chromasens
Imaging for Professionals

Chromasens
The line scan experts

▶ Cameras ▶ Lights ▶ OEM-Systems

chromasens.de

![chromasens — Imaging for Professionals]

Markus Schnitzlein (pictured left) and Martin Hund, CEOs of Chromasens GmbH

MADE IN GERMANY · INNOVATIVE · inspect award 2017 nominee · DEKRA Quality Management ISO 9001

Dear business partners,

Chromasens – our name is the best indicator: our central objective is to deliver high-performance imaging systems using innovative **color** and **sensor** technology. We provide image capturing systems for 2D and 3D applications like color line-scan camera systems, 3D stereo cameras and high-intensity LED lighting.

Our products are used in a wide range of industry sectors. Customers from all sorts of branches – electronics and semiconductor inspection, food industry, printing industry, pharmaceutical and medical technology – make use of Chromasens' products and system solutions for optical inspection and metrology to ensure their product quality. Our engineers and scientists work closely with the customers in order to implement innovative and highly optimized industrial image processing systems for their specific needs. Firmware and suitable software enabling the integration of cameras and light modules into complete systems, as well as customized firmware and software packages can be delivered. Continuous cooperation with universities and research institutions ensures our innovative edge and our know-how.

World-wide sale of standardized components is handled either directly or by certified value-added distributors. From concept and design until series production, fair and comprehensive support of our customers is our service philosophy.

Markus Schnitzlein
CEO of Chromasens GmbH

Martin Hund
CEO of Chromasens GmbH

Chromasens –
Imaging for Professionals

Chromasens GmbH, founded in 2004, is a qualified address for all demands relative to industrial image capturing and image processing.

The company designs and produces innovative image capturing and image processing systems "Made in Germany" for the most compelling requirements. Development and manufacturing are located at the company's facilities in Constance. Chromasens' expertise is both in system and component development.

We offer line scan cameras, 3D stereo cameras, multichannel cameras, line lights and customized camera systems. Chromasens' range of services is rounded off by intelligent software solutions for image correction, 3D metrology, color management and color measurement technology. We offer professional advice and support throughout each phase of the project.

Chromasens has received several innovation awards. In 2007 the company received the Siemens AG – Industrial Solutions and Services Innovation Award, and in 2011 the "Star Supplier 2011" Award for innovation, again from Siemens AG, this time from its Mobility Infrastructure and Logistics business unit.

Chromasens currently employs approximately 60 people and is ISO 9001-2008 certified.

OEM – Solutions for Machine Vision:

Technology Competence

The combination of its individual components influences the performance of an image capturing system. For optimum results all components have to fit perfectly with the customers' requirements. The engineers and scientists at Chromasens handle the complete imaging process from creation of light to image formation and image processing. Both meticulous design and selection of suitable components like CCD or CMOS sensors are fundamental for developing high performance camera systems. Our OEM design includes evaluating new technologies and materials, conducting simulations and tests, designing mechanical and electronic components and developing firmware and software. Our current sensors capture the visible spectrum and the near infrared from 360 to 960 nm. By using the most suitable components and sensors we provide highly optimized camera and scanning systems for our customers.

Fluorescent materials, visible or near infrared light – illumination is an essential component that we develop to suit specific applications. Our engineers are specialized in lighting technology and using state-of-the-art tools for simulations and measurements. Consequently, our high performance illumination modules provide a broad range of wavelengths, including the UV, VIS and near infrared.

Industrial Sectors

Wafer and semiconductor

Printing and packing

Security printing

Project Competence

For more than 25 years our team has been developing and supplying customized image capturing and line scan camera systems. The optical, electronic and mechanical elements of the camera and illumination system are finely adapted to suit the specific customer requirements. We work closely with you to draw up the concept and put emphasis on an application-oriented yet cost-efficient overall system. Our experience comes from numerous OEM projects adding up to more than 60.000 camera systems delivered to date. Providing comprehensive support throughout each project phase is a cornerstone of our business philosophy. During the system development, all aspects are considered for ensuring an economic and reliable product solution in combination with optimal production technology.

Pharma

Food

Wood and metal

allPIXA Color Line Scan Cameras

Precision in Color

The Chromasens allPIXA is an outstanding fast tri-linear CCD color line scan camera. It combines the excellent image quality of CCD sensors with extremely high line rates.

Camera overview

▸ High sensitivity tri-linear RGB sensors
▸ Scan rates up to 60 kHz for standard configurations (up to 110 kHz in special OEM configurations)
▸ True RGB at excellent signal-to-noise ratio

Color quality

▸ Continuous white balancing
▸ Large 10µm CCD pixels for best image quality
▸ Internal 14 bit A/D conversion per color channel
▸ Multiple Color Conversion Matrix (CCM) supported
▸ Internal gamma correction

Functionality / Intelligence

▸ Internal keystone correction for multiple angle positioning of the camera
▸ Automatic insertion of machine and camera data inside the image (e.g. time stamp; CRC, encoder position; scanning speed, checksum)
▸ Sub-pixel accuracy for registration error compensation (patented)
▸ Precise multiple camera synchronization
▸ Comprehensive trigger options
▸ Test image generator
▸ Adjustable Camera Link clock
▸ Grey image output (at individual color weights)
▸ 100% quality checked and calibrated to provide best quality and consistent camera performance

Applications

- Measurement/Quality control
- Print inspection
- Surface inspection
- Document scanning
- Web inspection
- General machine vision
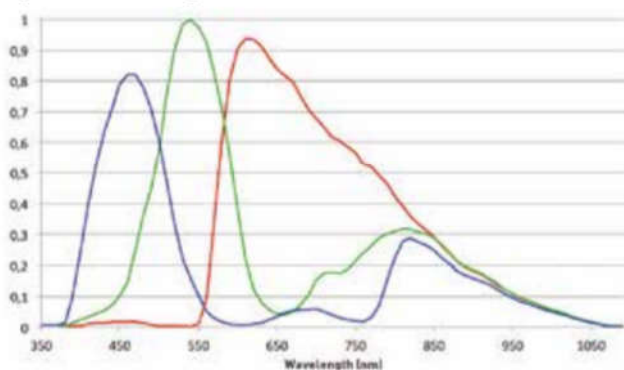- Sorting processes

Print

Pharma

Food

Spectral sensitivity:

Camera specifications:

Sensor	Tri-linear CCD scan line
Number of Pixels	2048 x 3 pixels 4096 x 3 pixels 7300 x 3 pixels (3 x 1024 and other resolutions on request)
Active Pixel Size	10 μm x 10 μm
Data Rate	510 MBytes/s I 3 x 170 MHz
Max. Line Rate	2048 x 3 Pixel with up to 60,7 kHz 4096 x 3 Pixel with up to 34,4 kHz 7300 x 3 Pixel with up to 21,2 kHz
Data Format	3 x 8 Bit color or 1 x 8/10/12 Bit mono mode with 3 x 14 Bit on board A/D converter
Video Output	Camera Link @ 85MHz Medium, Base
Interfaces	Camera Link Medium/Base Power supply (Hirose) External I/O (15pin DSub) RS232
Certifications	CE, FCC, RoHS
Power Supply	24 V DC +/- 10%; <16W
Operating Temperature	0°C to 60°C, 32°F to 140°F (housing temp.)
Dimensions	L=102 mm, H=126 mm, D=68 mm
Lens Mounts	Large variety of adapters: F-Mount, C-Mount, M39x1/26", M42x1, M72x0.75

Customized Cameras and Imaging Systems (OEM)

Chromasens offers fully customized light, camera and scanner solutions. Some examples include:
· Special pre-processing functions or image information statistics inside the camera to save CPU resources
· Customized housing design for cameras
· Flexible I/O signals synchronize other system components, including lighting
· Customized scanner modules including optics, light, sensors, image processing mechanics and software.

allPIXA pro Color Line Scan Cameras

Up to 156 kHz line rate

Chromasens developed the world's fastest tri-linear CCD color line scan camera combining the outstanding image quality of CCD sensors with extremely high line rates. The variety in line length up to 3 x 7300 px and a maximum speed of a previously unattainable 156 kHz provides a maximum in flexibility for virtually any application.

Camera overview

▸ High sensitivity tri-linear CCD sensors
▸ Scan rates up to 92 kHz for standard configurations (up to 156 kHz in special OEM configurations)

Color quality

▸ Continuous white balancing
▸ Large 10μm CCD pixels for best image quality
▸ Internal 14 bit A/D conversion per color channel
▸ Multiple Color Conversion Matrix (CCM) and offset supported
▸ Internal gamma correction

Functionality / Intelligence

▸ Fully synchronized multi-channel LED flash control
▸ Internal keystone correction for multiple angle positioning of the camera
▸ Automatic insertion of machine and camera data inside the image (e.g. time stamp; encoder position; scanning speed, checksum)
▸ Sub-pixel accuracy for registration error compensation (patented)
▸ Precise multiple camera synchronization
▸ Adjustable Camera Link clock
▸ Grey image output (at individual color weights)
▸ 100% quality checked and calibrated to provide best quality and consistent camera performance

Applications

- Measurement/Quality control
- Print inspection
- Surface inspection
- Document scanning
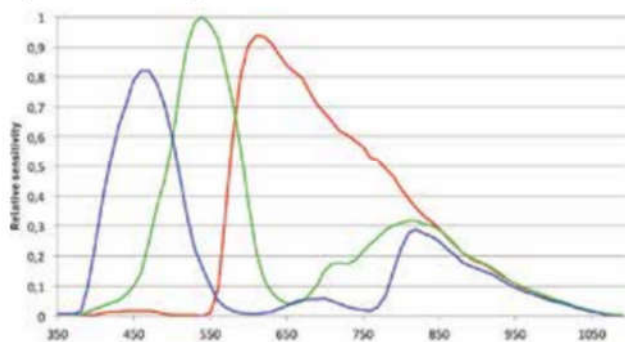- Web inspection
- General machine vision
- Sorting processes

Foil

Print

Spectral sensitivity:

Camera specifications:

Sensor	Tri-linear CCD scan line
Number of Pixels	2048 x 3 pixels 4096 x 3 pixels 6000 x 3 pixels 7300 x 3 pixels (3 x 1024 and other resolutions on request)
Active Pixel Size	10 µm x 10 µm
Max. Line Rate	2048 x 3 Pixel with up to 92,7 kHz 4096 x 3 Pixel with up to 50,8 kHz 6000 x 3 Pixel with up to 34,3 kHz 7300 x 3 Pixel with up to 29,7 kHz
Data Format	3 x 8/10 Bit color or 1 x 8/10/12 Bit mono mode with internal 3 x 14 Bit A/D converter
Video Output	Camera Link @ 85 MHz Full (80/64 Bit), Medium, Base
Interfaces	Camera Link Full/Medium/Base Power supply (Hirose) External I/O (15 pin D-Sub) RS232
Certifications	CE, FCC compliant, RoHS
Power Supply	24 V DC +/- 10%; < 19W
Operating Temperature	0°C to 60°C, 32°F to 140°F (housing temp.)
Dimensions	L=102 mm, H=100 mm, D=77 mm
Lens Mounts	Large variety of adapters: F-Mount, C-Mount, M39x1/26", M42x1, M72x0.75

Customized Cameras and Imaging Systems (OEM)

Chromasens offers fully customized light, camera and scanner solutions. Some examples include:
- Special pre-processing functions or image information statistics inside the camera to save CPU resources
- Customized housing design for cameras
- Flexible I/O signals synchronize other system components, including lighting
- Customized scanner modules including optics, light, sensors, image processing mechanics and software.

3DPIXA Stereo Line Scan Camera

Precision in high-resolution 3D and color

inspect
award 2017
nominee

Chromasens 3DPIXA stereo line scan camera is a unique combination of line scan technology with fast stereo algorithms running on GPU. The 3DPIXA camera enables new 3D inspection and measuring applications requiring high resolution.

Unique features of the 3DPIXA Technology

▸ High speed inline 3D measurement
▸ Large field of view @ high resolution
▸ Height resolution up to 1 micron
▸ 2D resolution up to 5 micron
▸ 3D data and full color image in one scan
▸ Line scan frequencies up to 30 kHz @ full resolution
▸ Flexible use of all types of line illuminations
▸ Easy to use application programming interface (API)
▸ Integrated in standard machine vision libraries

Applications

• Height measurement
• Identifying micron defects
• Verification of height and 2D Position
• Combined 3D and color inspection
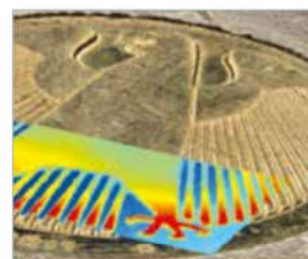• 3D web inspection

Applications of 3DPIXA technology
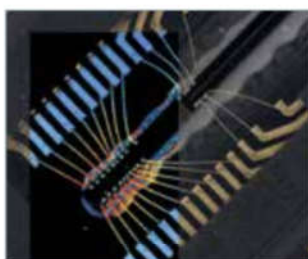
Wirebond inspection

PCB inspection

Food quality assessment

Metal surface inspection

3DPIXA	COMPACT			DUAL				DUAL HR	
	CP000470-C01-015-0040	CP000470-C01-030-0105	CP000470-C01-071-0250	CP000470-D01-005-0035	CP000520-D01-015-0105	CP000470-D01-030-0210	CP000470-D01-070-0500	CP000520-D02-002-016	CP000520-D02-005-035
Optical Resolution (µm/px)	15	30	71	5	15	30	70	2.5	5
Field of View (mm)	40	105	250	35	105	210	500	16	35
Number of pixel	2666	3500	3520	7000	7000	7000	7142	7000	7000
Height resolution (µm)*	3	10	45	1	3	5	14	0.35	0.55
Height range (mm)**	2.6	8.2	39	0.7	3.5	11.2	52.3	0.2	1.2
Free working distance (mm)	99.6	173.6	377	71.9	229	383.3	796.9	61	77.9
Maximum speed (mm/s)	310	630	1500	100	440	630	1480	53	106
CameraLink configurations	Base/Medium	Base/Medium	Base/Medium	Base/Medium	Base/Medium/Full	Base/Medium	Base/Medium	Base/Medium	Base/Medium
Line frequency (kHz)	21.2	21.2	21.2	21.2	29.7	21.2	21.2	21.2	21.2
Dimensions LxWxH (mm)	167.65 x 102 x 100	151.04 x 102 x 100	143 x 102 x 100	324 x 258 x 97	274 x 212.4 x 98.5	244 x 242 x 98.5	222 x 352 x 98.5	620 x 386 x 99	363 x 278 x 99

* Height range and height resolution depend on object surface   ** For well structured surfaces the height range can exceed the specified values
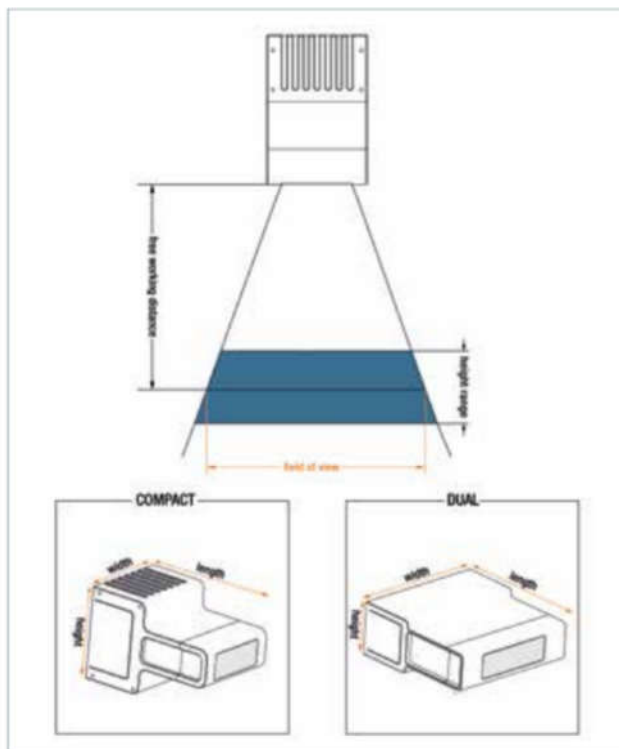

Food
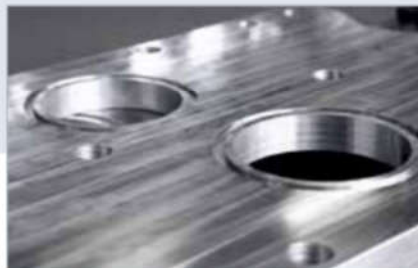
Metal

Electronics

Camera specifications:

Camera	Stereo camera with lenses (factory calibrated)
Sensor	Tri-linear CCD line sensor (RGB)
Active pixel size	10 µm x 10 µm
Interfaces	Camera Link Base/Medium/Full External I/O Serial (RS-232) Power supply (Hirose)
Power supply	Compact: 24 V DC +/- 10% 16 W Dual: 24 V DC +/- 10% 32/38 W
Trigger mode	Free run / external trigger
Operating temperature	0°C to 60°C, 32°F to 140°F (housing temperature)
Software	· Chromasens 3D-API for real time 3D data calculation on NVIDIA GPU board (Windows x64) · Chromasens 3D Viewer
Software output	Rectified color image (3x8 Bit) Height map (16 Bit) 3D point cloud
Supported software libraries	LabVIEW (National Instruments) HALCON (MVTec) MIL (Matrox) Coake (SAC)
Additional accessories	Chromasens Corona II illumination
Certifications	CE, FCC compliant, RoHS

truePIXA Multi-spectral Line Scan Camera

Precision in color measurement

Add a new dimension to multi-spectral imaging with the truePIXA camera. It offers a combination of high speed and spectral color measurement for each pixel to permit color measurement on two-dimensional objects, especially for print inspection. It captures the spectral footprint of images in full size and applies to on- and off-line imaging.

Unique Features of truePIXA Technology

▸ High speed line scan technology
▸ 12 image channels with distinct spectral content
▸ Allows measurements on RGB, CIE-L*a*b* and spectral reflectance factor data
▸ High stability and excellent repeatability
▸ real time color measurement
▸ Chromasens Chromantis software
  · User interface for image acquisition
  · Spectral and color data visualization
  · Basic data analysis
  · Data import and export
▸ User friendly application programming interface (API)
▸ Combined with Chromasens Corona II D50 illumination, truePIXA cameras achieve high accuracy color measurement

Applications

• Spectral measurement
• Color mesaurement
• 100% quality control
• Sorting processes
• Optical density
• Surface inspection
• Defect inspection
• Web inspection

truePIXA Model Numbers	6 CHANNELS	12 CHANNELS					
	CP000518-06-C01-130	CP000464-C01-043	CP000464-C01-050	CP000464-C01-090	CP000464-C01-130	CP000464-C02-200	CP000464-C02-423
Optical resolution (µm/px)*	195	600	503	282	195	125	60
Optical resolution (dpi)*	130	43	50	90	130	200	423
Field of view (mm)	298	975	820	450	298	165	90
Number of pixel	1528	1625	1630	1595	1528	1320	1500
Free working distance (mm)	497.8	1509.4	1268	715.5	497.8	465.5	236
Maximum speed (m/s)	9.9	12.7	10.6	5.9	4.1	2.6	1.2
Line frequency (kHz)	50.8	21.2	21.2	21.2	21.2	21.2	21.2
Camera Link configurations	Base/Medium/Full	Base/Medium	Base/Medium	Base/Medium	Base/Medium	Base/Medium	Base/Medium
Illumination length (mm)	340	1360	1020	680	340	340	340
Dimensions LxWxH (mm)	102.3x134x126	102.3x134x126	102.3x134x126	102.3x134x126	102.3x134x126	102.3x134x126	102.3x134x126

*optical resolution at working distance.   Note: Please contact us for different resolutions and field of views.
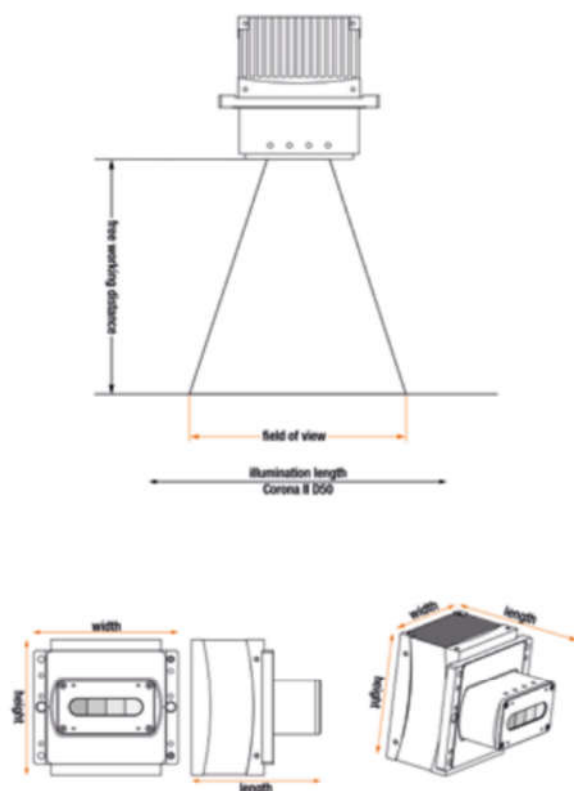
Print

Textile

Dimensions (in mm):

Free working distance

field of view

illumination length
Corona II D50

width

height

length

width

height

length

Camera specifications:

Camera	Multi-spectral line scan camera with 6 or 12 image channels
Sensor	Multi-channel CCD line sensor
Active pixel size	10 µm x 10 µm
Spectral data range	380 nm – 730 nm
Measurement functionality	Spectral reflectance, CIE-L*a*b*, CIE-XYZ, CIE-L*c*h*
Measurement geometry	Adapted 45°/0° (illumination / observation angle)
Short-term repeatability	0.05 Δ76
White reference	Absolute/relative
Light source	LED based D50, refer to Corona II D50 for best performance
Interfaces Camera	Link Base/Medium/Full External I/O Serial (RS-232) Power supply (Hirose)
Power supply	24V DC +/- 10%; 16W
Trigger mode	Free run / external trigger
Operating temperature	0°C to 60°C, 32°F to 140°F (housing temperature)
Software	· Chromasens truePIXA-API (TpApi) · Chromasens Chromantis for measuring, viewing and exporting spectral and multi-channel images (Windows x64)
Software output	Multi-channel-, spectral-, CIE-L*a*b*-, CIE-XYZ- and CIE-L*c*h*-images in 16 Bit TIFF and FITS format
Additional accessories	Cross polarization kit for camera and Chromasens line-lights
Certifications	CE, FCC compliant, roHS

Corona II LED Line Lighting System

D **Top light and dark field illumination**

CORONA II LED lighting modules feature powerful brightness up to 3.500.000 lux and deliver outstanding homogeneity via a patented reflector design that perfectly shapes light, eliminating chromatic aberrations for unprecedented performance and better inspection results.

Features
Top Light/Dark Field Illumination

- Brightness up to 3.500.000 lux
- Patented reflector focusing technology
  - No color abbration
  - Higher efficiency
- Various LED colors
  - Standard: White, red, green, blue
  - IR (850 nm or 940 nm)
  - UV (395 nm - on request)
  - D50 (standard daylight)
- Eight lengths up to 1360 mm per single module
- Three passive cooling options
- Fan or water cooling available
- Stackable modules
- Various screens
  - Different diffuse screens
  - Polarizing screen
- High quality LED binning
- Advanced thermal management and temperature control
- Housing design for easy mounting and integration

LED controller

- External LED controller for flexibility and improved thermal management
- Four channels up to 1.8 amps per channel
- RS232, USB, Ethernet and RS485 from PC to the controller
- Analog or PWM input for external control
- Temperature stabilization
  - +/- 1 Kelvin water cooling option
  - +/- 2 Kelvin fan based cooling
- Automatic detection of Corona II modules with automatic current limitation
- Temperature monitoring in the controller and the Corona II modules

Customized solutions

Besides standard components Chromasens offers full custom solutions for lighting, camera and scanner solutions.
- Based on standard Corona II and XLC4 technology
- Special housing for the controller available
- Special filters or screenings for the LED module available
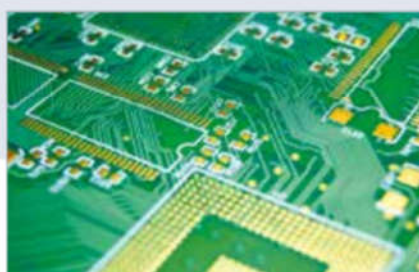- Full custom designs

Applications

- Print inspection
- Surface inspection
- Document scanning
- Food inspection
- Steel inspection
- Semiconductor industry
- Measurement and quality control
- Web inspection
- General machine vision
- Sorting processes

Food

Electronics

Wood

THE CHROMASENS CORONA II FAMILY:

Three lighting concepts:

(D)

TOP LIGHT DARK FIELD

(B)

BRIGHT FIELD BACK LIGHTING

TUBE LIGHTING

Camera specifications:

CORONA II	
Illuminance (white)	Up to 3.500.000 lux @ 60 mm focus (type A) Min. 1.500.000 lux @ 95 mm focus (type B) Min. 800.000 lux @ 190 mm focus (type C) Min. 300.000 lux @ parallel focus (type D)
Available module length	170 mm to 1360 mm in steps of 170 mm
Focal length	60 mm; 95 mm, 190 mm; parallel
LED colors	White (5500 Kelvin or 3500 Kelvin); Red (632 mm); Green (520 nm); Blue (452 nm); IR (850 nm and 940 nm); UV (395 nm)
Ports	One LED channel per 170 mm segment I²C port for temperature control and identification
Cable length	Standard length 2.5 m or 5 m Up to 15 m or drag chain cable on request
Protection class	IP 54
Operating temperature	0°C to + 70°C (housing temperature)
Certifications	CE, FCC compliant, RoHS

CONTROLLER XLC4	
Input voltage	24 Volt DC +/- 10 %; approx. 3.5 amps per used channel for full operation
Output	4 current controlled outputs, from 0.2 amps to 1.8 amps Output power 80 watt per channel and max. output voltage up to 47 volts
Controlling	RS232; RS485, USB, Ethernet Analog input 1-10 Volt and PWM interface
Protection class	IP 40
Operating temperature	0°C to + 50°C (housing temperature)
Certifications	CE, FCC compliant, RoHS

Corona II LED Line Lighting System

Tube light illumination

The tube light version of the Corona II offers the most powerful light source for line scan applications with diffuse lighting conditions, for example, when inspecting metallic objects with highly reflective or glossy surfaces.

Features
Tube Light Illumination

▶ Now with two power options:
  · Ultra high bright version: up to 1.200.000 lux
  · High bright version: up to 600.00 lux
▶ High uniformity light distribution
▶ Suitable for specular surfaces
▶ Reduces shadows on objects
▶ Reduces unwanted reflections
▶ Modular concept
▶ Compatible with regular Corona II
▶ Compatible with XLC4 controller
▶ Various LED colors
▶ Eight lengths up to 1360 mm per single module
▶ Camera angles 0° or 15°
▶ Active fan or water cooling
▶ Passive cooling options on request
▶ Temperature stabilization
▶ High quality LED binning for white
▶ Advanced thermal management and temperature control
▶ Housing design for easy mounting and integration

LED controller

▶ External LED controller for flexibility and improved thermal management.
▶ Four channels up to 1.8 amps per channel
▶ RS232, USB, Ethernet and RS485 from PC to the controller
▶ Analog or PWM input for external control
▶ Temperature stabilization:
  · +/- 1 Kelvin water cooling option
  · +/- 2 Kelvin fan based cooling
▶ Automatic detection of Corona II modules with automatic current limitation
▶ Temperature monitoring in the controller and the Corona II modules

Customized solutions

Besides standard components Chromasens offers full custom solutions for lighting, camera and scanner solutions.

▶ Based on standard Corona II and XLC4 technology
▶ Special housing for the controller available
▶ Special filters or screenings for the LED module available
▶ Full custom designs

Applications

- PCB inspection
- Medical applications
- Print inspection
- Surface inspection
- Steel inspection
- Semiconductor industry
- Measurement and quality control
- Web inspection
- General machine vision
- Sorting processes

Pharma

Security

Electronics

THE CHROMASENS CORONA II FAMILY:

Three lighting concepts:

D

TOP LIGHT DARK FIELD

B

BRIGHT FIELD BACK LIGHTING

TUBE LIGHTING

Camera specifications:

CORONA II	Ultra High Bright	High Bright
Illuminance (white @ 10mm working distance)	Up to 1.200.000 lux	Up to 600.000 lux
Available module length	170 mm to 1360 mm in steps of 170 mm	170 mm to 1360 mm in steps of 170 mm
Working distance	10 mm	10 mm
LED colors	White (5500K or 3500K) Green (520 nm) Blue (452 nm) IR (850 or 940 nm) Mixed cool + warm white	White (5500K or 3500K) Red (632 nm) Green (520 nm) Blue (452 nm) IR (850 or 940 nm)
Ports	4 LED channels per 170mm segment	2 LED channels per 170mm segment
Cable length	Standard length 2.5 m or 5 m Up to 15 m or drag chain cable on request	Standard length 2.5 m or 5 m Up to 15 m or drag chain cable on request
Protection class	IP 20	IP 20
Operating temperature	0°C to + 70°C (housing temperature)	0°C to + 70°C (housing temperature)
Certifications	CE, FCC compliant, RoHS	CE, FCC compliant, RoHS

CONTROLLER XLC4		
Input voltage	24 Volt DC +/- 10 %; approx. 3.5 amps per used channel for full operation (~ 14 amps for 4 channels)	
Output	4 current controlled outputs, from 0.2 amps to 1.8 amps Output power 80 watt per channel and max. output voltage up to 47 volts	
Interfaces	RS232; RS485, USB, Ethernet Analog input 1-10 Volt and PWM interface	
Protection class	IP 40	
Operating temperature	0°C to + 50°C (housing temperature)	
Certifications	CE, FCC compliant, RoHS	

Corona II LED Line Lighting System

Ⓑ Back lighting and bright field illumination

With the outstanding luminance and uniformity of the Corona II bright field illumination, high-speed applications without any compromises in image quality are possible.

Features
Back lighting/Bright field illumination

- Ultra high bright: 280.000 cd/m² or 880.000 Lux
- Compact design
- Modular concept
- Compatible with regular Corona II
- Compatible with XLC4 controller
- Various LED colors
  - Standard: White, red, green, blue
  - IR 850 nm or 940 nm
  - UV (395 nm - on request)
- Modular lengths up to 1360 mm per single module
- Multiple passive cooling options
- Active fan or water cooling
- Temperature stabilization
- High quality LED binning and color matching with regular Corona II
- Advanced thermal management and temperature control
- Housing design for easy mounting and integration

LED controller

- External LED controller for flexibility and improved thermal management.
- Four channels up to 1.8 amps per channel
- RS232, USB, Ethernet and RS485 from PC to the controller
- Analog or PWM input for external control
- Temperature stabilization
  - +/- 1 Kelvin water cooling option
  - +/- 2 Kelvin fan based cooling
- Automatic detection of Corona II modules with automatic current limitation
- Temperature monitoring in the controller and the Corona II modules

Customized solutions

Besides standard components Chromasens offers full custom solutions for lighting, camera and scanner solutions.

- Based on standard Corona II and XLC4 technology
- Special housing for the controller available
- Special filters or screenings for the LED module available
- Full custom designs

Applications

- Print inspection
- Surface inspection
- Document scanning
- Food inspection
- Steel inspection
- Semiconductor industry
- Measurement and quality control
- Web inspection
- General machine vision
- Sorting processes

Solar cells

Metal

Glas

THE CHROMASENS CORONA II FAMILY:

Three lighting concepts:

D

TOP LIGHT DARK FIELD

B

BRIGHT FIELD BACK LIGHTING

TUBE LIGHTING

Camera specifications:

CORONA II	
Illuminance (white)	Up to 280.000cd/m² (or 880.000 Lux on top surface)
Available module length	170 mm to 1360 mm in steps of 170 mm
LED colors	White (5500 Kelvin or 3500 Kelvin) Red (632 mm) Green (520 nm) Blue (452 nm) IR (850 nm and 940 nm) UV (395 nm)
Ports	One LED channel per 170 mm segment I²C port for temperature control and identification
Cable length	Standard length 2.5 m or 5 m Up to 15 m or drag chain cable on request
Protection class	IP 54
Operating temperature	0°C to + 70°C (housing temperature)
Certifications	CE, FCC complient, RoHS

CONTROLLER XLC4	
Input voltage	24 Volt DC +/- 10 %; approx. 3.5 amps per used channel for full operation
Output	4 current controlled outputs, from 0.2 amps to 1.8 amps Output power 80 watt per channel and max. output voltage up to 47 volts
Controlling	RS232; RS485, USB, Ethernet Analog input 1-10 Volt and PWM interface
Protection class	IP 40
Operating temperature	0°C to + 50°C (housing temperature)
Certifications	CE FCC compliant RoHS

Global network of distribution partners

Australia/New Zealand

Atlantek Vision Pty. Ltd.
Tony Weir
12 Lillian Road
Annangrove, NSW 2156
Australia
Phone: +(61) 96792870
Fax: +(61) 96792875
eMail: afw@atlantek.com.au
Internet: www.atlantek.com.au

Brasilia

Infaimon S.L.
Av. Doutor Heitor
Nascimento 196
13140-695 Paulinia - SP
Brasilia
Phone: +(55) 19 25 13 04 50
Internet: www.infaimon.com
Argentina, Bolivia, Chile, Columbia,
Costa Rica, Paraguay, Peru, Uruguay
and Venezuela.

China

Beijing Microview Science and Technology Co., Ltd
6th floor, Building A No. 28th of Shangdi West Road, Haidian district, Beijing, China P.R. China
Phone: +(86) 10-82600088-6821
Fax: +(86) 10-82600189
Mobile: +(86) 18500191331
eMail: sales@microview.com.cn (Sales)
eMail: support@microview.com.cn
Internet: www.microview.com.cn

Shanghai Sage Intelligent Technology Co., Ltd
Room 113, Buliding B, No.599, Gaojing Road, Qingpu District, Shanghai, China, 201702 P.R.China
Phone: +(86) 21-39882618
Mobile: +(86) 13761178979
Fax: +(86) 21-39882619-808
eMail: sales@sageimage.com
Internet: www.sageimage.com

Germany

Chromasens GmbH
Sales Germany & Worldwide
Max-Stromeyer-Str. 116, 78467 Konstanz
Phone: +(49) 7531 876-0
eMail: sales@chromasens.de
Internet: www.chromasens.de

Polytec GmbH
Polytec-Platz 1-7, 76337 Waldbronn
Phone: +(49) 7243-604-1800
Fax: +(49) 7243-69944
eMail: bv@polytec.de
Internet: www.polytec.com

India

Menzel Vision & Robotics Pvt Ltd.
Mr. Anish Soneja (CEO)
4, A-Wing, Bezzola Complex, Sion Trombay Road, Chembur Mumbai, Maharashtra - 400 071
India
Phone: +(91) 2267993158 / 25292972
Fax: +(91) 2267993159 / 66466118
eMail: sales@menzelrobovision.com
Internet: www.menzelrobovision.com

Lucid Imaging Pvt Ltd.
15/A, 2nd Floor, 9th Main Rd, 5th Block,
Jayanagara Jaya Nagar, Bengaluru,
Karnataka 560041, Indien
Phone: +(91) 80 2244 8252

Israel

Sela Electronic Systems Ltd.
Mr. Moti Sela
3, Habarzel St. Ramat Hachayal
Tel-Aviv
Israel
Phone: +(972) 364 800 61
Fax: +(972) 364 799 63
eMail: moti@selasys.com

Japan

AIC, Inc.
Mr. Shigeo Yoshikawa
2-17-19, HF Shin-Yokohama Bldg., 4F
Shin-Yokohama, Kouhoku-ku, Yokohama,
Japan 222-0033
Phone: +(81) 45 548 8567
Fax: +(81) 45 548 8568
eMail: contacts@aicvision.jp
Internet: www.aicvision.jp

Symco Corporation
Mr. Yasumi Akatsuka
3-9-18, ShinYokohama, ShinYokohama TECH
Bldg., No. B, 7th Floor Kouhoku-ku,
Yokohama-shi, Kanagawa,
Japan 222-0033
Phone: +(81) 45 594 8356
eMail: sales@symco.co.jp
Internet: www.symco.co.jp

Canada

Cooper Vision Technologies Inc.
Kevin Cooper
PO Box 35, Greely, Ontario, K4P 1N4
Canada
Phone: +(1) 888-621-4603 (Toll Free)
Fax: +(1) 613-821-4673
eMail: Kevin.Cooper@Covistech
Internet: www.covistech.com

Korea

Image Focus
Mr. Ho-Keung Lee
Gwangmyeong SK Technopark D-dong 804 ho
Haan-ro 60, Gwangmyeong-si
Gyeonggi-do, South Korea
Phone: +(82) 2 6112-2770
Fax: +(82) 2 6112-2774
eMail: sales@imagefocus.co.kr
Internet: www.imagefocus.co.kr

CYLOD Imaging Co., Ltd.
9F. Dongwon Bldg ,333, Yeongdong-daero,
Gangnam-gu, Seoul, Korea, Postal code 06188
Phone: +(82) 707018-0720
Fax: +(82) 707016-0720
eMail: info@cylod.com
Internet: www.cylod.com

Mexico

Infaimon S.L.
Hac. Chintepec, 110-4
Col. Ex Hacienda El Jacal
76180 Querétaro, Qro.
Mexiko
Phone: +(52) 442 215 1415
Internet: www.infaimon.com

Portugal

Infaimon S.L.
Rua de Viseu, 43
3800-280 Aveiro
Portugal
Phone: +(351) 234 312 034
Internet: www.infaimon.com

Singapore

Vital Vision Technology Pte Ltd
140 Paya Lebar Road
#10-21 AZ@Paya Lebar
Singapore 409015
Phone: +65-6702-6207
Fax: +65-6702-7206
eMail: sales@v2tech.com.sg

Spain

Infaimon S.L.
Vergós, 55
08017 Barcelona
Spain
Phone: +(34) 93 252 57 57
Fax: +(34) 93 252 57 58
eMail: infaimon@infaimon.com
Internet: www.infaimon.com

Infaimon S.L.
Ribera del Loira, 46
28042 Madrid
Spain
Phone: +(34) 902 46 32 46
Internet: www.infaimon.com

Taiwan

Opticks Technology
1 F, No.13, Ln.133
Zhongyang Rd.
Xindian Dist.
New Taipei City 231
Taiwan (R.O.C.)
Phone: +(886) 2-2219-2669
Fax: +(886) 2-2219-2676
eMail: steven.lin@opticks.asia
Internet: www.opticks.asia

Nevis Co., Ltd.
10 F, No. 655, Bannan Rd.
Zhonghe Area
New Taipei City 23557
Taiwan (R.O.C.)
Phone: +(886) 2-2226-9796
Fax: +(886) 2- 2226-6586
eMail: nelson@nevis.com.tw
Internet: www.nevis.com.tw

USA

North Coast Technical, Inc
8761 Mayfield Rd, Suite 302
Chesterland, OH 44026
USA
Phone: +(1) 440729-7540
Fax: +(1) 440729-7546
eMail: dsexton@nctechsales.com
Territory: States of DC,MD, VA , OH,
MI, IN, KY, WV, IL, WI, MN, MO, & IA,
Western PA Zips 15000-16899