## LENS

| | |
|---|---|
| **Code No.** | **21577** |
| **Barcode** | **0027075114173** |

> Optimised for use with digital cameras

> Equivalent to 18 – 36mm in 35mm film format

> Special ED lenses for the correction of unwanted color fringings

> "Quick Shift Focus System" for quickly switching between AF and MF

> 2 aspherical lens elements

**Standard Accessories**

| | |
|---|---|
| Front Cap O-LC77 | Code No. 31516 |
| Rear Cap | Code No. 31006 |
| Lens hood  PH-RBI77 | Code No. 38745 |

**Optional Accessories**

| | |
|---|---|
| Soft Bag S100-120 | Code No. 37755 |

**Application**

The smc-DA series of lenses are particularly developed and designed for use with PENTAX digital cameras. They are designed to fulfil the high digital image technology standards of PENTAX digital SLR cameras and are intended exclusively for use with these cameras.

Extreme focal lengths are the domain of SLR photography. With the 12 – 24mm zoom lens PENTAX has succeeded in mastering a difficult challenge and can now offer wide angle photography on the highest digital level. With the 35mm equivalent of an 18 – 36mm lens, breath taking photographs are possible even if the spatial surroundings are limited.

The manufacturer reserves the right to changes in technology, design, equipment and scope of supply without advance notice.

As of September 2005

# smc-DA
## 12–24mm/4.0 ED AL (IF)

**F** Manual Focus    **AF** AF    **D** Digital cameras
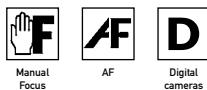
**Angle of View**
- 99° – 61°

**Construction**
- 13 Elements  / 11 Groups

**Minimum Aperture**
- 22

**Focusing Range**
- 30cm – ∞  (1ft.)

**Magnification**
- approx. 1:8.3 (0.12x)

**Filter Size**
- E77

**Weight**
- 430g (16.9oz.)

84mm

87,5mm

ASP    ED    ASP
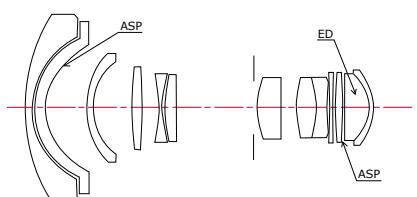
This lens is designed exclusively for use on PENTAX digital cameras.

We recommend that Slim filters be used exclusively.

**Viewing angle**
■ Angle-of-view for digital cameras

| 20mm | 24mm | 35mm | 50mm | 70mm | 100mm |
|---|---|---|---|---|---|

| 135mm | 150mm | 200mm | 300mm | 400mm | 500mm |
|---|---|---|---|---|---|
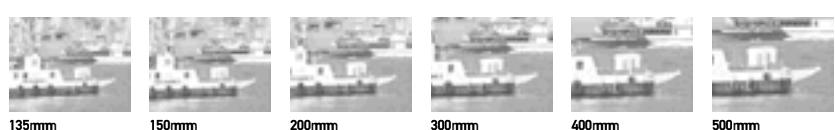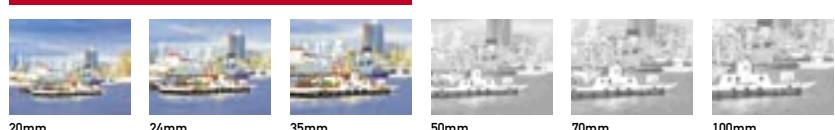
**PENTAX**

# smc-DA
## 12–24mm/4,0 ED AL (IF)

**Depth of field table**

f = 12mm

| F<br>meters | 4 | 5.6 | 8 | 11 | 16 | 22 |
|---|---|---|---|---|---|---|
| 0.30 | 0.28<br>0.33 | 0.27<br>0.34 | 0.26<br>0.36 | 0.25<br>0.40 | 0.24<br>0.49 | 0.22<br>0.70 |
| 0.35 | 0.32<br>0.39 | 0.31<br>0.42 | 0.29<br>0.46 | 0.28<br>0.53 | 0.26<br>0.74 | 0.24<br>1.66 |
| 0.40 | 0.35<br>0.47 | 0.34<br>0.5 | 0.32<br>0.57 | 0.30<br>0.71 | 0.27<br>1.24 | 0.25<br>∞ |
| 0.50 | 0.42<br>0.63 | 0.4<br>0.71 | 0.37<br>0.89 | 0.34<br>1.35 | 0.30<br>38.58 | 0.27<br>∞ |
| 0.70 | 0.54<br>1.06 | 0.49<br>1.36 | 0.44<br>2.47 | 0.40<br>∞ | 0.34<br>∞ | 0.3<br>∞ |
| 1.00 | 0.68<br>2.15 | 0.6<br>4.33 | 0.52<br>∞ | 0.45<br>∞ | 0.38<br>∞ | 0.32<br>∞ |
| 2.00 | 0.97<br>∞ | 0.81<br>∞ | 0.66<br>∞ | 0.55<br>∞ | 0.43<br>∞ | 0.35<br>∞ |
| ∞ | 1.69<br>∞ | 1.24<br>∞ | 0.90<br>∞ | 0.68<br>∞ | 0.50<br>∞ | 0.39<br>∞ |

f = 15mm

| F<br>meters | 4 | 5.6 | 8 | 11 | 16 | 22 |
|---|---|---|---|---|---|---|
| 0.30 | 0.28<br>0.32 | 0.28<br>0.33 | 0.27<br>0.34 | 0.26<br>0.36 | 0.25<br>0.41 | 0.23<br>0.48 |
| 0.35 | 0.33<br>0.38 | 0.32<br>0.40 | 0.30<br>0.42 | 0.29<br>0.46 | 0.27<br>0.55 | 0.26<br>0.73 |
| 0.40 | 0.36<br>0.45 | 0.35<br>0.47 | 0.34<br>0.51 | 0.32<br>0.57 | 0.30<br>0.73 | 0.27<br>1.19 |
| 0.50 | 0.44<br>0.59 | 0.42<br>0.63 | 0.40<br>0.72 | 0.37<br>0.88 | 0.33<br>1.46 | 0.30<br>12.71 |
| 0.70 | 0.57<br>0.92 | 0.54<br>1.05 | 0.49<br>1.38 | 0.45<br>2.31 | 0.39<br>∞ | 0.34<br>∞ |
| 1.00 | 0.74<br>1.60 | 0.68<br>2.14 | 0.60<br>4.53 | 0.53<br>∞ | 0.45<br>∞ | 0.38<br>∞ |
| 2.00 | 1.13<br>12.19 | 0.97<br>∞ | 0.81<br>∞ | 0.67<br>∞ | 0.53<br>∞ | 0.44<br>∞ |
| ∞ | 2.35<br>∞ | 1.71<br>∞ | 1.22<br>∞ | 0.97<br>∞ | 0.66<br>∞ | 0.51<br>∞ |

f = 18mm

| F<br>meters | 4 | 5.6 | 8 | 11 | 16 | 22 |
|---|---|---|---|---|---|---|
| 0.30 | 0.29<br>0.31 | 0.28<br>0.32 | 0.28<br>0.33 | 0.27<br>0.34 | 0.26<br>0.37 | 0.25<br>0.40 |
| 0.35 | 0.33<br>0.37 | 0.33<br>0.38 | 0.32<br>0.40 | 0.31<br>0.42 | 0.29<br>0.46 | 0.28<br>0.53 |
| 0.40 | 0.37<br>0.43 | 0.37<br>0.44 | 0.35<br>0.47 | 0.34<br>0.50 | 0.32<br>0.58 | 0.30<br>0.71 |
| 0.50 | 0.46<br>0.56 | 0.44<br>0.58 | 0.42<br>0.63 | 0.40<br>0.71 | 0.37<br>0.89 | 0.34<br>1.34 |
| 0.70 | 0.61<br>0.84 | 0.58<br>0.91 | 0.54<br>1.05 | 0.50<br>1.32 | 0.44<br>2.4 | 0.40<br>∞ |
| 1.00 | 0.80<br>1.35 | 0.75<br>1.57 | 0.68<br>2.12 | 0.61<br>3.89 | 0.53<br>∞ | 0.45<br>∞ |
| 2.00 | 1.30<br>4.69 | 1.14<br>10.67 | 0.97<br>∞ | 0.83<br>∞ | 0.67<br>∞ | 0.55<br>∞ |
| ∞ | 3.34<br>∞ | 2.41<br>∞ | 1.72<br>∞ | 1.28<br>∞ | 0.91<br>∞ | 0.69<br>∞ |

f = 20mm

| F<br>meters | 4 | 5.6 | 8 | 11 | 16 | 22 |
|---|---|---|---|---|---|---|
| 0.30 | 0.29<br>0.31 | 0.29<br>0.32 | 0.28<br>0.32 | 0.28<br>0.33 | 0.27<br>0.35 | 0.26<br>0.38 |
| 0.35 | 0.34<br>0.37 | 0.33<br>0.37 | 0.32<br>0.39 | 0.31<br>0.40 | 0.30<br>0.43 | 0.29<br>0.48 |
| 0.40 | 0.38<br>0.42 | 0.37<br>0.44 | 0.36<br>0.45 | 0.35<br>0.48 | 0.33<br>0.53 | 0.31<br>0.61 |
| 0.50 | 0.46<br>0.54 | 0.45<br>0.56 | 0.43<br>0.60 | 0.41<br>0.65 | 0.39<br>0.76 | 0.36<br>0.98 |
| 0.70 | 0.62<br>0.81 | 0.60<br>0.86 | 0.56<br>0.96 | 0.52<br>1.12 | 0.47<br>1.59 | 0.43<br>3.44 |
| 1.00 | 0.83<br>1.26 | 0.78<br>1.41 | 0.72<br>1.73 | 0.66<br>2.45 | 0.57<br>8.73 | 0.5<br>∞ |
| 2.00 | 1.39<br>3.71 | 1.24<br>5.74 | 1.07<br>35.6 | 0.92<br>∞ | 0.75<br>∞ | 0.63<br>∞ |
| ∞ | 4.11<br>∞ | 2.96<br>∞ | 2.10<br>∞ | 1.56<br>∞ | 1.10<br>∞ | 0.83<br>∞ |

f = 24mm

| F<br>meters | 4 | 5.6 | 8 | 11 | 16 | 22 |
|---|---|---|---|---|---|---|
| 0.30 | 0.29<br>0.31 | 0.29<br>0.31 | 0.29<br>0.32 | 0.28<br>0.32 | 0.27<br>0.33 | 0.27<br>0.35 |
| 0.35 | 0.34<br>0.36 | 0.33<br>0.37 | 0.33<br>0.38 | 0.32<br>0.39 | 0.31<br>0.41 | 0.30<br>0.43 |
| 0.40 | 0.38<br>0.42 | 0.38<br>0.42 | 0.37<br>0.44 | 0.36<br>0.45 | 0.35<br>0.48 | 0.33<br>0.53 |
| 0.50 | 0.47<br>0.53 | 0.46<br>0.55 | 0.45<br>0.57 | 0.43<br>0.60 | 0.41<br>0.67 | 0.38<br>0.77 |
| 0.70 | 0.64<br>0.77 | 0.62<br>0.81 | 0.59<br>0.87 | 0.56<br>0.96 | 0.52<br>1.17 | 0.47<br>1.62 |
| 1.00 | 0.87<br>1.18 | 0.83<br>1.27 | 0.78<br>1.45 | 0.72<br>1.75 | 0.64<br>2.76 | 0.57<br>9.99 |
| 2.00 | 1.51<br>3.02 | 1.38<br>3.82 | 1.22<br>6.42 | 1.07<br>49.02 | 0.89<br>∞ | 0.75<br>∞ |
| ∞ | 5.53<br>∞ | 3.97<br>∞ | 2.81<br>∞ | 2.07<br>∞ | 1.45<br>∞ | 1.08<br>∞ |

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