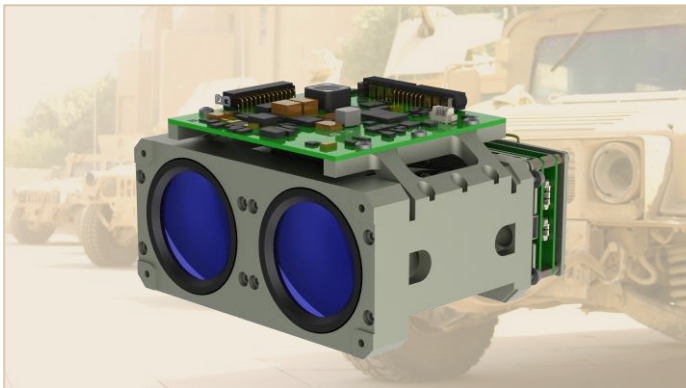


# Open Frame DUAL/340 Full HD

3,2 MP CMOS-GS day/night camera system

Datasheet



## Features

- 3,2 Mega Pixel for each camera
- Night vision mode
- Continuous total 8x digital zoom
- Two bore sighted cameras in one frame unit
- HD-SDI and Composite output
- Digital image stabilisation
- Designed for tracked vehicle vibration profile

## Description

The Open Frame DUAL/340 consist of two camera modules in one frame unit. Both camera modules consist of a 1/2" electronic day/night CMOS camera system with integrated FOV-configurable lens, designed to deliver high performance images.

The cameras are electronic day/night cameras, meaning they can automatically switch between colour and monochrome operation depending on the light level.

## Bore sight

The two cameras are optically bore sighted to 0.1mrad in order to secure the optical axis' are aligned between the two cameras.

## Build in ALaRs

ALaRS is the abbreviation of Automatic Light and Resolution system, which optimizes the light regulation and resolution, resulting in an improved image quality.

## Conducted cooling

The Dual camera uses conducted cooling to remove heat from the sensor. The main benefit of this is that it reduces the noise from the sensor thereby providing a better video image, particularly in low-light conditions.

## Digital image stabilization

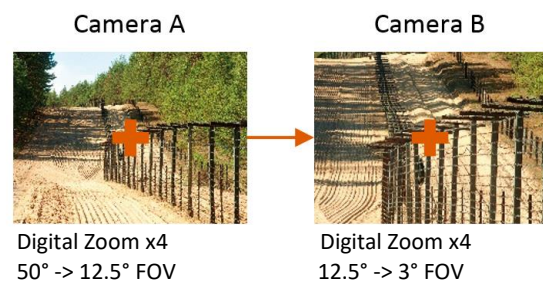
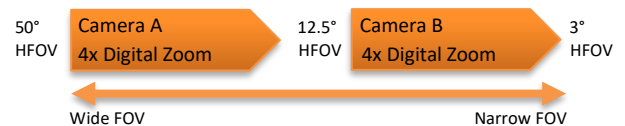
Advanced image processing algorithms for stabilizing the image is integrated into the core of the camera to ensure the best performance without increased image delay.

## Gain higher resolution by using both cameras' digital zoom

The resolution decreases the more you use of digital zoom. It is therefore an advantage to use only 4x digital zoom. The cameras have different FOV's, enabling the user to "continue" zooming in on an object, with a higher resolution, by switching between the two cameras.

For example, camera A can be set to 50° HFOV where you zoom with 4x digital zoom, then the HFOV will be app. 12,5°. Camera B is set to 12,5° HFOV. When using 4x digital zoom on camera B you end at app. 3° HFOV.

See illustration below.



## Digital Noise Reduction (DNR)

The Digital Noise Reduction function in the Dual camera analyses the video image and reduces the noise, particularly in low-light conditions. The analysis is based on 2 and 3-dimensional algorithms.

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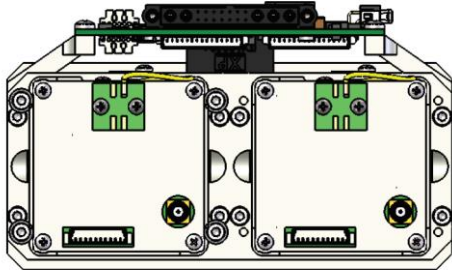
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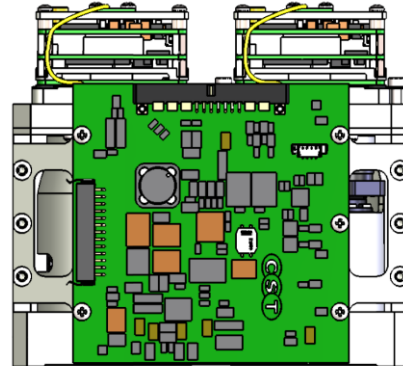
Datasheet



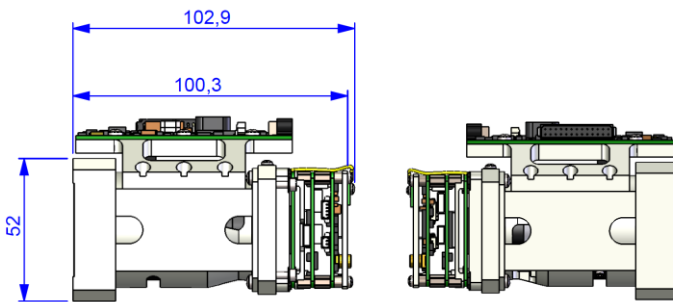
## Mechanical outline and dimensions



Rear view

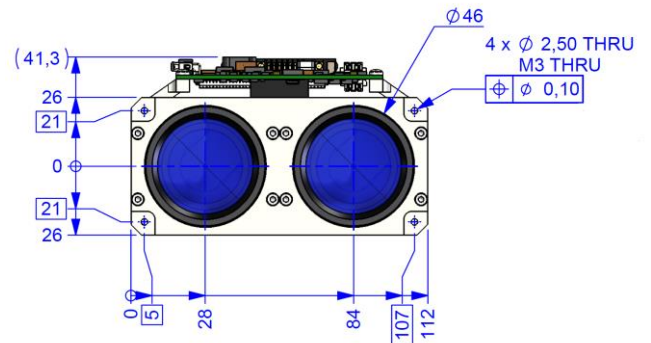


Top view



Side view 1

Side view 2



Front view

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## Specifications

Camera	A	B
<b>Image system</b>		
Sensor	High resolution 3,2Mp, High-sensitivity 1/1,8" colour CMOS with Global shutter	
Total Pixels	2010(H) x 1108(V)	
Effective pixels (H x V)	1944(H) x 1092(V)	
Image format	16:9	
Scanning system	Progressive scan	
Lens	f/1.6	f/1.6
HFOV	Configurable from 50° to 5,7° (factory setting)	Configurable from 50° to 5,7° (factory setting)
M.D.O.	2-5m ( FOV depending)	2-5m ( FOV depending)
Optical alignment between A&B	0.1mrad	
<b>Electrical specifications and functions</b>		
Video output, analogue	CVBS Video 1vpp 75 Ohm	
HD-SDI output 3G	1920 x 1080 50p/60p	
HD-SDIm output SDI	1920x1080-60i/50i/30p/25p	
Sensitivity 1	0.008 Lux @ AGC on /Sens-up off/ F1.6	
Sensitivity 2	Extended night mode with pixel binding 0,002Lux	
Spectral response	400-700nm without filter up to 1000nm	
Signal to noise ratio	48dB (TYP) (Gamma, Aperture, AGC OFF)	
Iris system	ALC-DC galvanometer	
Automatic Gain Control. range	Max 48db	
Gamma correction	0.45 / 1.0	
Automatic Integration mode	On / Off	
- Range	Up to X8	
IR control	Auto, Ext-Control	
White balance	ATW	
DNR	OFF/L/M/H	
Backlight Compensation (BLC)	On / Off	
Continuous Digital Zoom	Up to 8 x range / Zoom window position / Off	
Configuration	OSD menu and Serial UART interface baud 2400/4800/9600/57600/115200	
<b>Mechanical</b>		
Mounting holes	4xM3	
Overall dimensions (W x H x L)	112 x 67.3 x 89.4mm	
Net weight	< 1kg	
Video connector, VBS	Molex 53398-0671	
Video connector, YUV 4.2.2	Kyocera/Elco 04-6214-012-010-894+	
Power, data	Molex 53398-0671	
Global Connector	Harwin (Coax) M80-5L11442M7-03-313-02-313	
<b>Environmental</b>		
Operating voltage	15 to 36VDC (power supply ground isolated from camera mounting)	
Current consumption	800 mA	
Operating temperature	-40°C to +50°C	
Storage temperature	-40°C to +70°C	
Operating humidity	Within 85%, non-condensing	
Shock	11 msec. @ 30 G according to MIL STD 810F	
Vibration	MIL STD 810F, tracked vehicle 5.7G-rms, 45 min each direction MIL STD 810F, method 514.5, procedure 6	

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## **About Us**

CST - Copenhagen Sensor Technology A/S is a privately held Danish company specialising in the design and manufacture of high-performance electro-optical solutions for demanding battlefield and surveillance applications.

Founded in 2001, CST has rapidly grown to a mature organisation, capable of serving a global customer base. In modern facilities on the outskirts of Copenhagen, Denmark, CST houses R&D, production, QA and sales and marketing functions. With a collective experience in camera sensors, optics, electronics and software development, the highly skilled staff at CST is committed to creating rugged, durable and innovative electro-optical solutions.

CST is certified to ISO 9001:2015, which applies to the whole process flow of design, development, manufacturing and testing. Furthermore, ISO 10007:2003 configuration management standards are used as a guideline for design and development activities. CST products are not restricted by ITAR.

## **Customer and OEM solutions**

**CST has a long tradition of working closely with its customers, identifying unmet needs and creating solutions with sustainable value for the users.**

With a strong R&D base at the headquarters in Denmark, CST is able to provide mechanical, optical, software and hardware customisations while meeting the toughest requirements for military, homeland security and high-end surveillance applications.

Whether the need calls for a ruggedized high-precision zoom lens or a highly sensitive CCD/CMOS camera, or a complete system comprising lens, camera and advanced video processing, CST can offer a fast-track design process. Contact us to discuss your specific requirements. Together we can create a solution that provides the best price and performance ratio.

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