

Basler Accessories



Technical Specification BASLER LENS C125-2522-5M

Order Number

2000034835

Document Number: DG001469

Version: 03 Language: 000 (English)

Release Date: 28 April 2016

Contacting Basler Support Worldwide

Europe, Middle East, Africa

Basler AG
An der Strusbek 60–62
22926 Ahrensburg
Germany

Tel. +49 4102 463 515
Fax +49 4102 463 599

support.europe@baslerweb.com

The Americas

Basler, Inc.
855 Springdale Drive, Suite 203
Exton, PA 19341
USA

Tel. +1 610 280 0171
Fax +1 610 280 7608

support.usa@baslerweb.com

Asia-Pacific

Basler Asia Pte. Ltd.
35 Marsiling Industrial Estate Road 3
#05–06
Singapore 739257

Tel. +65 6367 1355
Fax +65 6367 1255

support.asia@baslerweb.com

www.baslerweb.com

All material in this publication is subject to change without notice and is copyright Basler AG.

Table of Contents

1 Key Features2

2 Terms and Conventions3

3 Mechanical Specifications and Environmental Requirements4

4 Optical Specifications.....5

5 Performance Charts.....6

6 Example Images.....7

Revision History8

1 Key Features

Key Features	
• Compact 5 megapixel lens for machine vision / factory automation • Part of the Basler C125 lens series: 4, 6, 8, 12, 16, and 25 mm focal length models available • Metal housing • C-Mount interface • Locking screws for iris and focus • Low ghosting and veiling glare • High contrast • Accurate focusing mechanism	
Optimum working distance	0.5 m
Aperture range	$f/2.2$ to $f/22$
Focal length	25 mm
Order number	2000034835

2 Terms and Conventions

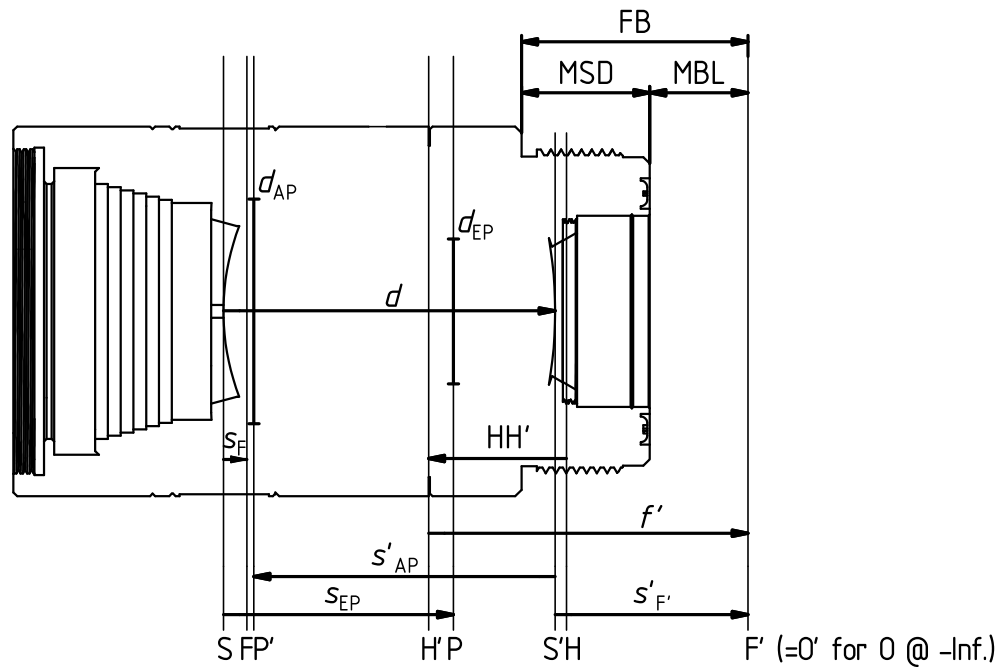
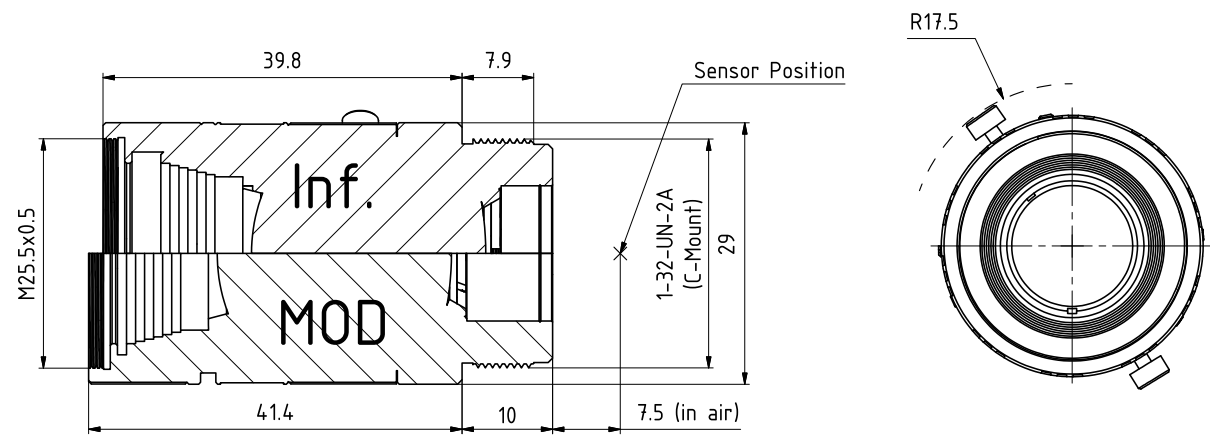


Figure 1: Terms for Lenses

Designations according to DIN 1335			
O	Object position	$f' (=H'F')$	Focal length
O'	Image position	$k (=f'/d_{EP})$	f-number (indicated as " f/k ")
H	Front principal plane	$i (=HH')$	Principal point separation
H'	Back principal plane	$s_F (=SF)$	Front focal length
F	Front focal plane	$s'_F (=S'F')$	Back focal length
F'	Back focal plane	$s_{EP} (=SP)$	Entrance pupil position
P	Entrance pupil plane	$s'_{AP} (=S'P')$	Exit pupil position
P'	Exit pupil plane	$d (=SS')$	Overall optical length
S	Vertex of first lens surface	d_{EP}	Entrance pupil diameter
S'	Vertex of last lens surface	d_{AP}	Exit pupil diameter
		$\beta'_P (=d_{AP}/d_{EP})$	Pupil magnification
Other Designations			
FB	Flange back	MOD	Minimum object distance
MSD	Maximum screw-in depth	CRA	Chief ray angle
MBL	Mechanical back length	Inf.	Infinity
WD	Working distance	MTF	Modulation transfer function

3 Mechanical Specifications and Environmental Requirements



Mechanical Specifications	
Storage conditions	-20 °C to +60 °C, 35 % to 90 % relative humidity, non-condensing
Environmental requirements	-10 °C to +50 °C, 35 % to 90 % relative humidity, non-condensing (For best results, please focus when a steady operating temperature has been reached.)
Flange back	17.526 mm +0/-0.2 mm
Weight	Approx. 60 g
Focus operation	Manually Operating angle: 960°

4 Optical Specifications

Optical Specifications		
Focal length f'		25 mm $\pm$ 5 %
Aperture range		$f/2.2$ to $f/22$
Image circle		7.3 mm (1/2.5" format)
Focus range		0.2 m to infinity
Optimum working distance		0.5 m
Optimum magnification		0.048
Relative illumination at full aperture		At least 55 % (see Figure 3)
Resolution (25 % MTF, center, full aperture)		Designed for 230 LP/mm (2.2 μ m pixel size, see Figure 6)
Resolution at 5.8 mm image diagonal (80 % of a Basler acA2500-14xx camera)		At least 50 % of resolution in image center
Optical distortion		Typical -0.5 % (barrel distortion, see Figure 4)
Angle of view, 1/2.5" format (using a Basler acA2500-14xx camera)	horizontal	12.1° (@ MOD) to 13.0°
	vertical	9.1° (@ MOD) to 9.8°
Angle of view, 1/3" format (using a Basler acA1300-30xx camera)	horizontal	10.3° (@ MOD) to 11.1°
	vertical	7.7° (@ MOD) to 8.3°
Wavelength range		Visible (400 to 700 nm, see Figure 5)
Pupil magnification β_P		1.55
Chief ray angle, CRA		5.2°
Front focal length, s_F		1.83 mm
Back focal length, s'_F		15.1 mm
Principal point separation, HH'		-10.78 mm
Entrance pupil position, s_{EP}		17.99 mm
Exit pupil position, s'_{AP}		-23.57 mm
Overall optical length, d		25.95 mm

5 Performance Charts

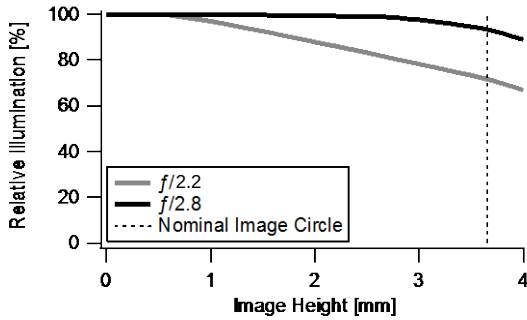


Figure 3: Relative Illumination vs. Image Height

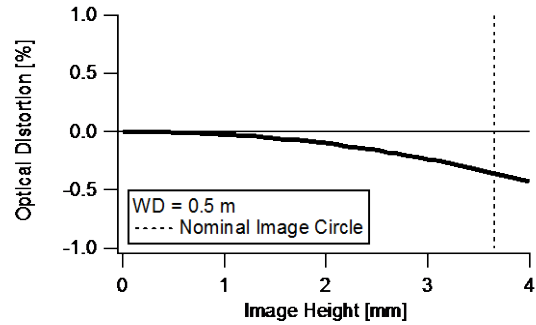


Figure 4: Distortion vs. Image Height

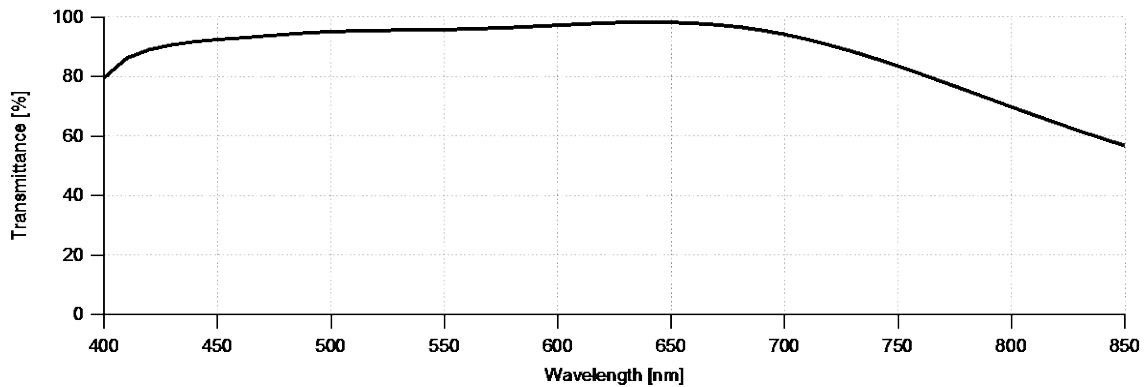


Figure 5: Transmittance

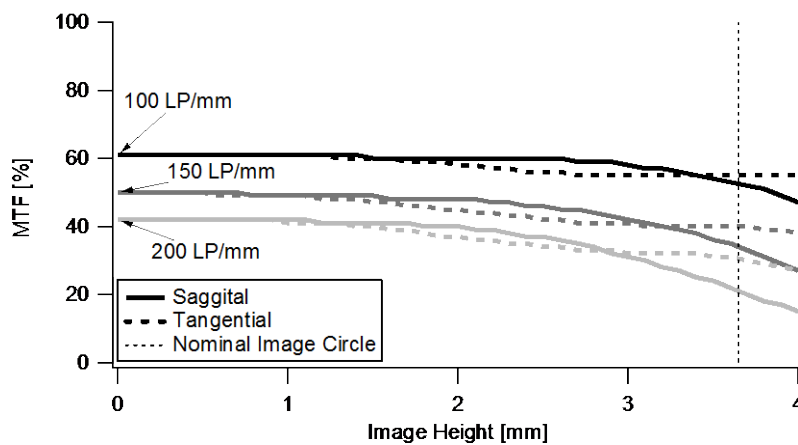


Figure 6: Resolution vs. Image Height

Conditions for MTF calculation: $f/2.2$, polychromatic, WD 0.5 m

The technical data shown in chapters 1 to 5 are Nominal Design Values. The real values of the delivered products may deviate from the Nominal Design Values.

6 Example Images

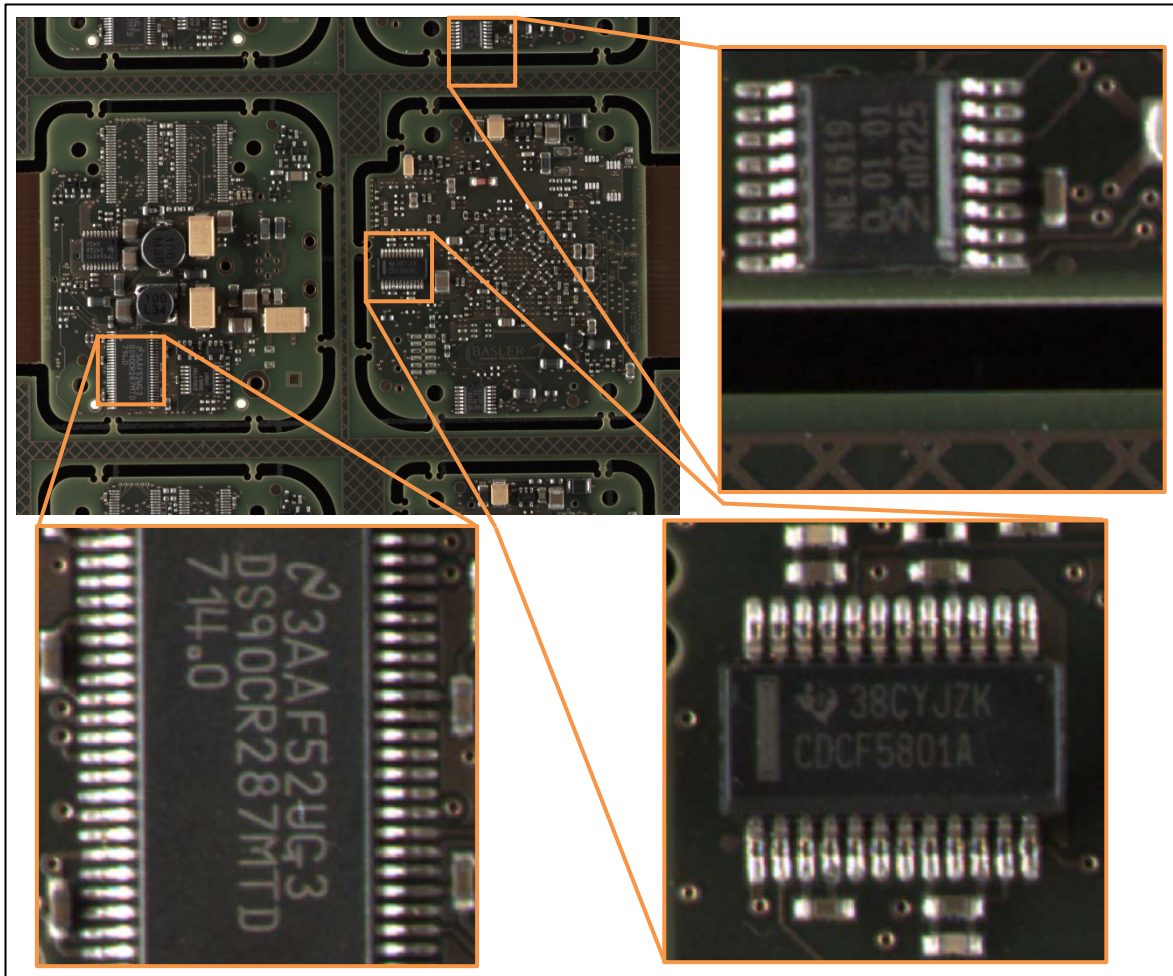


Figure 7: acA2500-14gm, $f/2.8$, 0.5 m Working Distance, Full 5 Megapixel Image and Selected Magnified Sections

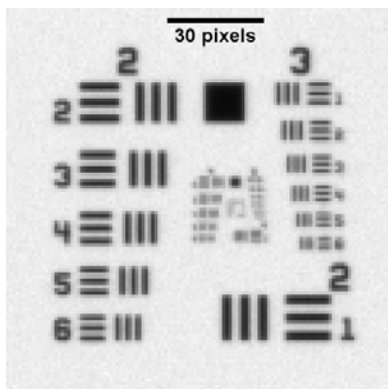


Figure 8: USAF1951 Target, Center

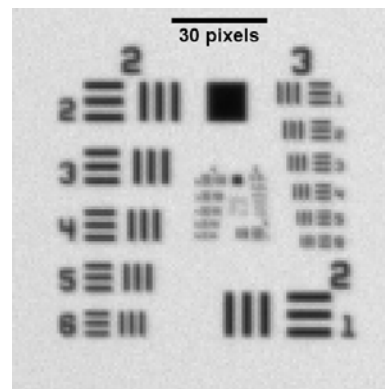


Figure 9: USAF1951 Target, Corner

- Image taken with a Basler acA2500-14gm camera
- 0.5 m working distance
- $f/2.8$, white backlight illumination
- Image **center** cropped and magnified

- Image taken with a Basler acA2500-14gm camera
- 0.5 m working distance
- $f/2.8$, white backlight illumination
- Image **corner** cropped and magnified

The images shown on this page are example images to illustrate the typical image quality of the referenced product only. The quality of the delivered product may vary.

Revision History

Document Number	Date	Changes
DG00146901000	4 Feb 2015	Initial release of this document.
DG00146902000	2 Apr 2015	Set Asia-Pacific as region name. Changed "Aperture range: $f/1.8$ to $f/22$ " to "Aperture range: $f/2.2$ to $f/22$ ".
DG00146903000	28 Apr 2016	Updated "Mechanical Specifications" table.



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

Телефон: 8 (812) 309 58 32 (многоканальный)

Факс: 8 (812) 320-02-42

Электронная почта: org@eplast1.ru

Адрес: 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.