ALGE TIMING

THE SPORTS TIMING EXPERTS

Photo Finish OPTIc3

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OPTIc3

The photo finish system OPTIc3 takes over the technical market leadership. It has a recording rate of up to 30,000 frames per second (fps) and up to 2,016 vertical pixels. This makes it the perfect timing device for any sport that relies on good photo finish images and accurate results.

Features such as 2-D images, autofocus, automatic iris adjustment, etc. make the system easy to use. The VoIP allows communication with the starter and the timekeeper communicates without headset through the microphone and speaker of the PC.

Technical Facts

vertical resolution:	up to 2,016 pixels
scan rate (fps):	up to 30,000 frames per second
recording time:	unlimited, depends on PC hardware
timing:	temperature compensated quartz oscillator TCXO, +/-0.06 ppm at 25 °C (0.0002 s/h)
power supply:	PoE+ or 9 - 13.4 VDC
temperature	range: -20 °C bis +50 °C

Standard network
It is a simple way to connect almost every PC via Ethernet or WLAN.

Automatic Iris Adjustment
With the motor zoom of ALGE-TIMING you can access functions such as autofocus and automatic iris adjustment.

Live View
The camera image can be viewed via WiFi on a mobile phone or tablet.
This allows to adjust the lens of an OPTIc3 camera that is placed far away from a PC and has no motor zoom in an easy, fast and precise way.

2-D Image Adjustment
With the new 2-D image adjustment (maximum 2,016 x 360 pixels), you can accurately align the camera on the finish line in a very short time.

High-Speed Camera with 2-D Images
With 2-D mode with 100 Hz (100 fps) and full-screen mode, the OPTIc3-PRO is ideal for sports such as swimming and rowing. Since the OPTIc3 has a built-in timing device, exactly synchronized 100 frames per second can be guaranteed.

PC Software
The modern, powerful evaluation software for the OPTIc3 enables quick and easy results. It is also possible to record on one PC and to do the evaluation on another. Following operating systems are supported: Windows 7, Windows 8.x, Windows 10

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The photo finish system OPTIc3 is available in two versions

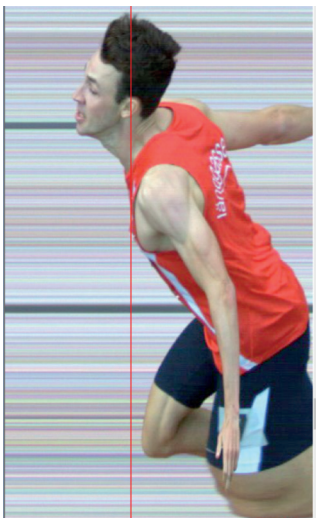
OPTIc3 Basic System

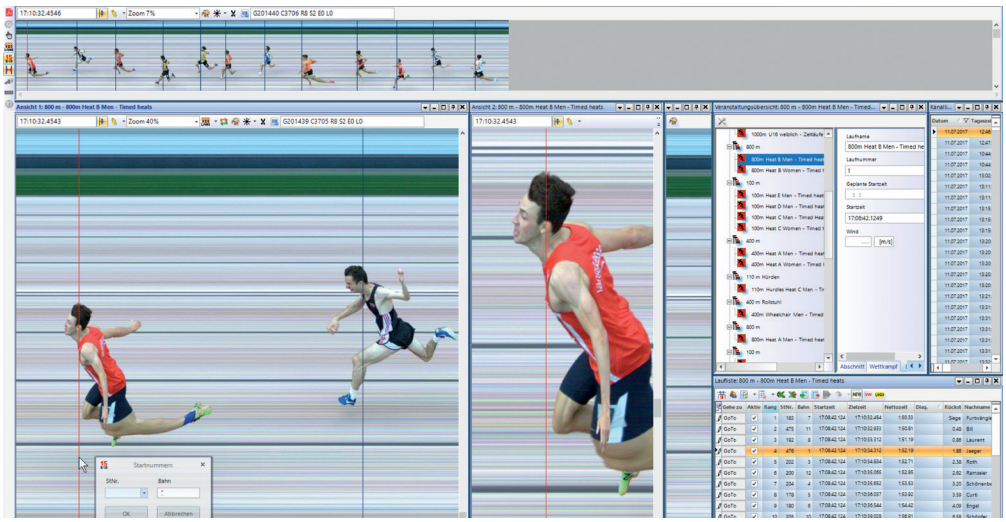
Photo finish system for the small budget with a recording rate of up to 3,000 frames per second and 1,360 vertical pixels. The features listed with the OPTIc3-PRO are not included in the basic system but it can be upgraded with all the PRO features.

OPTIc3-PRO

The professional photo finish system that leaves nothing to be desired. The following features are integrated:

- high-speed recording: up to 30,000 fps
- high resolution: 2,016 pixels vertical resolution (48 % more than OPTIc2)
- eXtremLuX: various technologies for image improvement under bad light conditions
- motion detection: automatic recording with motion detection
- integrated WTN: wireless impulse and data transmission
- high-speed camera: It is possible to record 100 frames per second in the 2-D mode with a resolution of 1,024 x 768 or 360 x 2,016 pixels. The proven IDCam software is available for this function.





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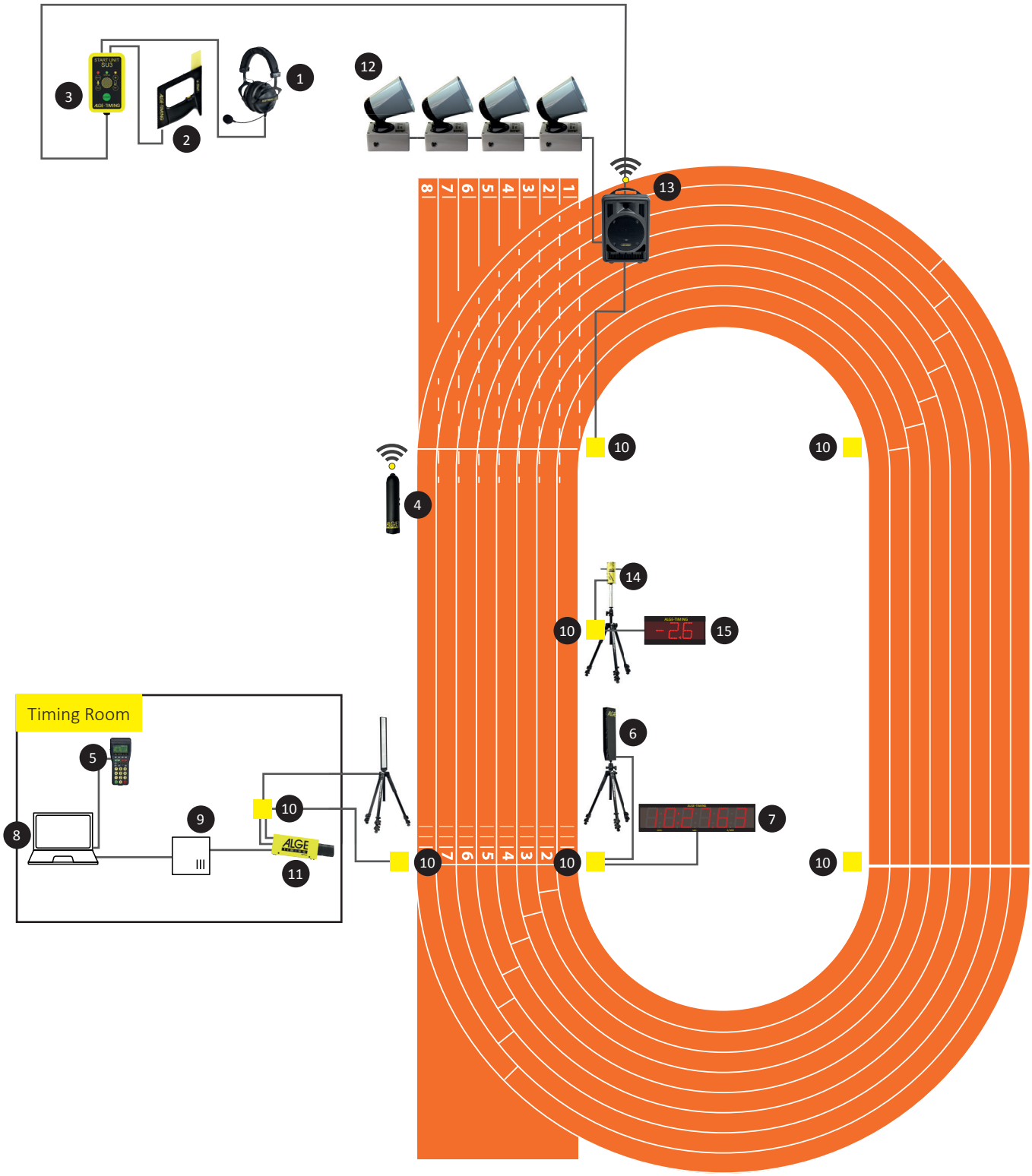
OPTIc3 – Example: Track & Field



1 HS3-2
2 e-Start
3 SU3
4 WTN-PB
5 TIMY3 W for WS2
6 RLS3c
7 Display Board Time
8 PC-OPTIc3
9 PoE
10 Stadium Cabling
11 OPTIc3
12 BANG-SPK
13 BANG2
14 WS2
15 Display Board Wind

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OPTIc3 - Example: Track & Field

No matter what size a track & field event is, ALGE-TIMING can provide the complete equipment for its execution. The system on the left is the basic system for a track competitions in the stadium. The system contains a photo finish camera OPTIc3 and a photocell for the finish. The start is executed by an electronic start gun and a loudspeaker.

The starter can communicate with the timing operator through the headset. The wind gauge is positioned at the 50 meter mark next to the sprint track. The wind gauge terminal Timy3 W is connected to the photo finish PC so that measuring the wind is controlled automatically by the photo finish. The unofficial winning time is shown on the display board at the finish.

1 **Headset HS3-2**
for communication with timer and for oral commands via BANG2

2 **Electronic Start Device e-Start**
start impulse transmitter (replaces start gun for starter) with integrated flash light for cable connection to BANG2 and timing system

3 **Start Unit SU3**
speech amplifier for communication through headset

4 **Radio Push Button WTN-PB**
radio push button for triggering false start signal

5 **Terminal Timy3 W**
terminal for wind gauge

6 **Threefold-Photocell RLS3c**
with three photocells
integrated in one case to control the photo finish recording

7 **Display Board Time**
numerical LED display board
(e. g. D-LINE250-O-6-E0)

8 **PC for OPTIc3**
evaluation of the photo finish with software OPTIc3.NET

9 **Power over Ethernet PoE**
power supply for the camera over Ethernet cable with PoE+

10 **Permanent Stadium Cabling**

TB2 F	connection box for permanent wiring in the finish house
TB2 A-E	connection box for permanent wiring in cable ducts A to E
TB2 A-E-RJ	connection box for permanent wiring in cable ducts A to E with Ethernet jack
TB W	connection box for permanent wiring in cable duct for wind

Mobile Stadium Cabling

TBM F2	connection box for mobile wiring in the timing room
TBM A-E	connection box for mobile wiring in the infield

11 **Photo Finish OPTIc3**
photo finish camera OPTIc3 in 2 versions:
· OPTIc3 basic system
· OPITc3-PRO professional system with additional features

12 **Speaker System BANG-SPK**
horn speaker as extension
for BANG-series

13 **Speaker System BANG2**
electronic start system consisting of a mobile loudspeaker with integrated amplifier; usable with wire connection or radio connection to the timing device

Wind Gauge WS2
14 for measuring the wind velocity for runs and long jump

Display Board Wind
15 numeric LED display board to show the windspeed

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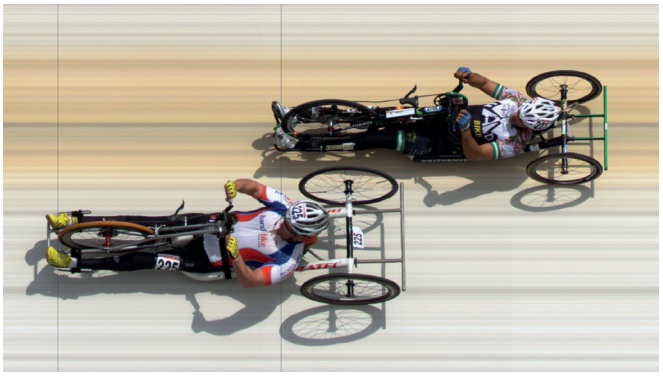
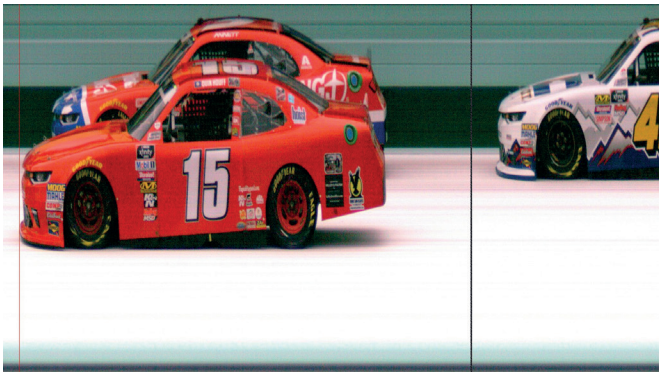
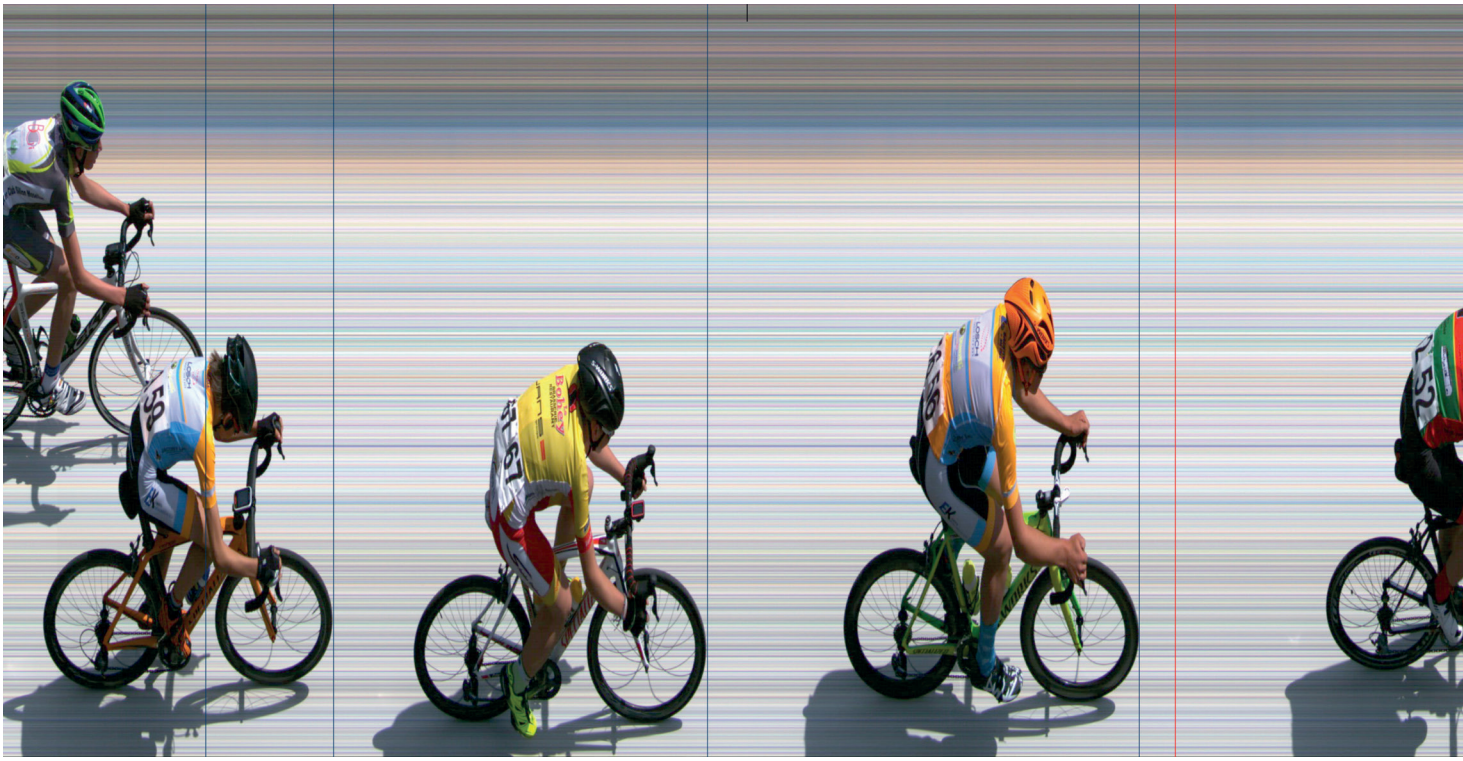
OPTIc3

The OPTIc3 is used for sports where several participants reach the finish at the same time. In addition, the OPTIc3 is the ideal device to monitor the finish arrival. When discussing a result, the picture of the OPTIc3 shows the proof. Here the saying is true: „ A picture is worth a thousand words“.







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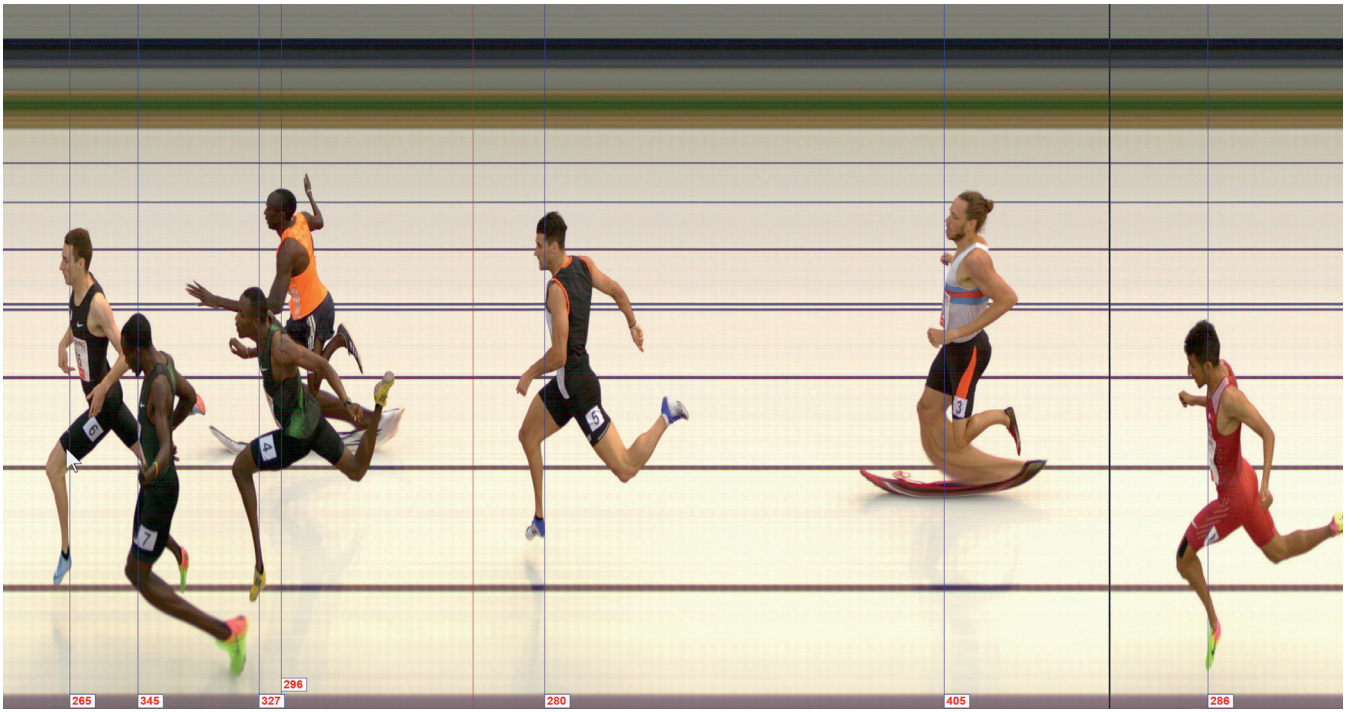
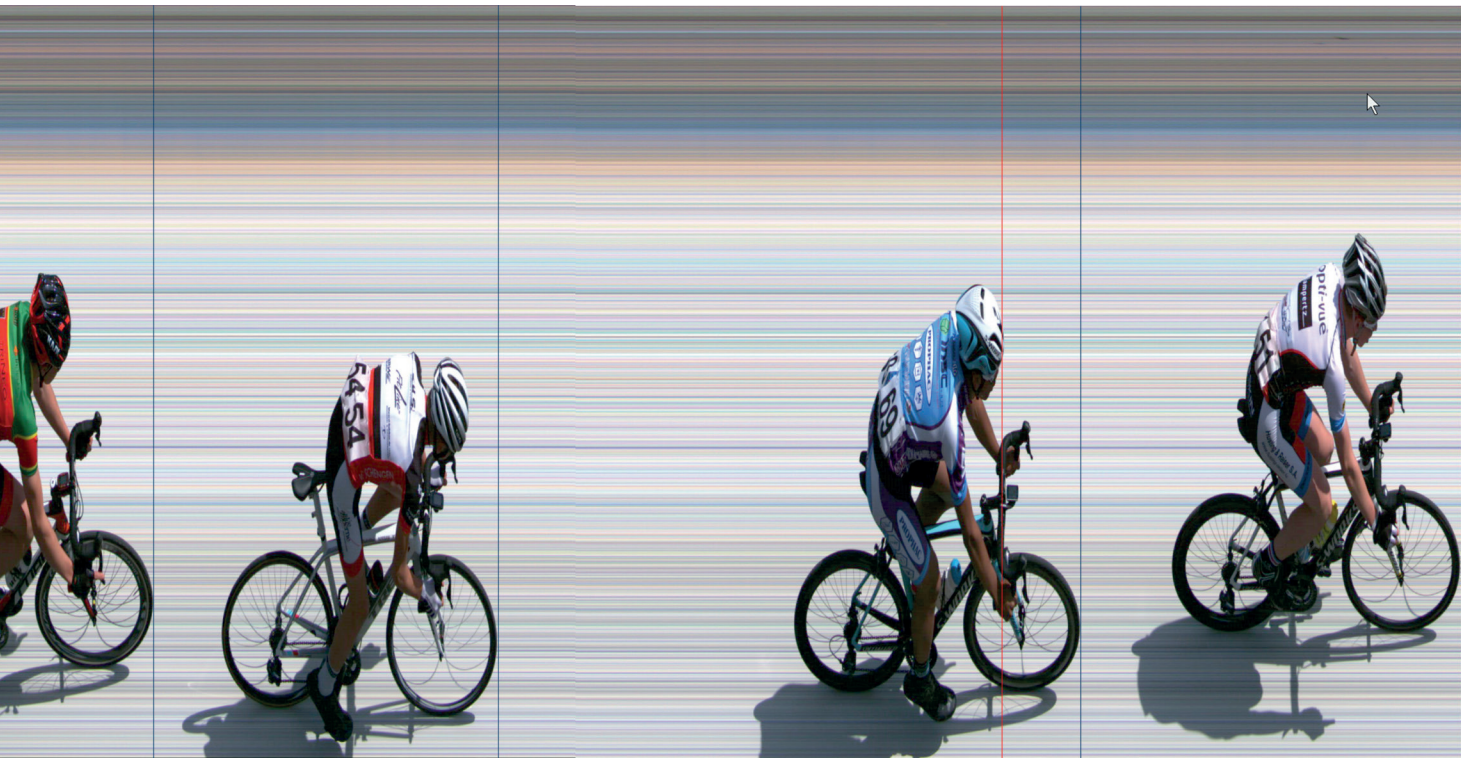
Sports:

- Track and Field
- Cycling
- Horse Racing
- Motorsport
- Rowing
- Canoe
- Dragonboat
- Inline Skating
- Snowboard
- Ski Cross
- Ski-Alpine
- Cross Country Skiing
- Biathlon
- Short Track
- Speed Skating

Special Solutions:

- Swimming
- Air Race
- Drone Racing
- Crashed Ice
- Timber Sports





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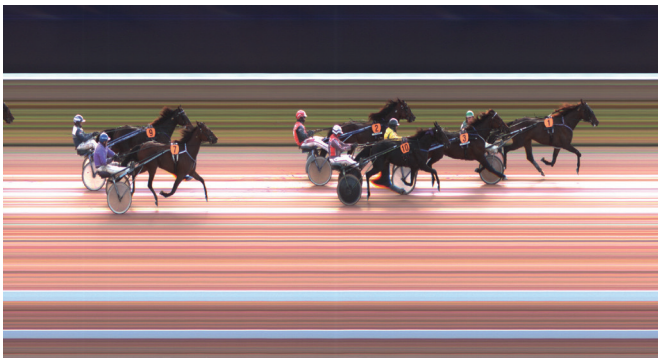
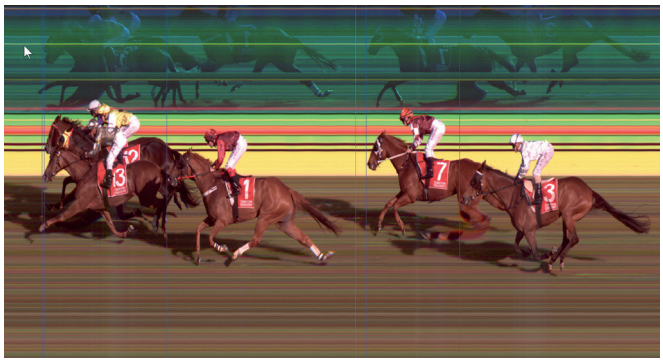
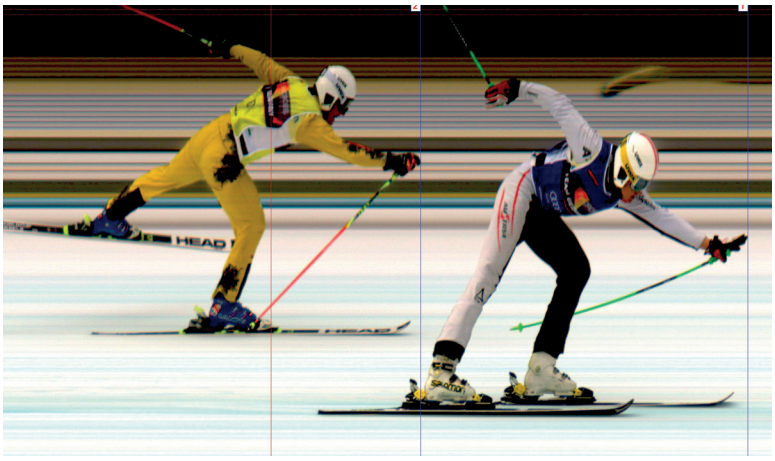


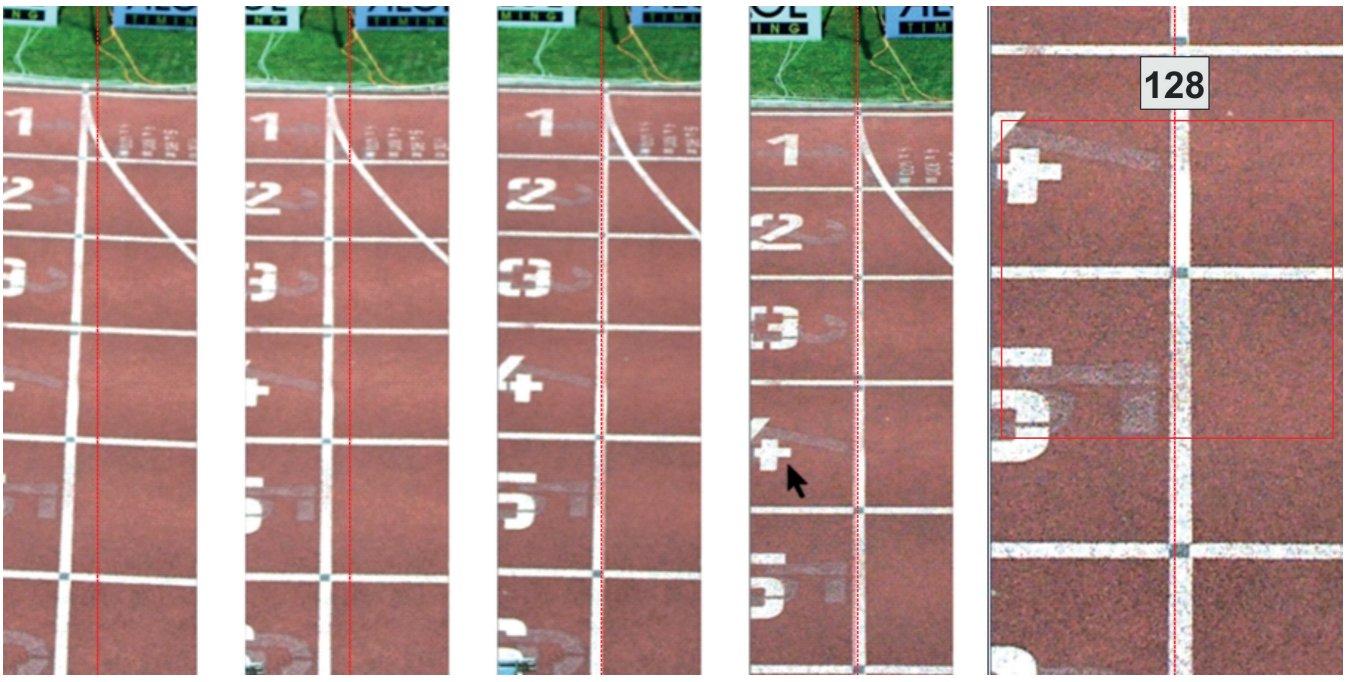




Easy camera setting in 2-D mode

The OPTIc3 camera is switchable to a 2-D preview video image mode. This video preview displays a live 2-D image of the camera on the PC monitor. A vertical red line overlays the 2-D preview image.

This line represents the recording line in the line scan mode mode (competition mode). It allows an easy alignmet and setup of the photo finish camera to the finish line. With the autofocus function, the focus can also be adjusted in the 2-D image.



Enlarged finish image by the IDCam

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OPTIc3 Accessories

The photo finish system OPTIc3 can be extended as desired with practical accessories or equipped for specific requirements of sport events. In addition to the standard accessories, there are also unique special solutions that can be customized.

Zoomlens Z75
manual zoom lens
C-Mount ⅔ “, 12.5 - 75 mm / F1.2

Motor Zoom MZ75C
control of focus, zoom and brightness from the PC
C-Mount ⅔“, 12.5 – 75 mm / F1.2

Motor Zoom MZ48C
control of focus, zoom and brightness from the PC
C-Mount ½“, 8 - 48 mm / F1,2

Motor Zoom MZ160G
control of focus, zoom and brightness from the PC
C-Mount ⅔“, 16 – 160 mm / F1.8

Wide-Angle Lens L8.5
C-Mount ⅔“, 8.5 mm / F1.3

Radial Polarizing Filter PF55
(on request) polarization filter to attenuate reflections (e.g. from water)

Gearhead 410
three-dimensional, mechanical gearhead for a precise adjustment of the camera to the finish line

Gearhead 410-E3
three-dimensional, electrical gearhead for a precise three-dimensional adjustment of the camera to the finish line directly from the PC (no further cabling necessary)

Tripod STATIV6
tripod with a maximum height of 3.66 m

Tripod TRIMAN
standard tripod TRIMAN with a maximum height of 2.4 m

Tripod TRI-PRO
tripod TRI-PRO with a maximum height of 2.67 m

Weather Protection Cover WPC3-75
for OPTIc3 camera with the lenses Z75, MZ75C, MZ48C and L8.5

Carrying Case KL-OPTIc3
case with foam insert to transport and store an OPTIc3 system safely

Ethernet Cable K-RJ45G03
CAT6 patch cable with 3 m

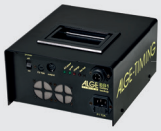
Ethernet Cable K-RJ45G10
CAT6 patch cable with 10 m

Ethernet Cable K-RJ45G20
CAT6 patch cable with 20 m

Cable Reel KT-RJ45G90
cable reel with 90 m CAT6 Ethernet cable for the OPITc3 (with this cable, the POE can also feed the camera)

Power over Ethernet PoE
power supply for the OPTIc3 camera via Ethernet cable (POE is included with the OPTIc3 camera - power supply 90 - 240 VDC)

Gigabit-SWITCH PoE+
Gigabit switch with 8 RJ45 sockets and integrated Power over Ethernet (PoE+)



Battery Backup BB1
battery power supply for camera (integrated 12 VDC battery with mains adapter)

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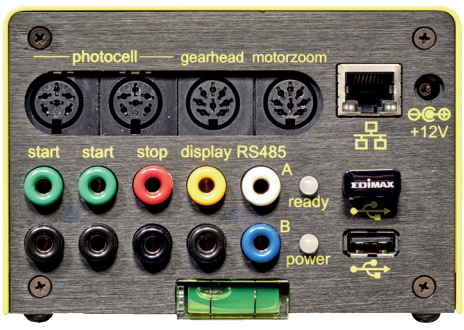
OPTIc3

Technical Data	OPTIc3	OPTIc3-PRO
Pixel (vertical):	1360 pixel	2016 pixel
Recording Speed (fps):	100 - 3,000 fps	100 - 30,000 fps
Voice over IP (VoIP):	optional	yes
Light Amplification eXtremLux:	optional	yes
Line Doubling:	optional	yes
Wireless Timing Network:	optional	yes
High Speed Video (100 pictures per second)	optional	yes
Sensor Type:	CMOS	
Time Base:	temperature compensated quartz oscillator TCXO: +/- 0.006 ppm at 25 °C (0.0002 s/h)	
PC-Connection:	Gigabit Ethernet / WLAN	
Lens Mount:	C-Mount / F-mount with adapter	
Distance Camera to PC:	CAT6 cable: up to 100 m Fibre Optic: up to 2000 m (with converter)	
Connection for Electronic Gearhead:	yes	
Option for ALGE-Motor Zoom:	yes	
Remote Control for Zoom:	yes (for ALGE-TIMING Motor Zoom)	
Remote Control for Iris:	yes (for ALGE-TIMING Motor Zoom)	
Remote Control for Focus:	yes (for ALGE-TIMING Motor Zoom)	
Autofocus:	yes (for ALGE-TIMING Motor Zoom)	
Automatic Brightness Adjustment:	yes (for ALGE-TIMING Motor Zoom)	
White Balance:	automatic and PC-software	
Gamma Adjustment	PC-software	
Recording Time:	unlimited, depending on PC-hardware	
Recording Speed Adjustment (fsp):	software (adjustable at any time)	
Timing Impulse Inputs:	3 (start, intermediate time, finish)	
Connection for Display Board:	RS232 or RS485	
USB-Interface:	2	
Recording and Evaluation:	possible on 2 different PC	
Transponder Integration:	optional	
Power Supply:	Ethernet with PoE+ or power supply (9 - 13.4 VDC)	
Tripod Thread:	3/8 inch	
Operating Temperature:	-20 to 50 °C	
Measurements (excluding lens):	180 x 120 x 80 mm (L x W x H)	
Weight (excluding lens):	1,5 kg	



Connections

2 x start input (banana socket)
1 x finish input (banana socket)
2 x DIN socket (3 input channels)
1 x display board RS232 (banana socket)
1 x display board RS485 (banana socket)
1 x motor zoom
1 x gearhead
2 x USB (e. g. for WLAN)
1 x RJ45 (Gigabit Ethernet)
1 x power supply (9 – 13.4 VDC)

MONITORING THE FINISH LINE

IDCam

The IDCam is a reliable and simple way to monitor the finish line. When an athlete crosses the finish line, a series of high-resolution pictures is taken and stored on the PC with the time of day for each image.

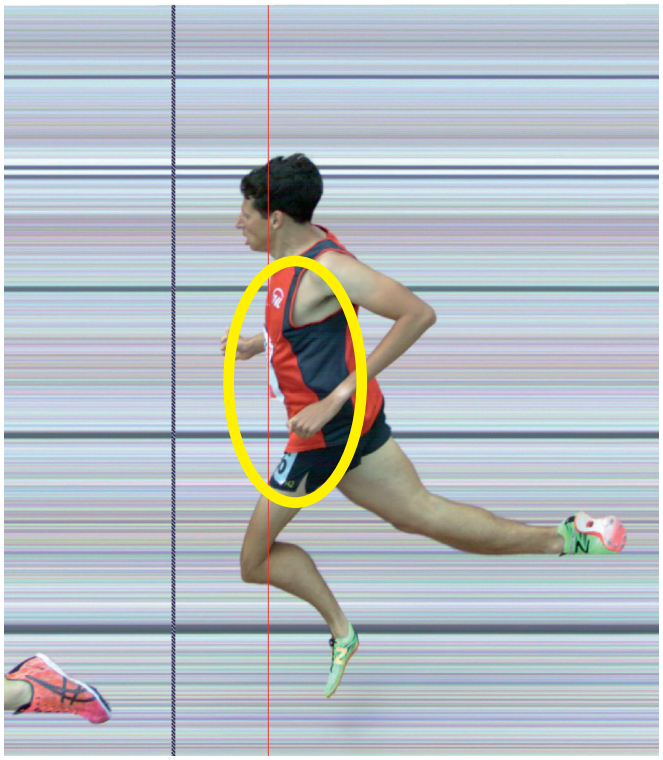


Photo Finish image from OPTIc3-PRO

ID-number 180 and side number 6 are not readable on the photo finish picture, but in the picture of the ID Cam the ID-number 180 and side number 6 are clearly visible (see image below).

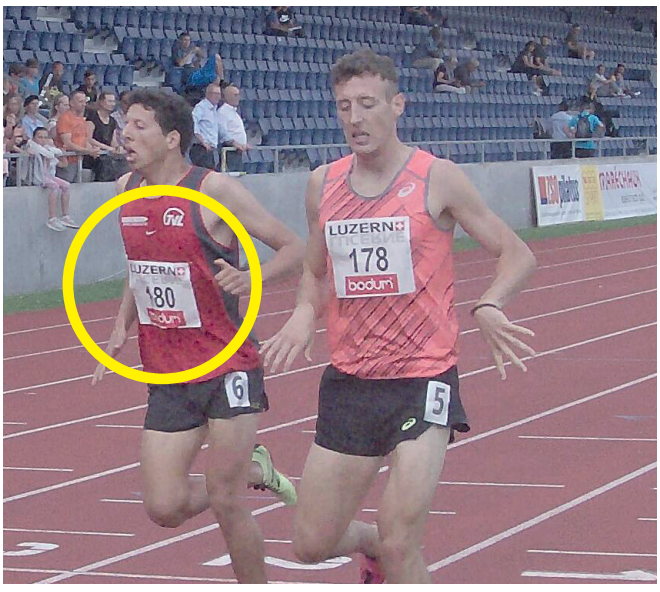
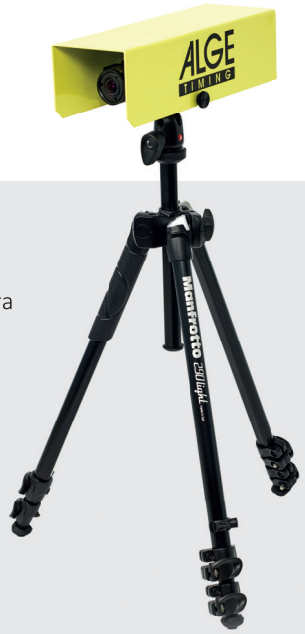


Photo from the IDCam



Scope of Delivery

- 5 megapixel network camera
- motorzoom with 4 - 8 mm for camera
- 3 m CAT5 cable K-RJ45G03
- 20 m CAT5 cable K-RJ45G20
- POE power supply
- PC software

IDCam with lens

POE

CAT5 Cable with 20 m

Optional Accessories

- Weather Protection Case WP-IDCam
- Tripod TRI128 or TRIMAN
- Socket Joint BHS
- Cable Reel KT-RJ45G90

Weather Protection Case WP-IDCam

Socket Joint BHS

Tripod TRI128

Supported Timing Devices

- TdC8001, TdC8000 and TdC4000
- Timy3, Timy2 and Timy
- Comet
- Timer S4
- Photo finish OPTIc2 and OPTIc3
- OPTIc3 in 2D mode
- manual recording mode via PC keyboard

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