

# KELLER

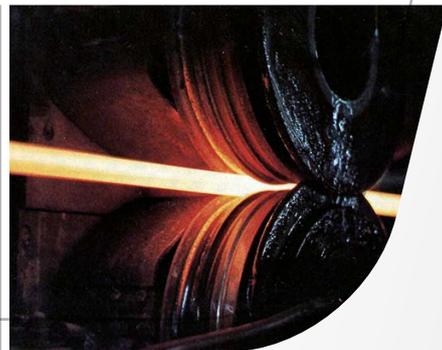
infrared  
temperature  
solutions

## ITS



### No 1

in terms of  
ACCURACY  
RELIABILITY  
INNOVATION



## Accessories Supplementary lenses

for pyrometers of the CellaTemp® PA,  
CellaTemp® PX and CellaPort PT series

# Accessories Supplementary lenses

## Special features

- Screw-on type, easily attachable to the lens
- No influence on the calibration
- Distance-to-target ratio remains unchanged
- Very good optical imaging qualities due to infrared-optimised precision lenses
- High optical resolution for object sizes from 0.1 mm upwards
- Suitable for devices with a round or rectangular measuring field of view



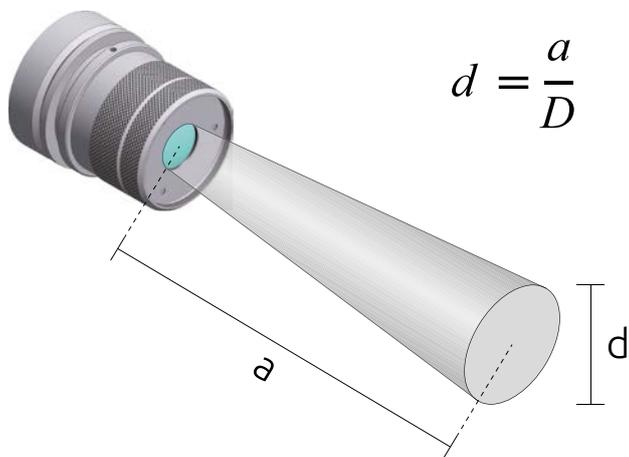
For the measurement of small objects, the pyrometers of the CellaTemp PA, CellaTemp PX and CellaPort PT series can be equipped with a variety of supplementary lenses for different object sizes and measuring distances. These lenses are simply mounted on the pyrom-

eter lens. The combination of various pyrometer types with supplementary lenses offer many additional imaging options for object sizes from 0.1 mm upwards.

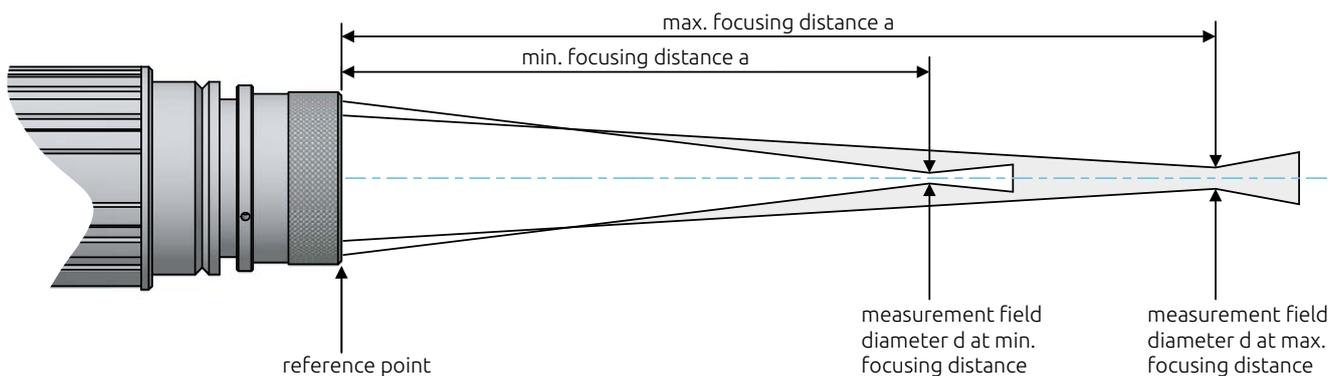
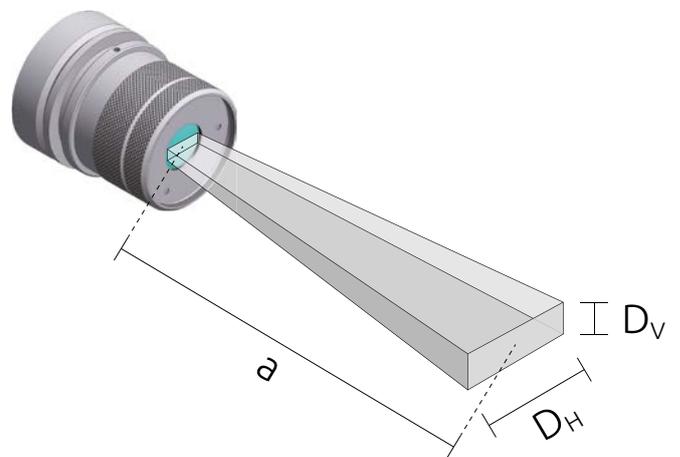
## Measuring area

For pyrometers with focusable optics, the optical ratio  $D$  is defined as ratio of the measurement field over the measuring distance. The diameter of the measurement area at the focus distance results from the formula:

$$d = \frac{a}{D}$$



For models with rectangular field of view, the definition is extended to the horizontal  $D_H$  and vertical  $D_V$  optical ratio.



Supplementary lenses for CellaTemp PA, CellaTemp PX and CellaPort PT with round measuring area

| Pyrometer   |  | Lens     | Supplementary lens      |                           |                         |                           |                         |                           |                         |                           |
|---|--|----------|-------------------------|---------------------------|-------------------------|---------------------------|-------------------------|---------------------------|-------------------------|---------------------------|
| Type  |  |          | PZ 20/O-50              |                           | PZ 20/O-63              |                           | PZ 20/O-75              |                           | PZ 20/O-120             |                           |
|   |  |          | measuring distance [mm] | measurement field Ø in mm | measuring distance [mm] | measurement field Ø in mm | measuring distance [mm] | measurement field Ø in mm | measuring distance [mm] | measurement field Ø in mm |
| PA/PX 40 AF 4/7, 20 AF 1/5, 30 AF 1, 35 AF 1<br>PT 140 AF 4/7, 120 AF 1, 130 AF 1, 135 AF 1 |  | PZ 20.01 | 36 - 41                 | 0.35 - 0.45               | 45 - 54                 | 0.40 - 0.60               | 52 - 63                 | 0.45 - 0.70               | 84 - 112                | 0.70 - 1.10               |
| PA/PX 40 AF 5/8, 20 AF 2/6, 30 AF 2, 35 AF 2<br>PT 140 AF 5/8, 120 AF 2, 130 AF 2, 135 AF 2 |  | PZ 20.03 | 31 - 36                 | 0.30 - 0.40               | 38 - 45                 | 0.35 - 0.50               | 43 - 52                 | 0.40 - 0.60               | 66 - 84                 | 0.55 - 0.90               |
| PA/PX 40 AF 6/9, 20 AF 3/7, 30 AF 3, 35 AF 3<br>PT 140 AF 6/9, 120 AF 3, 130 AF 3, 135 AF 3 |  | PZ 20.06 | 41                      | 0.30                      |                         |                           |                         |                           | 101 - 112               | 0.55 - 0.67               |
| PA/PX 40 AF 14/15   |  | PZ 20.08 | 34 - 41                 | 0.50 - 0.67               |                         |                           |                         |                           | 77 - 112                | 1.00 - 1.60               |
| PA/PX 28 AF 10, 29 AF 10<br>PT 128 AF 10, 129 AF 10   |  | PZ 20.08 | 34 - 41                 | 1.28 - 1.75               |                         |                           |                         |                           |                         |                           |
| PA/PX 29 AF 21/22<br>PT 129 AF 21/22  |  | PZ 20.01 |                         |                           | 45 - 54                 | 1.05 - 1.50               | 52 - 63                 | 1.20 - 1.75               |                         |                           |
| PA/PX 29 AF 23<br>PT 129 AF 23  |  | PZ 20.06 |                         |                           |                         |                           |                         |                           | 101 - 112               | 1.43 - 1.75               |
| PA/PX 40 AF 1, 50 AF 1<br>PT 140 AF 1   |  | PZ 20.01 | 36 - 41                 | 0.65 - 0.90               | 45 - 54                 | 0.80 - 1.10               | 52 - 63                 | 0.90 - 1.40               | 84 - 112                | 1.30 - 2.10               |
| PA/PX 40 AF 2, 50 AF 2<br>PT 140 AF 2   |  | PZ 20.03 | 31 - 36                 | 0.60 - 0.80               | 38 - 45                 | 0.70 - 1.00               | 43 - 52                 | 0.80 - 1.10               | 66 - 84                 | 1.10 - 1.70               |
| PA/PX 40 AF 3, 50 AF 3<br>PT 140 AF 3   |  | PZ 20.06 | 41                      | 0.55                      |                         |                           |                         |                           | 101 - 112               | 1.10 - 1.40               |
| PA/PX 40 AF 20<br>PT 140 AF 20  |  | PZ 20.08 | 36 - 41                 | 1.45 - 2.00               |                         |                           |                         |                           | 77 - 112                | 2.10 - 3.45               |
| PA/PX 60 AF 1   |  | PZ 20.08 | 36 - 41                 | 1.05 - 1.45               |                         |                           |                         |                           | 77 - 112                | 3.00 - 4.80               |

Supplementary lenses for CellaTemp PA/PX 43 and CellaPort PT 143 with rectangular measuring area

| Pyrometer                            |  | Lens     | Supplementary lens      |                           |                         |                           |                         |                           |                         |                           |
|--------------------------------------|--|----------|-------------------------|---------------------------|-------------------------|---------------------------|-------------------------|---------------------------|-------------------------|---------------------------|
| Type                                 |  |          | PZ 20/O-50              |                           | PZ 20/O-63              |                           | PZ 20/O-75              |                           | PZ 20/O-120             |                           |
|                                      |  |          | measuring distance [mm] | measurement field Ø in mm | measuring distance [mm] | measurement field Ø in mm | measuring distance [mm] | measurement field Ø in mm | measuring distance [mm] | measurement field Ø in mm |
| PA/PX 43 AF 1<br>PT 143 AF 1         |  | PZ 20.01 | 36 - 41                 | 1.20 - 1.60               | 45 - 54                 | 1.40 - 2.00               | 52 - 63                 | 1.60 - 2.40               | 84 - 112                | 2.40 - 3.80               |
|                                      |  |          |                         | 0.20 - 0.30               |                         |                           |                         | 0.30 - 0.40               |                         | 0.50                      |
| PA/PX 43 AF 2<br>PT 143 AF 2         |  | PZ 20.03 | 31 - 36                 | 1.10 - 1.40               | 38 - 45                 | 1.30 - 1.70               | 43 - 52                 | 1.40 - 2.00               | 66 - 84                 | 2.00 - 2.90               |
|                                      |  |          |                         | 0.20 - 0.30               |                         |                           |                         | 0.30                      |                         | 0.30 - 0.40               |
| PA/PX 43 AF 3<br>PT 143 AF 3         |  | PZ 20.06 | 41                      | 1.00                      |                         |                           |                         |                           | 101 - 112               | 1.90 - 2.40               |
|                                      |  |          |                         | 0.20                      |                         |                           |                         | 0.40 - 0.50               |                         |                           |
| PA/PX 43 AF 13<br>PT 143 AF 13       |  | PZ 20.08 | 34 - 41                 | 1.70 - 2.40               |                         |                           |                         |                           | 77 - 112                | 3.50 - 5.70               |
|                                      |  |          |                         | 0.30 - 0.50               |                         |                           |                         | 0.70 - 1.10               |                         |                           |
| PA/PX 43 AF 4/7<br>PT 143 AF 4/7     |  | PZ 20.01 | 35 - 41                 | 1.00 - 1.40               | 45 - 54                 | 1.30 - 1.80               | 52 - 63                 | 1.40 - 2.10               | 84 - 112                | 2.10 - 3.40               |
|                                      |  |          |                         | 0.20                      |                         |                           |                         | 0.20 - 0.30               |                         | 0.30 - 0.40               |
| PA/PX 43 AF 5/8<br>PT 143 AF 5/8     |  | PZ 20.03 | 31 - 35                 | 0.90 - 1.20               | 38 - 45                 | 1.10 - 1.50               | 43 - 52                 | 1.30 - 1.80               | 66 - 84                 | 1.80 - 2.60               |
|                                      |  |          |                         | 0.20                      |                         |                           |                         | 0.20 - 0.30               |                         | 0.20 - 0.30               |
| PA/PX 43 AF 6/9<br>PT 143 AF 6/9     |  | PZ 20.06 | 41                      | 0.90                      |                         |                           |                         |                           | 101 - 112               | 1.70 - 2.10               |
|                                      |  |          |                         | 0.10                      |                         |                           |                         | 0.30                      |                         |                           |
| PA/PX 43 AF 14/15<br>PT 143 AF 14/15 |  | PZ 20.08 | 34 - 41                 | 1.50 - 2.10               |                         |                           |                         |                           | 77 - 112                | 3.10 - 5.00               |
|                                      |  |          |                         | 0.30                      |                         |                           |                         | 0.50 - 0.80               |                         |                           |

# KELLER

Creating Solutions

infrared  
temperature  
solutions

## ITS



- Headquarters
- Sales and Service Center
- Sales abroad



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