particularly suitable for long distance observation in poor visibility.

Only binoculars with up to a tenfold magnification can be used for free hand watching. It is for this reason that our new 16 x 60 wide angle and our prismatic monoculars 25 x 80 W. A. and 30 x 80 W. A. should, as far as possible, only be used fixed on a tripod.

We only use first rate optical raw glass and corrosion-resisting aluminium. Our models are perfectly sealed thus protecting all optical parts against dust and dampness. The interior of our instruments is perfectly screened so that no disturbing reflections ever occur and the exit pupil is free of secondary pupils.

The previous theory in designing binoculars according to the geometrical luminosity, exit pupil squared (E. P.²) is one sided and is superseded by the formula: root of the magnification multiplied with the diameter of the objective in millimeter ($\sqrt{M \times D}$). In this way the twilight value is obtained and is considerably more suitable for the evaluation of the optical performance of binoculars.



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A section view of the most popular

Hartmann Porlerim 8 x 30 wide angle

An example of German Precision

MB**6 x 30****The general purpose binocular**

Its brilliance and wide field of view makes this model suitable for viewing fast action with little or no movement of the glass.

Optical Data for 6 x 30

Magnification	6 x
Diameter of objective	30 mm
Diameter of exit pupil	5 mm
Geometric luminosity	25
Twilight value	13,4
Field, feet at 1000 yards	450

8 x 30 W.F.**The wide field binocular**

With three lenses in each ocular and excellent resolving power this binocular is ideal for holidays and nature study.

8 x 30 W.A.**The most popular wide angle model**

This excellent, handy all purpose binocular with five colour-corrected lenses in each ocular will meet every requirement. For holidays, nature study or watching sport, the wide field is most desirable.

Optical Data for 8 x 30: wide field, wide angle

Magnification	8 x	8 x
Diameter of objective	30 mm	30 mm
Diameter of exit pupil	3,75 mm	3,75 mm
Geometric luminosity	14,1	14,1
Twilight value	15,5	15,5
Field, feet at 1000 yards	406	450

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8x30 Prismatic monocular

Specially favoured owing to their low weight and for the accurate recognition of details, these prismatic monoculars are very often used by mountain-climbers, alpine hunters and all those tourists interested in keeping the weight of their equipment as low as possible. Surveyors employ them frequently for alignment purposes.

Optically, monoculars are identical with binoculars of the same model. Almost all binocular models can be delivered as monoculars, upon request.

7x50 Prismatic monocular



Optical Data for Monoculars

	8 x 30 W. A.	7 x 50
Magnification	8 x	7 x
Diameter of objective	30 mm	50 mm
Diameter of exit pupil	3,75 mm	7,14 mm
Geometric luminosity	14,1	51
Twilight value	15,5	18,7
Field, feet at 1000 yards	450	382

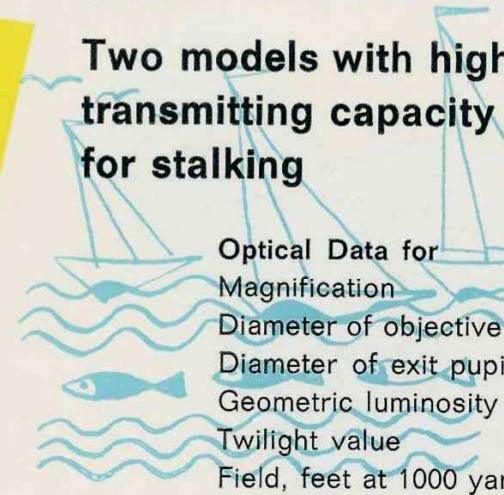
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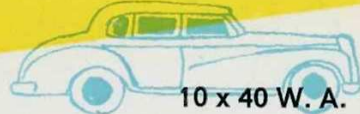
7 x 35

8 x 40

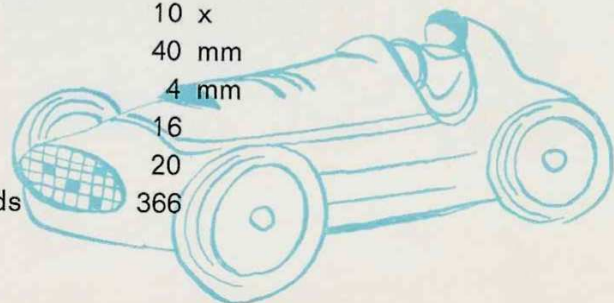
Two models with high light transmitting capacity very popular for stalking



Optical Data for	7 x 35	8 x 40
Magnification	7 x	8 x
Diameter of objective	35 mm	40 mm
Diameter of exit pupil	5 mm	5 mm
Geometric luminosity	25	25
Twilight value	15,6	17,8
Field, feet at 1000 yards	382	366



Optical Data for	10 x 40 W. A.
Magnification	10 x
Diameter of objective	40 mm
Diameter of exit pupil	4 mm
Geometric luminosity	16
Twilight value	20
Field, feet at 1000 yards	366



10 x 40 W. A.

Another wide angle binocular with high magnification

The general purpose binocular for naturalists, hunters and sportsmen as well as for bird watching. Colour corrected lenses, a good field and unsurpassed brilliance of image are only a few of the many features of this outstanding model.

MB**8 x 60****10 x 60**

Two new models with the highest performance in daylight, twilight and at night

These new, specially designed binoculars with their relatively wide field and excellent resolving power, coupled with exceptionally high light transmission, are the ideal glasses for watching deer and birds as well as for exploration, navigation, yachting and night use.

16 x 60 W. A.

The binocular with the highest magnification in the Hartmann range

This new designed wide angle model is very useful for long distance viewing such as coast watching, border observation and aircraft spotting. Many students of natural science prefer its extremely high magnification and good resolving power for more detailed observation.

Optical Data for

	8 x 60	10 x 60	16 x 60 W. A.
Magnification	8 x	10 x	16 x
Diameter of objective mm	60	60	60
Diameter of exit pupil mm	7,5	6	3,75
Geometric luminosity	56,25	36	14,1
Twilight value	22	24,5	31
Field, feet at 1000 yards	327	314	245

MB**8 x 60****10 x 60**

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Optical Data for

	8 x 60	10 x 60	16 x 60 W. A.
Magnification	8 x	10 x	16 x
Diameter of objective mm	60	60	60
Diameter of exit pupil mm	7,5	6	3,75
Geometric luminosity	56,25	36	14,1
Twilight value	22	24,5	31
Field, feet at 1000 yards	327	314	245

25x80 W.A. Prismatic monocular

30x80 W.A. Prismatic monocular

Specially designed for target spotting on shooting ranges and general long distance observation. Very useful for alpine hunters who prefer a wide field, nature students and even astronomic observations.

They are also recommended for animal and plant life study, and as standard equipment for week-end cottages in the mountains, by the lake or sea.

These instruments are supplied with an 3/8" interior thread, by which they may be fastened to any camera tripod.

We have no tripods in our production programme, but we can supply suitable metal tripods upon request.

Optical Data for Monoculars 25 x 80 W. A.

Magnification	25 x
Diameter of objective	80 mm
Diameter of exit pupil	3,2 mm
Geometric luminosity	10,24
Twilight value	44,7
Field, feet at 1000 yards	105

Optical Data for Monoculars 30 x 80 W. A.

Magnification	30 x
Diameter of objective	80 mm
Diameter of exit pupil	2,7 mm
Geometric luminosity	7,29
Twilight value	49,0
Field, feet at 1000 yards	73



Leather cases and accessories for *Hartmann* Binoculars



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1 Our models with the big new body, 7x50, 8x50, 10x50 W. A., 8x60, 10x60 and 16x60 W. A., are supplied only in sturdy brown leather cases for greatest protection.

2 The models 6x30, 8x30 W. F., 8x30 W. A., 7x35, 8x40 and 10x40 W. A. are usually supplied in flat sports cases very convenient for tourists. On special request havana-coloured sturdy de luxe leather cases can be supplied at extra charge.

3 Hartmann monoculars 6x30, 8x30 W. F., 8x30 W. A., 7x35, 8x40 and 10x40 W. A. are supplied only in flat brown sports cases. The monoculars with the big new body, 7x50, 8x50, 10x50 W. A., 8x60, 10x60 and 16x60 W. A., are supplied only in sturdy round leather cases.

All the binoculars and monoculars, are equipped with a black neck strap. With each leather case a two part adjustable brown strap is supplied for carrying it by hand or over the shoulder. For the monoculars 25x80 W. A. and 30x80 W. A. only black leather caps connected to a leather sling are supplied for the protection of the ocular and objective lenses. On special request a sturdy round leather case can be supplied at extra charge.

4 Ranguards for eyepieces are provided in leather or rubber on request. Flat eye-caps for wearers of glasses as well as scale plates (rectiles) can be supplied with our models at an extra charge if ordered initially.

Which model to choose? - Summarized technical data

Type	Magnification M	Diam. of objective D	Diam. of exit pupil mm	Luminosity $\left(\frac{D}{M}\right)^2$	Twilight value $\sqrt{M \cdot D \text{ obj.}}$	Field of view		weight in grams	particularly recommended for:		
						angular °	at a dist. of 1000 yds in feet		Sport Racing Travel- ling	Night use Hunting Navigation	Distant Viewing Yachting Nature Study
Porlerim or Porlerom	6x	30 mm	5	25	13,4	8,6	450	530			
„	8x W.F.	30 mm	3,75	14,1	15,5	7,75	406	530			
„	8x W.A.	30 mm	3,75	14,1	15,5	8,6	450	550			
„	7x	35 mm	5	25	15,6	7,3	382	610			
„	8x	40 mm	5	25	17,8	7,0	366	650			
„	10x W.A.	40 mm	4	16	20	7,0	366	670			
„	7x	50 mm	7,14	51	18,7	7,3	382	960			
„	8x	50 mm	6,25	39,1	20	6,25	327	960			
„	10x W.A.	50 mm	5	25	22,4	6,9	361	990			
„	8x	60 mm	7,5	56,25	22	6,25	327	1200			
„	10x	60 mm	6	36	24,5	6,0	314	1200			
„	16x W.A.	60 mm	3,75	14,1	31	4,25	245	1240			
* Prisma- tic- Mono- culars	25x W.A.	80 mm	3,2	10,24	44,7	2,0	105	1050			
* Prisma- tic- Mono- culars	30x W.A.	80 mm	2,7	7,29	49	1,4	73	1000			



These types are most suitable for spectacle wearers.

* These types can be only supplied as monoculars.

We fully guarantee the solid, lasting construction and accurate alignment of our prism binoculars and monoculars.

Design subject to alteration without notice.



For more information see next page, please.



HARTMANN BINOCULARS ARE AVAILABLE:

On request all models can be supplied as Porlerom with separate focusing eyepieces increasing the weather-tightness. Well recommended as the ARMY and NAVY models, they are really suitable for water sports, on board ships and continuous long distance observation. – The designation Porlerim means, both eyepieces are adjusted simultaneously by turning the central focusing wheel allowing rapid focusing from close to distant objects. First the user has to adjust the binoculars to his particular right and left eye variation. To do so, he has to focus on an object with his left eye, using the central focusing wheel, and then he has to adjust the right eyepiece to the strength of that eye. After that, he needs to use only the central focusing wheel for changes of distance. Although resistance to dust and moisture penetration is not as good as with the Porlerom models, this mechanism is preferable for most users. The designation monocular means one half of a binocular for one eye use.



KARL HARTMANN O.H.G. OPTICAL WORKS

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