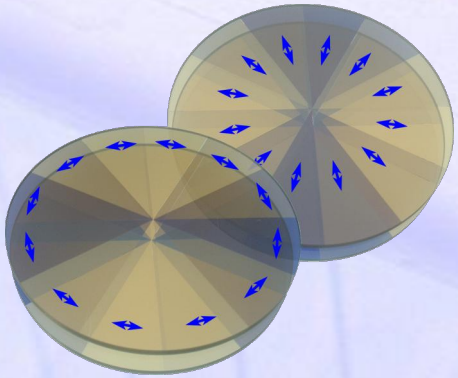
colorPol®

A new name ,

A new technology,

A new challenge

in the world of photonics



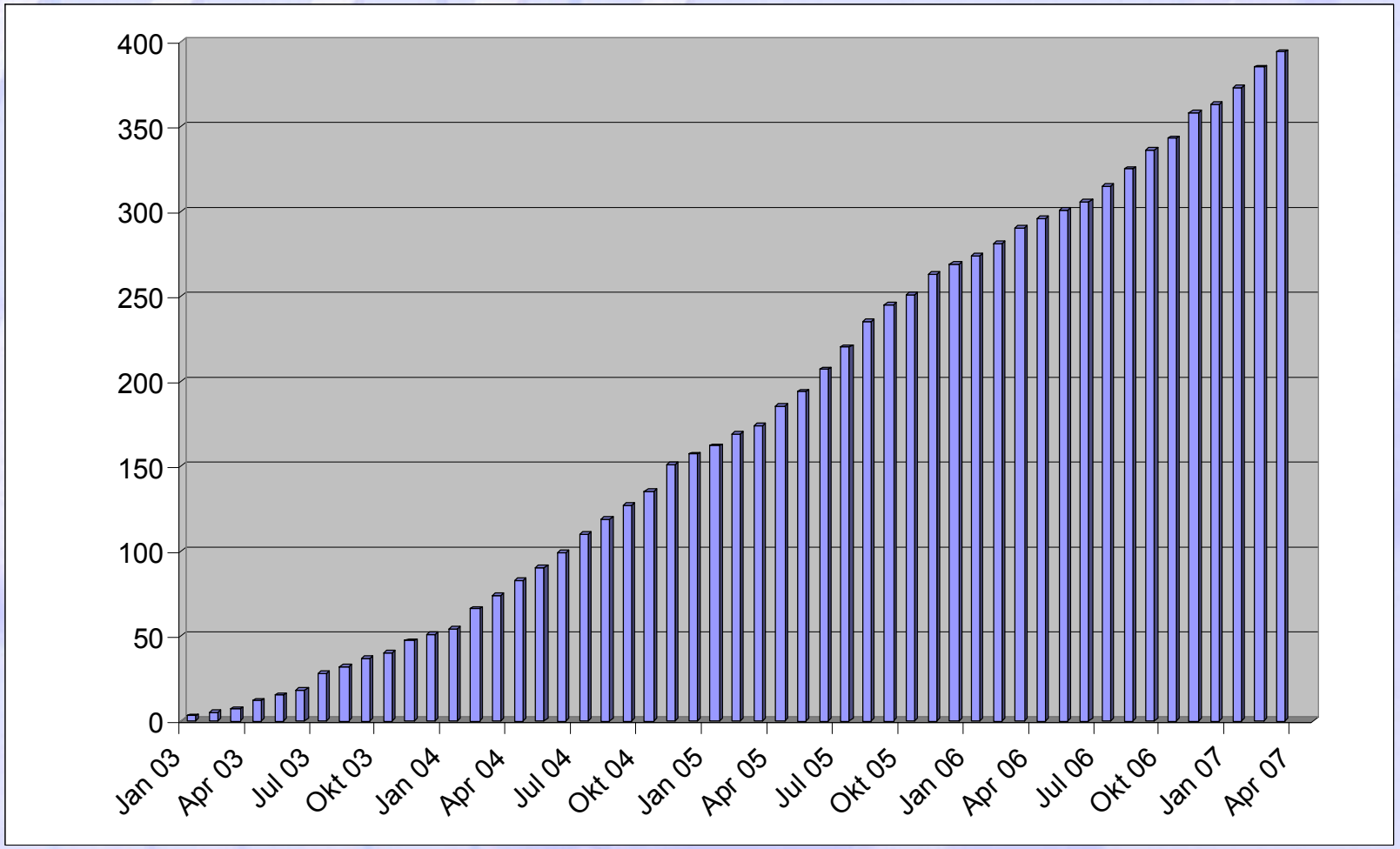
The Company

founded	: Sept., 1st 1998
registered office	: Stendal
sites	: Barleben (colorPol® - polarizers)
Executive chairman	: D. Prinzler
Staff (colorPol®)	: 19
Staff (Controlling)	: 3
equity capital	: 3,300,000 €

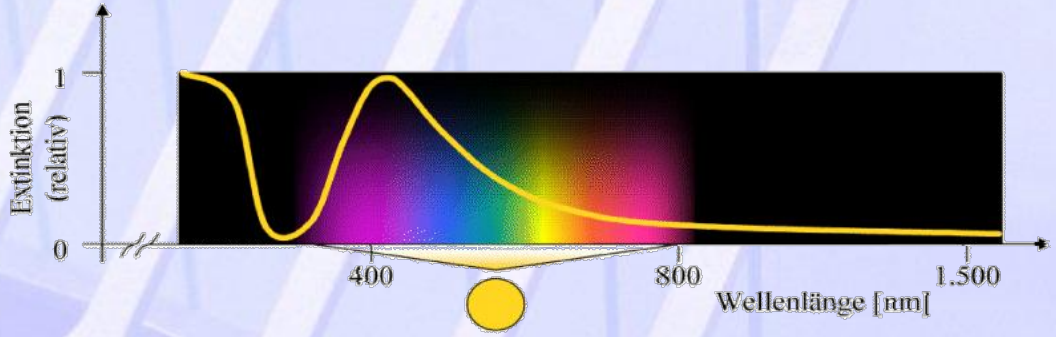
History colorPol® division

1999-2001	development of machines, design of production line
2000-2002	Erection of production facilities for glass polarizers in Barleben
2001-2002	development of colorPol® technology and products
12/2002	Opening of production and marketing for colorPol® polarizers
07/2003	Dealership agreement with Laser Components IG (USA and Canada)
08/2003	ISO 9001:2000 certification
2005	customers in 26 countries; audited by big companies (e.g. ASML, Renishaw, Siemens)
05/2004	Dealership agreement with LOT Oriel (France)
08/2006	ISO 9001:2000 certification renewed
01/2007	Dealership agreement with Fujitok Corporation (Japan)

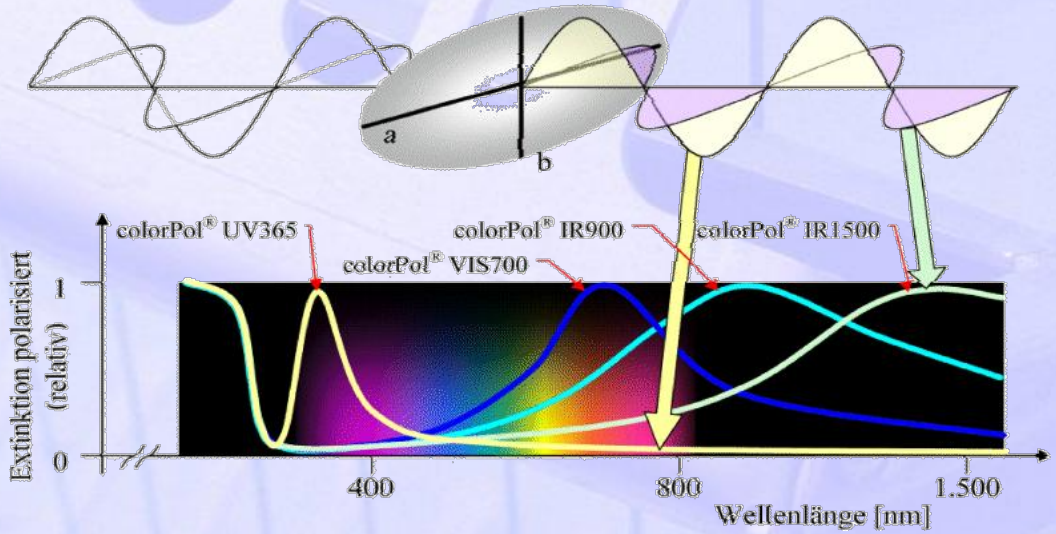
Business data - customers



Physics or colorPol® polarizer



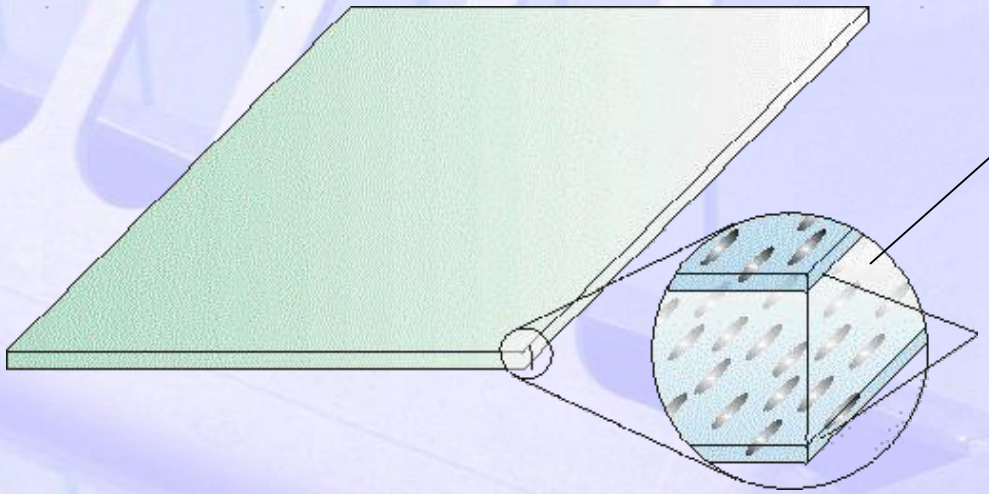
Spherical silver nano particles absorb radiation in the blue spectral range (≈410nm)
⇒ yellowish appearance;
no polarization



Absorption bands for the two orthogonal polarizations - defined by the short (b) and long (a) halfaxes - shifts towards the UV (short) and IR (ling) wavelength ranges.
⇒ greenish-brownish appearance
⇒ bluish (p) and yellowish (s) appearance in polarized light; polarization

Design of colorPol® polarizer

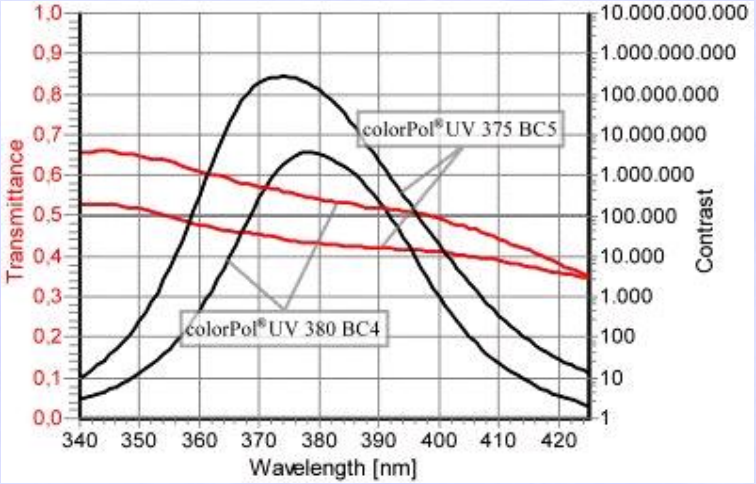
The polarization is caused by plasmon absorption of elongated and axis-aligned silver nano particles.



colorPol® standard polarizers

colorPol® UV

colorPol® UV polarizers are available for the 330 nm to 415 nm range. They are resistant to UV radiation, feature high contrast values and are temperature stable
dimensions up to 50x30 mm²
greater dimensions on request
thickness: 0.22 to 2.0 mm



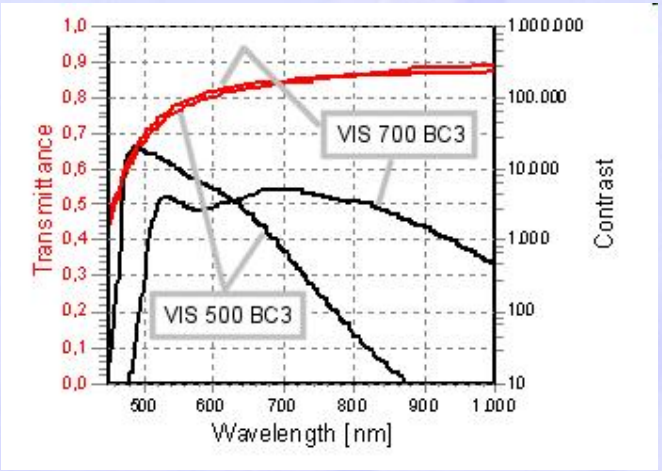
fields of application:

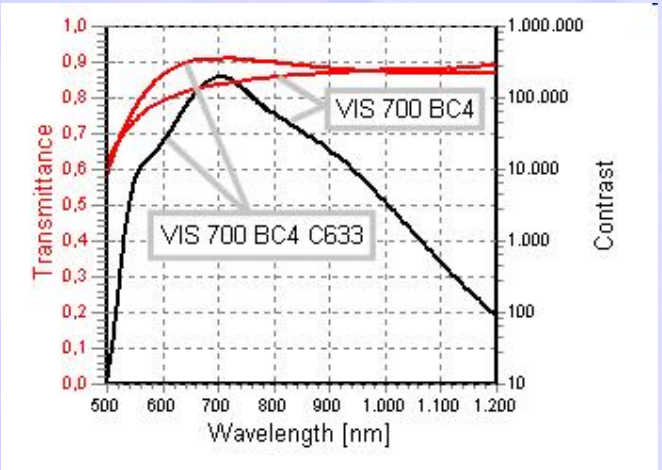
- UV sensor
- UV ellipsometry
- UV polarizers (Alignment)
- optical insulators
- optical windows

colorPol® standard polarizers

colorPol® VIS

colorPol® VIS polarizers are available for the 450nm-780nm range. Contrast and wavelength are available according to customer's requirements.
In principle colorPol® VIS polarizers are dichroic, i.e. on lighting with polarized light they appear according to polarization direction colored.
dimensions up to 50x30 mm²
greater dimensions on request
thickness: 0.22 to 2.0 mm





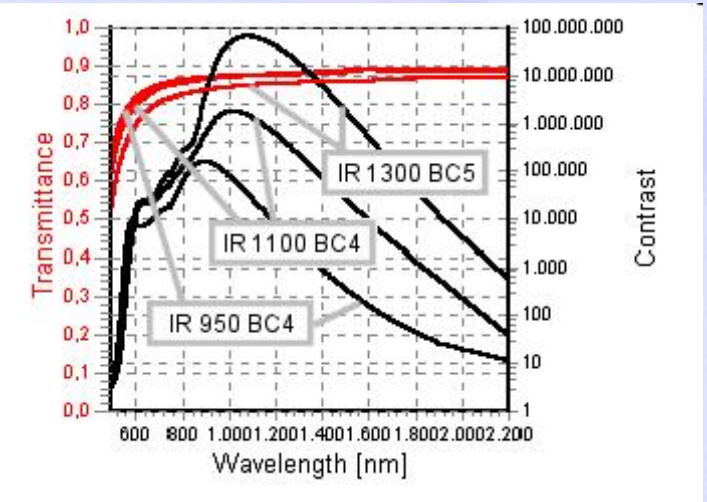
fields of application:

- optical sensors
- ellipsometry
- fiber coupler
- optical insulator
- modulator
- optical switch
- polarizer for special displays (HT-LCD)

colorPol® standard polarizers

colorPol® IR

colorPol® IR polarizer are available for the 780 nm - 1700 nm range.
Contrast and wavelength are available according to customer's requirements.
Dimensions to 50x30 mm² greater dimensions on request
thickness: 0.22 to 2.0 mm

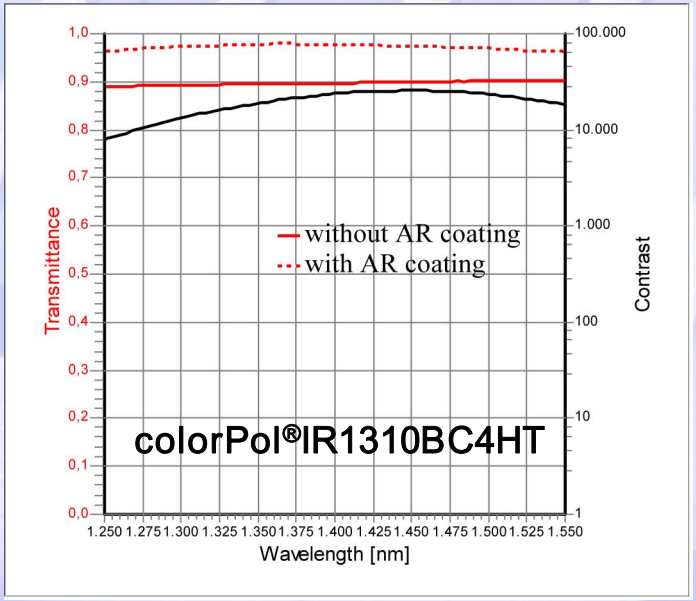


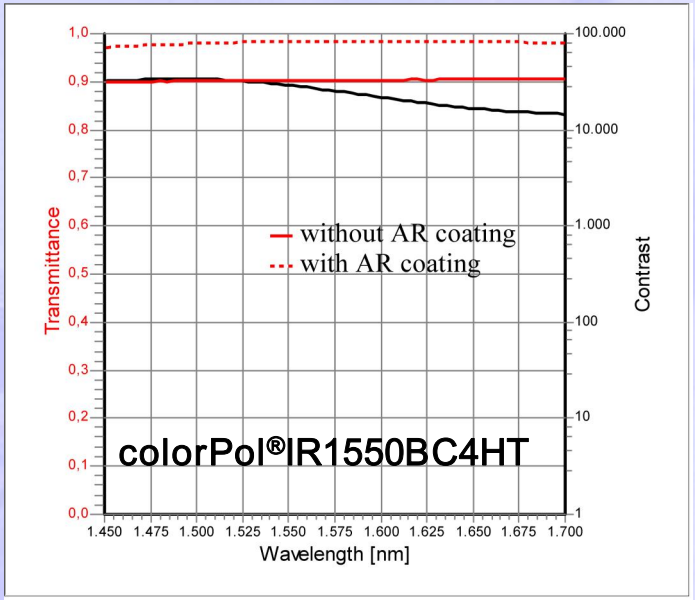
fields of application:

- optical sensor
- ellipsometry
- fiber coupler
- optical insulator
- optical window
- modulator
- optical switch

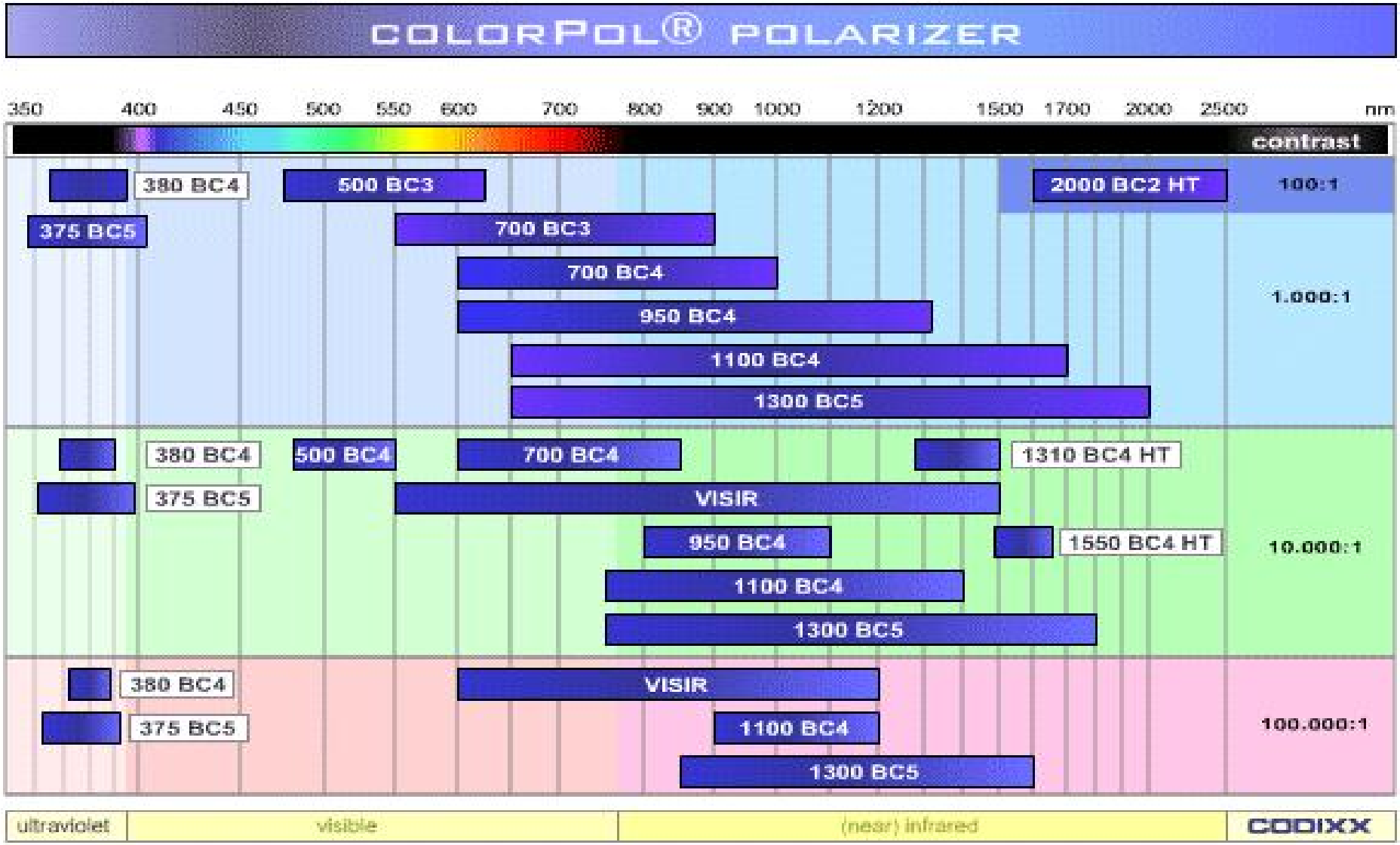
colorPol® HT polarizers

(H)igh (T)ransmittance Polarizers are IR-polarizers, that feature high contrast and very high transmittance (98%). They work in a wavelength range of 1200-2500nm. They are especially developed for applications in elements of fiber optic communications.





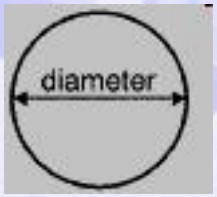
Max. dimensions: 50 x 40 mm²
operating temperature range: to 400°C
thickness: 250 ± 50 µm

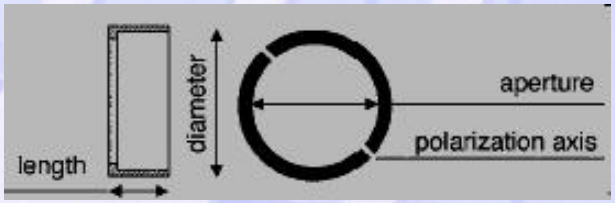

COLORPOL® POLARIZER
350
400
450
500
550
600
700
800
900
1000
1200
1500
1700
2000
2500
nm
contrast
380 BC4
500 BC3
2000 BC2 HT
100:1
375 BC5
700 BC3
700 BC4
1.000:1
950 BC4
1100 BC4
1300 BC5
380 BC4
500 BC4
700 BC4
1310 BC4 HT
375 BC5
VISIR
950 BC4
1550 BC4 HT
10.000:1
1100 BC4
1300 BC5
380 BC4
VISIR
375 BC5
1100 BC4
100.000:1
1300 BC5
ultraviolet
visible
(near) infrared
CODIXX

colorPol® standard polarizers

colorPol® round polarizer

range: all standard and HT polarizers
wavefront distortion < λ/4 @ d=2mm
temperature range -20°C to +120°C



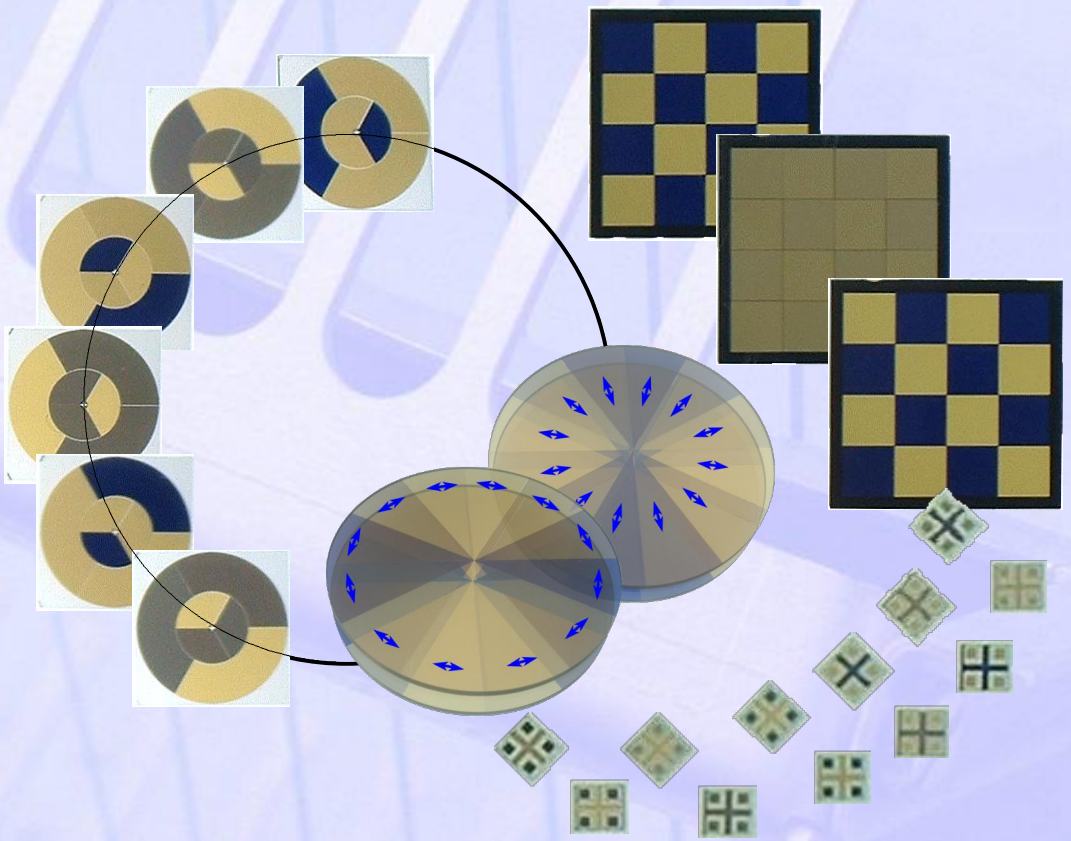


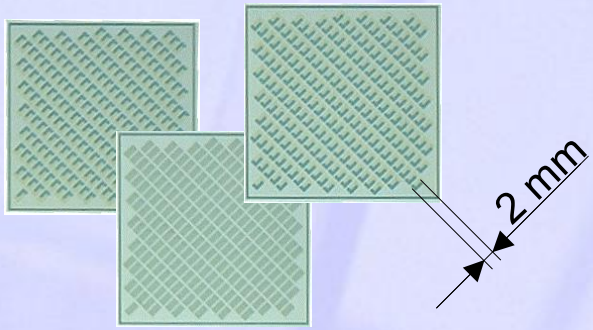
D = 12.5 mm
12.7 mm
25.0 mm
25.4 mm

d = 0.25 ± 0.05 mm
2.00± 0.20 mm

colorPol® S - the patterend polarizer

with areas of different polarization and optical properties





- two or more different polarization directions are possible
- customized shapes and sizes of patterns
- resolution: 15 µm
- spectral features of several patterns can be different
- high contrast
- lucent or absorbing, non polarizing areas possible
- spectral ranges: UV, VIS and NIR

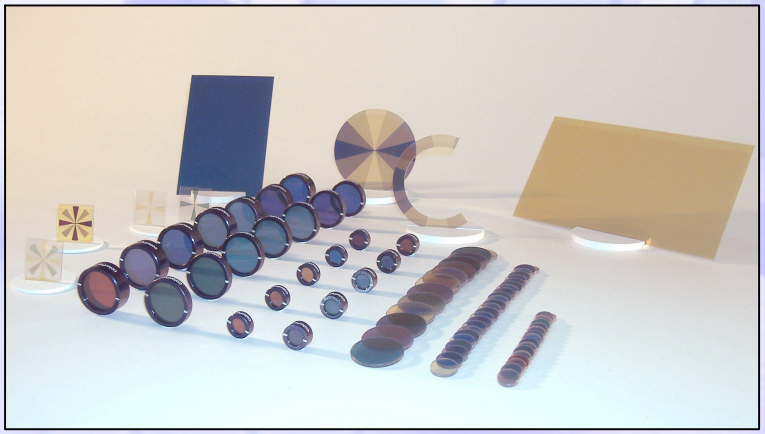
colorPol®

CODIXX

At a glance

products:

- optical filter
- mounted filter
- patterned filter
- filter with AR-coating
- filter in any shape



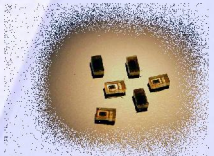
significant features

- temperature stability (up to +400 °C)
- resistance to UV radiation
- resistance to chemicals
- high transmittance values
- wavelength ranges UV, VIS, NIR
- processability
- wide acceptance angle range
- very high contrast
- homogeneity of polarization degree
- can be patterned
- resistance to climate

colorPol® Applications

Polarimetry

Ellipsometry



Optical sensors

Spectrometry

Laser modules

Laboratory

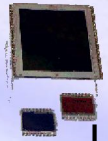
Metrology

Lyot filters

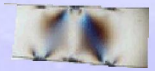
Light sources

Medical applications

Cameras for
VIS and NIR



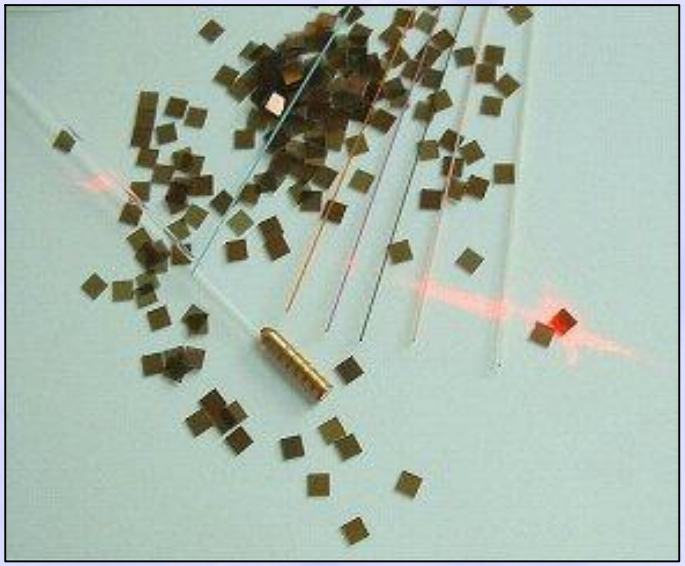
LCD



Stress analysis

Electro optical devices

Polarizers are used in



- Optical sensors
- Radiation engineering
- Microscopy / Polarimetry
- Ellipsometry
- fiber sensor
- Optical switch
- Optical modulator
- Optical insulator, Faraday-isolator
- Optical-fiber transmission
- LCD-Displays
- Photoelasticity
- Surface inspection

Element, determining function : the polarizer

colorPol® customers (selection)

3M

Agilent

Applied Materials

ASML

Boulder Nonlinear Systems

Cisco

Corning

Edmund Optics

Finisar

Isowave

Jet Propulsion Laboraty

JDS Uniphase

KLA Tencor

LINOS

Lockheed Martin

Meadowlark

Melles Griot

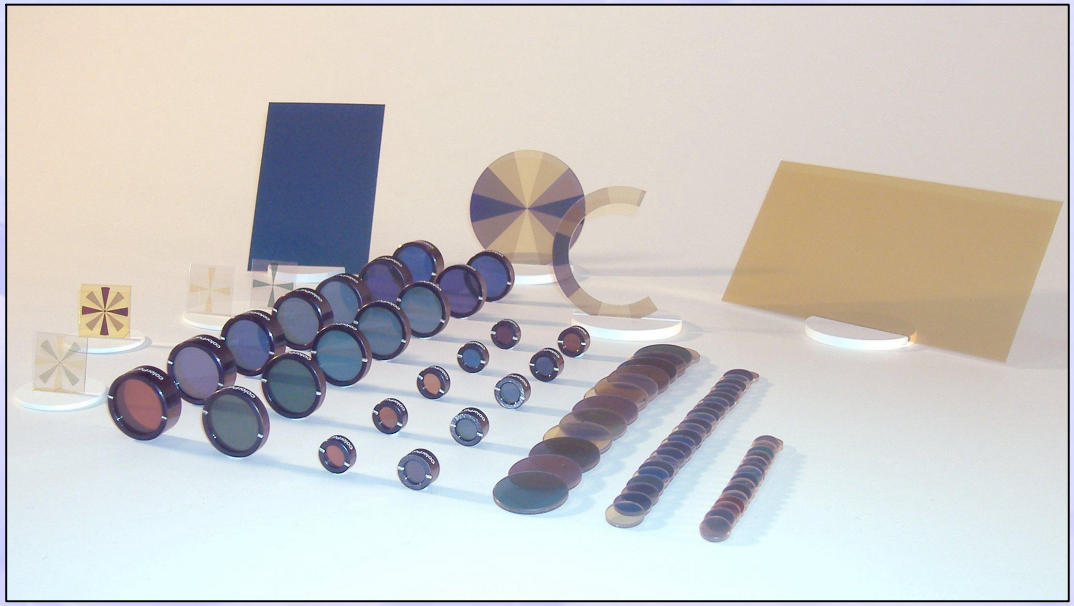
OFR Optics For Research

Osram

Sony

THORLABS

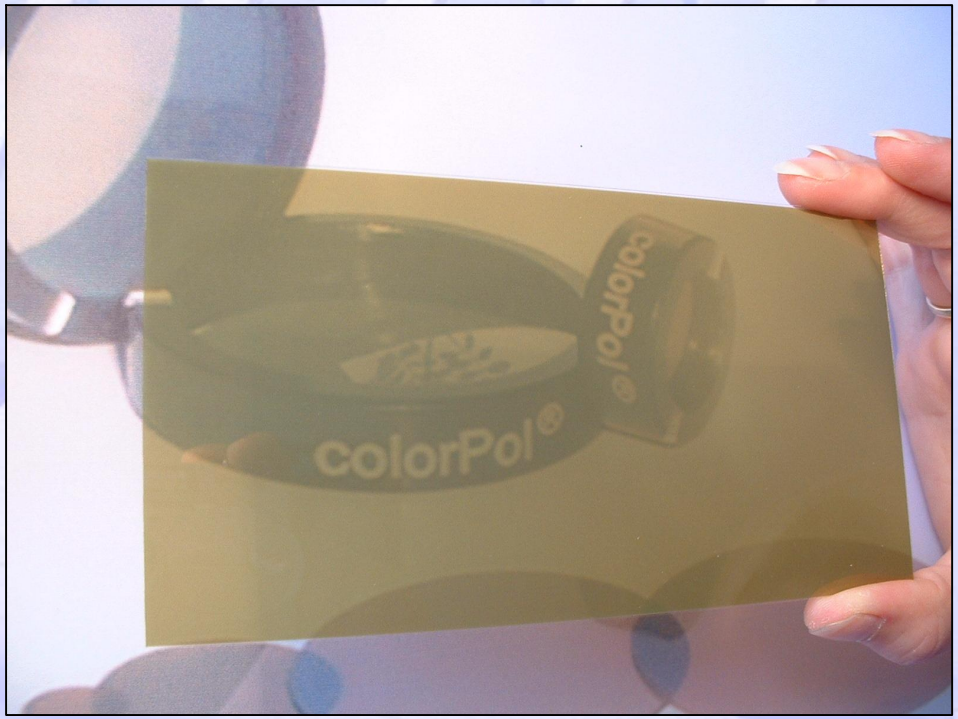
XTELLUS



colorPol® sample sets

A set of four or six standard or HT-colorPol® polarizers of your choice for testing in your application at an attractive price

The product



colorPol® polarizer:

- high performance glass polarizer
- excellent polarization properties
- versatile applicable
- for UV-A, VIS and NIR-MIR
- wide acceptance angle
- extreme durable
- easy to use
- patterning capability
- UV, temperature and chemical resistance