



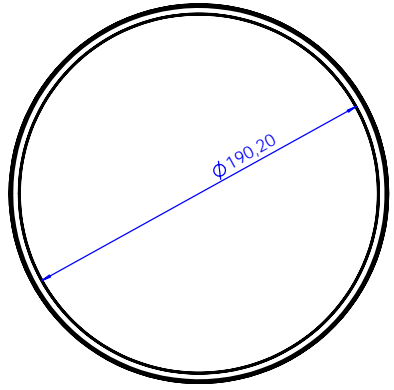
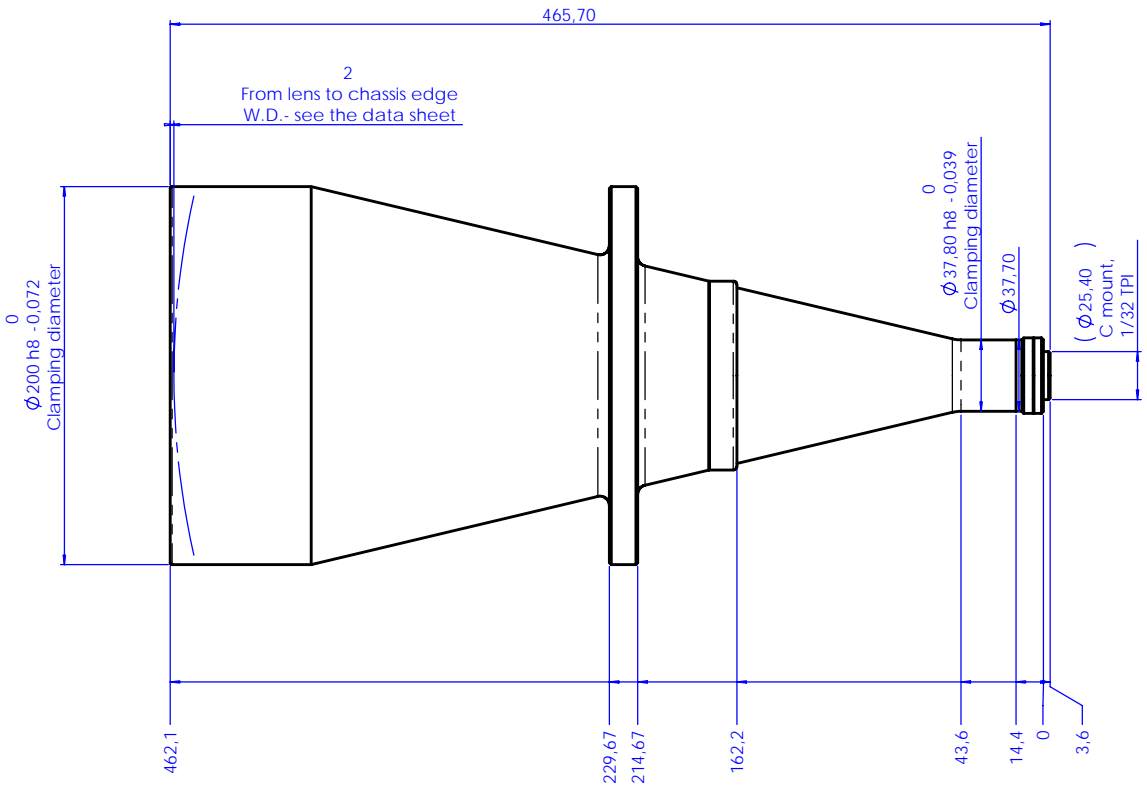
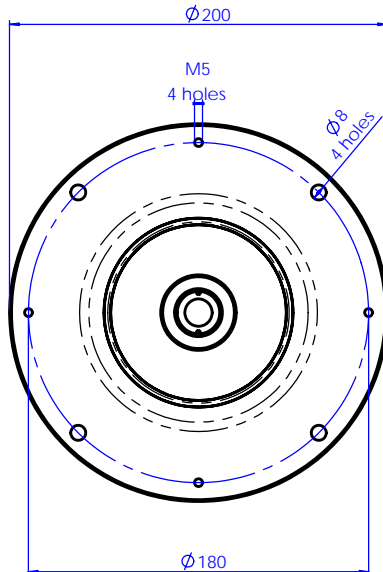
BI-TELECENTRIC LENS FOR 1/2" AND 1/1.8" TO 1/4" MATRIX DETECTORS

| | | | |
|--|-----------------------|-------|-------------|
| Model: | TC 12 144 | | |
| Magnification (X): | 0.04 | | |
| Object Field (mm): | 1/4" (3,6 x 2,7): | 81.0 | x 60.8 |
| | 1/3" (4,8 x 3,6): | 108.0 | x 81.0 |
| | 1/2" (6,4 x 4,8): | 144.0 | x 108.0 |
| | 1/1.8" (7,13 x 5,37): | 160.4 | x 120.8 (4) |
| | 2/3" (8,8 x 6,6): | diam. | = 148.5 |
| Working Distance (mm): | 398.0 +/- 12 | | |
| Working F-number: | 8 | | |
| MTF @70 lp/mm (%): | >35 | | |
| Field Depth (mm): | 260.0 | @ | F/ 8 |
| Image side N.A.: | 0.062 | | |
| Object side N.A.: | 0.003 | | |
| Telecentricity (degree): | <0,08 | | |
| Distortion (%): | <0,08 | | |
| Mount: | C | | |
| Length (mm): | 462 | | |
| Maximum external diameter (mm): | 200 | | |
| Weigh (g): | 6500 | | |

NOTES:

- 1) The inner aperture diaphragm can be supplied on request with smaller apertures in order to achieve a larger Field Depth
- 2) Custom flanges and mechanical interfaces can be provided on request
- 3) Can be coupled to a collimated light illuminator like LT CL 144
- 4) Small vignetting at the image corners possible with a 1/1.8" detector

| Rev No. | Description | Date | Name |
|---------|-------------|----------|-----------|
| A | First light | 14/06/06 | A.Vismara |



| | | | | | |
|--|------|-------------------------------|-------------------------|----------------------|-------|
| Material | N.A. | Mass | 6.5 kg | Scale | 1:2 |
| Surface treatment | N.A. | Project/Prod./Item/Instrument | Telecentric lens 12 144 | | |
| Geometrical tolerances (ISO 2768-2) | | Class | K | Undimensioned Bevels | 1x45° |
| Linear tolerance (ISO 2768-2) | | Class | m | Undimensioned Radii | R 0.5 |
| 0.5 | >3- | >6- | >30- | >120- | >400- |
| -3 | 6 | 30 | 120 | 400 | 1000 |
| ±0.1 | ±0.1 | ±0.2 | ±0.3 | ±0.5 | ±0.8 |
| | | Class | mm | ±1.2 | |
| www.opto-engineering.com | | Date | Name | | |
| Designed | | 14/06/06 | A.Vismara | | |
| Draw | | 14/06/06 | A.Vismara | | |
| Checked | | x | C.Sedazzari | | |
| Drawing No. | | 02371-0-A | | | Sheet |
| | | | | | 1/1 |
| Reproduction forbidden without specific authorization | | | | | |
| OPTO ENGINEERING S.r.l. - 46100 Mantova Italy - Via Cremona, 28 - Tel/fax +39 0376 229585 - e-mail info@opto-engineering.com - http://www.opto-engineering.com | | | | | |