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SEE THE FUTURE OF ENDOSCOPY



See the future of endoscopy

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INSPIRA™ EPK-i8020c video processor



i20c video endoscope series



SEE THE FUTURE THROUGH EVERY ENDOSCOPE GENERATION

INSPIRA

PENTAX Medical INSPIRA™ Video Processor

The bridge for legacy endoscopes to next level image quality.
The gateway to tomorrow's cutting-edge technology in diagnosis
and therapy.



INSPIRA EPK-i8020c

This is what the future looks like



Dual port

Upgrade the imaging of
your **legacy
endoscopes**



Future-proof for
**next generation
endoscopes**



Individual **user profiles**
customizable via
touchscreen



Full detail visualization
with up to **4K image
resolution**



Inspired by
#PENTAXMedicalTripleAim



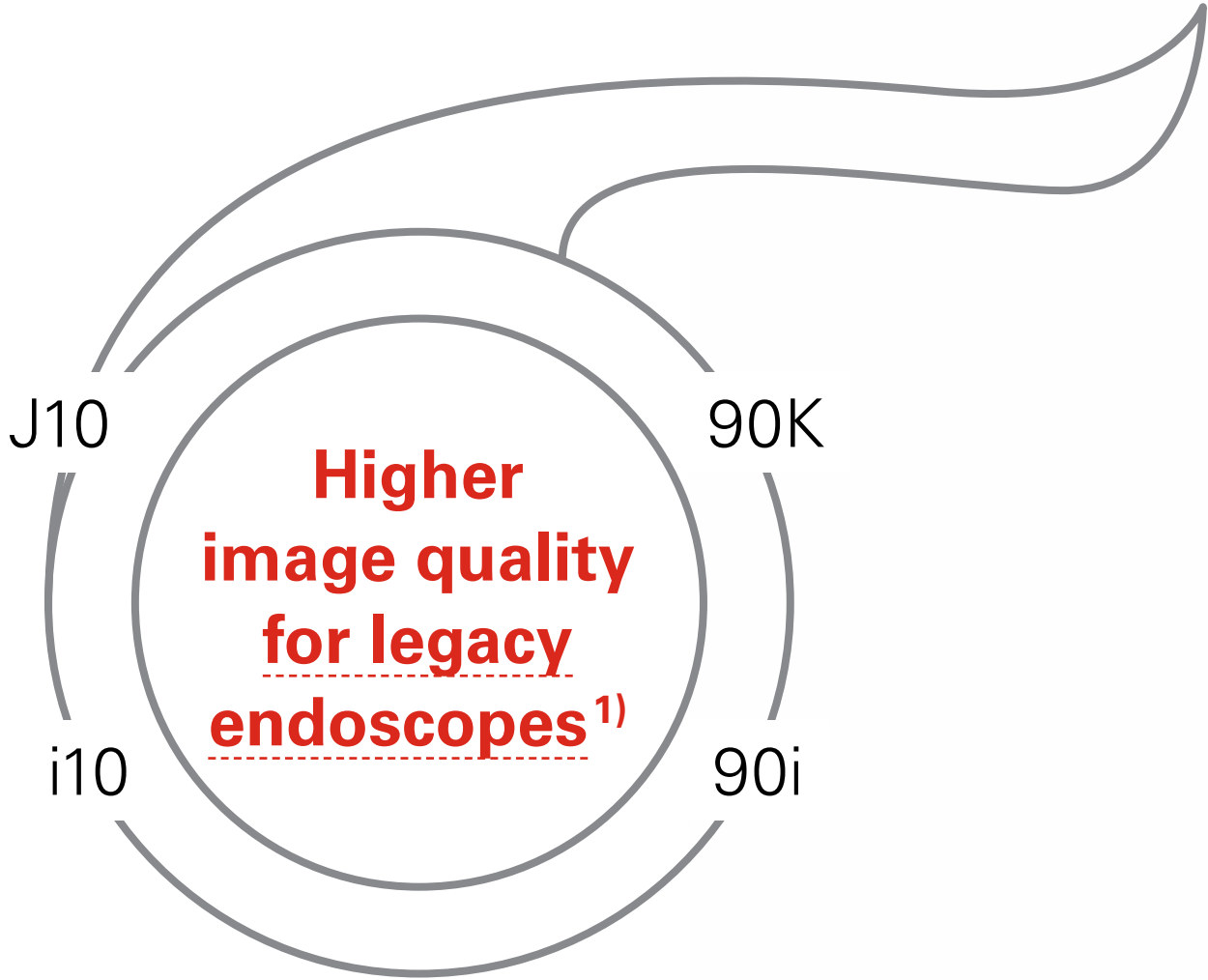
INSPIRA EPK-i8020c

This is what the future looks like



Connecting generations of endoscopes to INSPIRA

Extend your endoscope portfolio's life span
and protect your investments.



1) Compatible video endoscopes: 90K, 90i, J10, and i10 series; Not all models are compatible.
For details, contact your local PENTAX Medical service facility.



INSPIRA EPK-i8020c

This is what the future looks like



Boosting diagnostic and therapeutic capabilities in i10 and 90i series endoscopes



EC38-i10F2 colonoscope with INSPIRA



EG-2990i gastroscope with INSPIRA

Images courtesy by Prof Timo Rath, University of Erlangen, Nuremberg, Germany

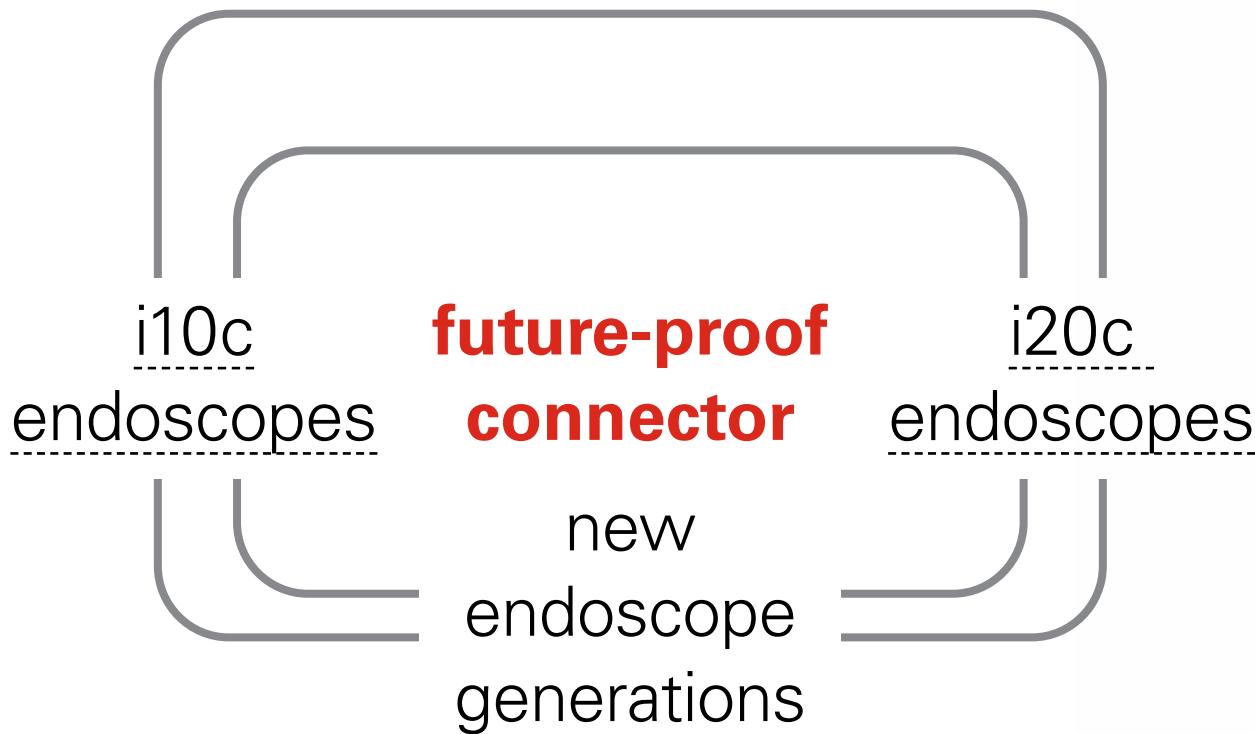
INSPIRA EPK-i8020c

This is what the future looks like



The gateway to the future of endoscopes

INSPIRA establishes a future-proof platform for the latest as well as coming endoscope generations.



INSPIRA EPK-i8020c

This is what the future looks like



Providing state-of-the-art imaging quality in i10c series endoscopes



EC38-i10cF2 colonoscope with INSPIRA



EG29-i10c gastroscope with INSPIRA

Images courtesy by Prof Timo Rath, University of Erlangen, Nuremberg, Germany

INSPIRA EPK-i8020c

This is what the future looks like



Touchscreen with customizable menu for individual user profiles



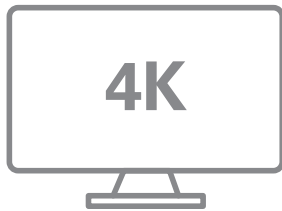
- All functions for your daily procedures are easily accessible via 7" **touchscreen**.
- You can **customize the screen**, defining buttons for most used features.
- Save your personal settings in one of the individual **user profiles**.
- Intuitive to use processor thanks to **smartphone like** touchscreen.
- Programmable **"End exam"** button to simplify end of procedure (transfer data, switch off pump, etc.)

INSPIRA EPK-i8020c

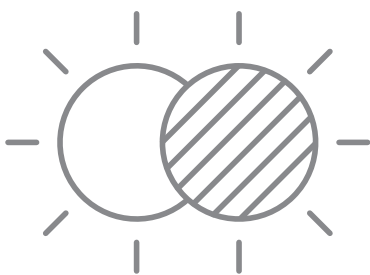
This is what the future looks like



Full detail visualization



Benefit from richly detailed imaging with **resolutions up to 4K**



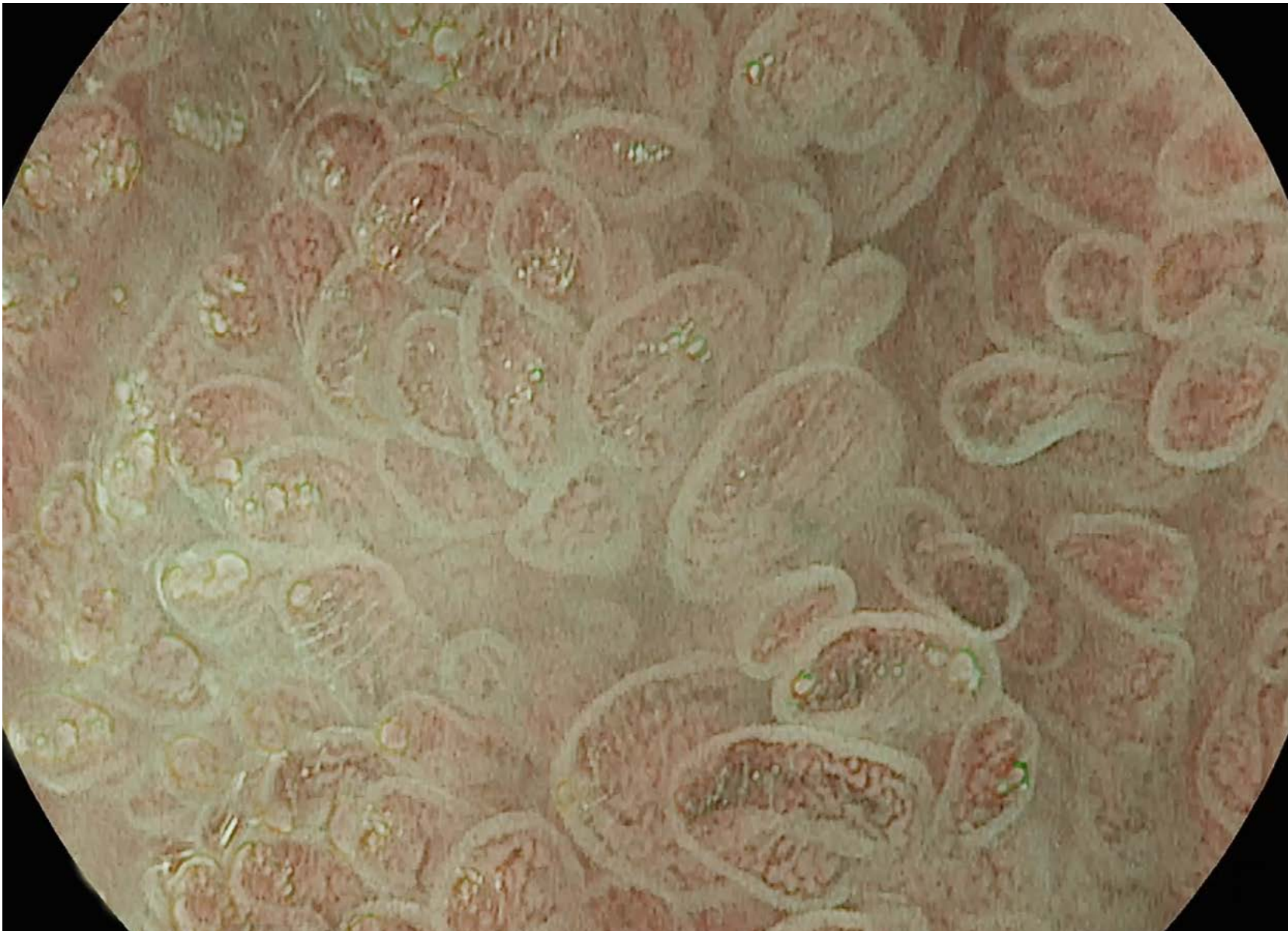
See **true colors and high contrasts** for better decisions with Auto HDR ¹⁾



State-of-the-art digital enhancement **with i-scan**

LED

5 LED lightsource for improved exam results



EC-3890FZi MagniView colonoscope with high magnification

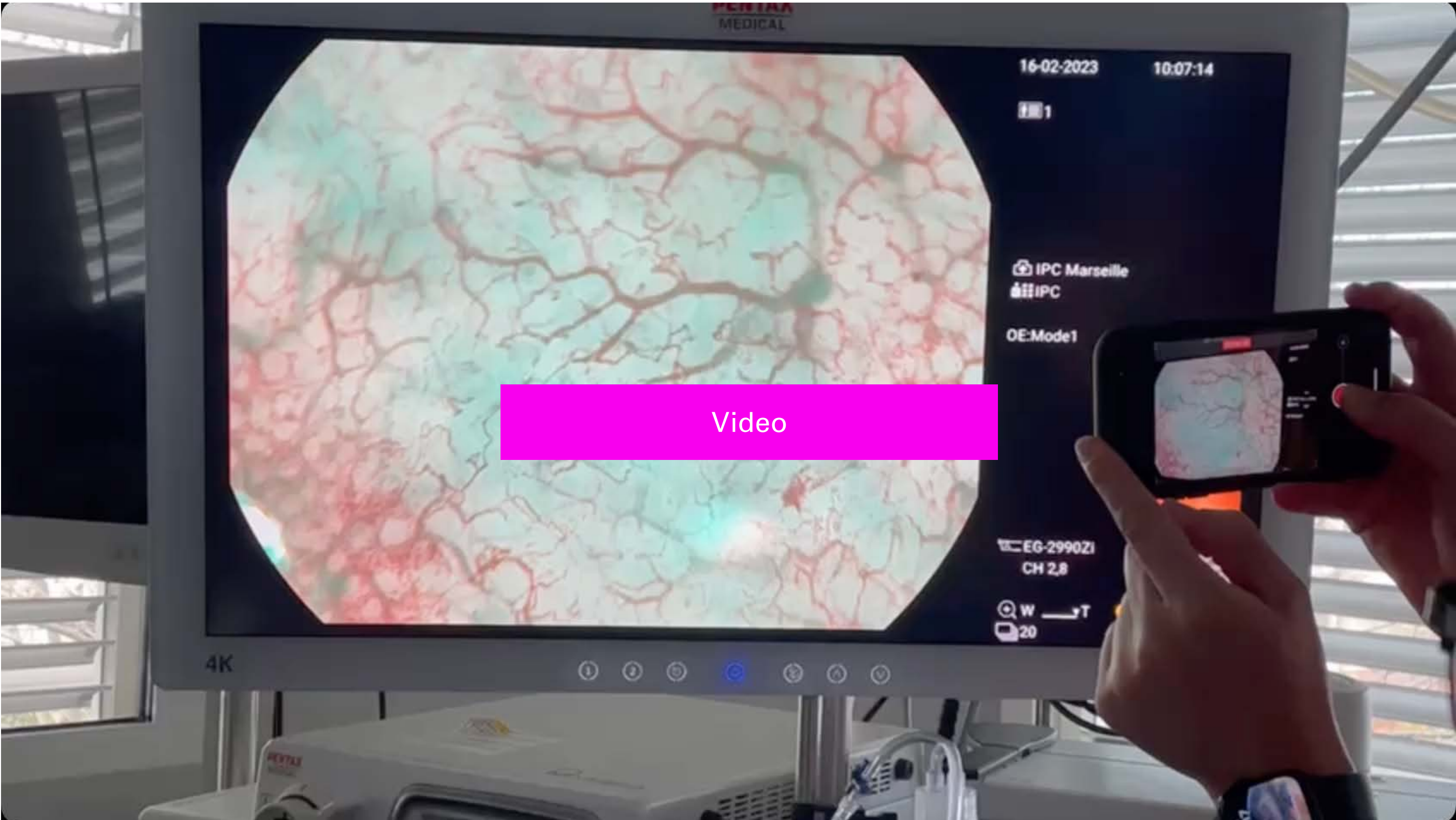
Image courtesy by Prof Timo Rath, University of Erlangen, Nuremberg, Germany
1) Auto-HDR available with i20c series video endoscopes, only

INSPIRA EPK-i8020c

This is what the future looks like



Benefit from richly detailed imaging with resolutions up to 4K



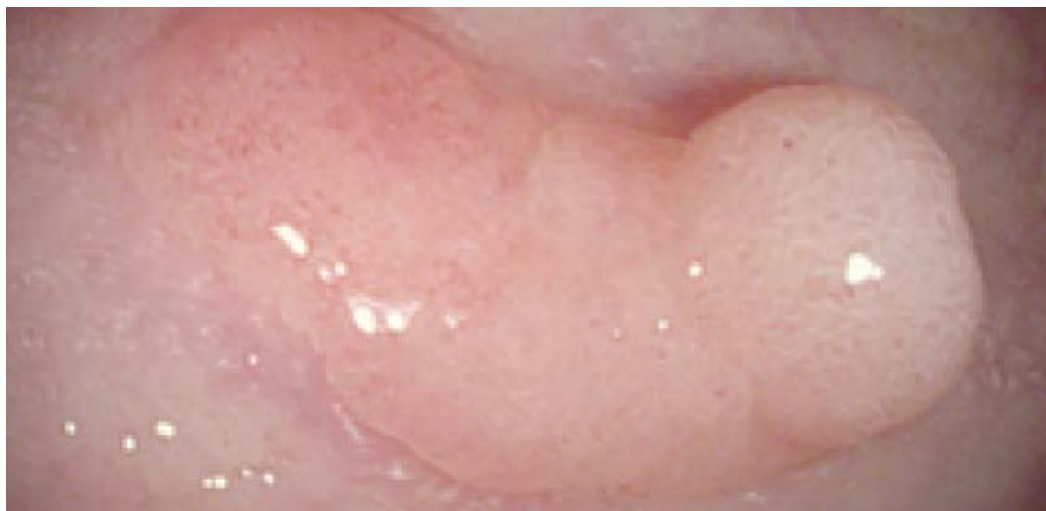
EG-2990Zi MagniView
gastroscope with high
magnification

Video courtesy by Dr Marc Giovannini,
Institut Paoli-Calmettes, France

This is what the future looks like

State-of-the-art image enhancement technology on board

The well renowned i-scan technology provides you with **clearly distinguishable images** of tissue and vessels.



i-scan 1 (surface enhancement – SE)



i-scan 2 (tone enhancement – TE)



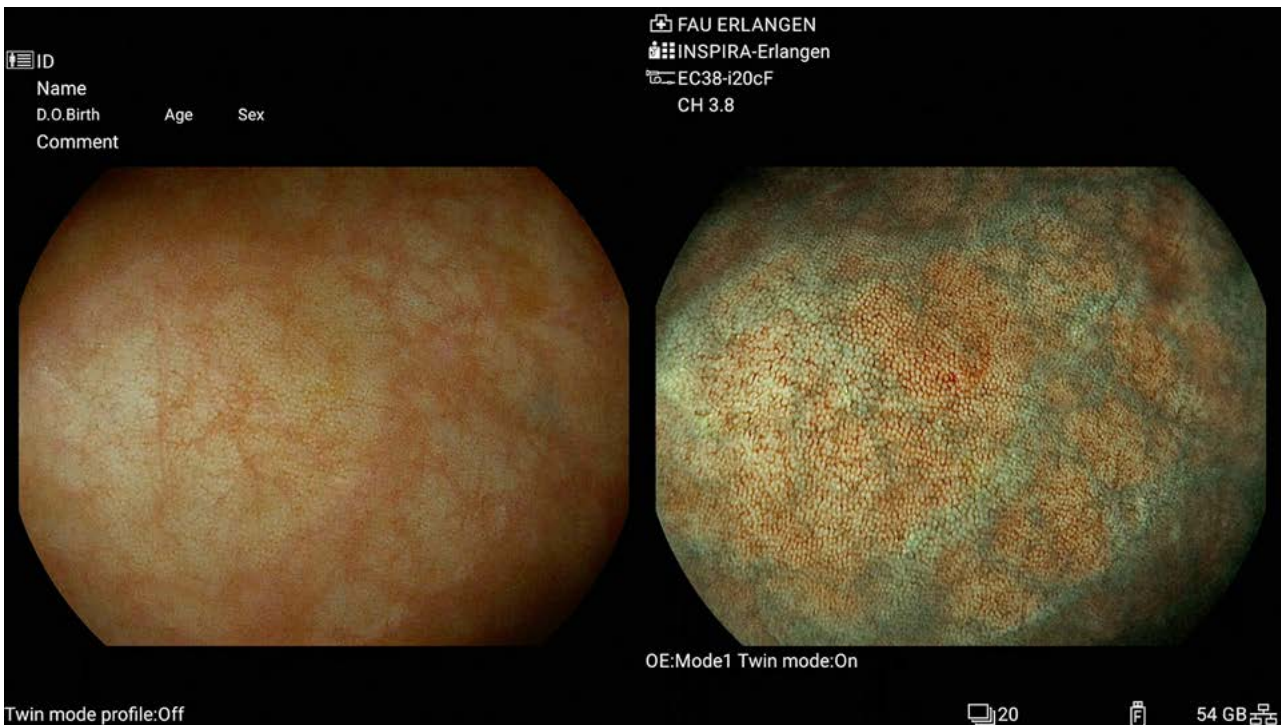
i-scan 2 (tone enhancement – TE)



i-scan 3 (optical enhancement – OE) Mode 1



For more information visit:
www.i-scanimaging.com



i20c endoscope with white light and i-scan OE Mode 1

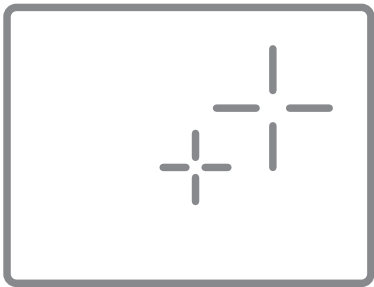
This is what the future looks like



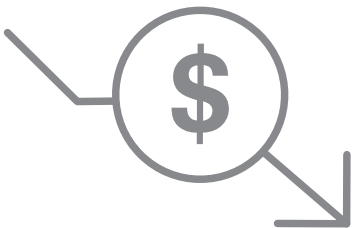
5 LED lightsource for improved exam results



The newly developed 5 LED supports you in diagnosis and management:



See realistic images with improved tissue and vessel assessment.



Reduce maintenance costs, as the service life of the LED is longer compared to common Xenon lamps.



EC38-i10 series colonoscope with INSPIRA

This is what the future looks like



PENTAX Medical Triple Aim



PENTAX Medical INSPIRA™ video processor is designed to boost diagnostic and therapeutic capabilities by providing **optimum image quality for all PENTAX Medical endoscopes¹⁾**. It paves the way for innovative technologies to improve clinical outcomes.

PENTAX Medical INSPIRA™ video processor combines cutting-edge functionalities in **one plug-and-play solution with intuitive usability.** The customizable graphical user interface helps to focus on what is really important: the patient.



PENTAX Medical INSPIRA™ video processor upgrades your legacy endoscope portfolio²⁾ to the latest imaging standards, **extending the life cycle of each endoscope** for greater sustainability. The system provides a future-proof platform for next generation medical solutions.

1) 90i, i10, J10, 90K, i10c and i20c series endoscopes
2) 90i, i10, J10, 90K and i10c series endoscopes Not all models are compatible. For details, contact your local PENTAX Medical service facility.

This is what the future looks like

INSPIRA helps you improve sustainability



PENTAX Medical aims to continuously improve the level of sustainability. The INSPIRA video processor allows you to **continue using the endoscopes of today** while upgrading their visualization performance. All this helps to improve sustainability by

- reducing waste volume,
- saving material resources,
- and avoiding energy consumption.



Light version of INSPIRA EPK-i8020c

Start your INSPIRA journey, step by step



Light version of INSPIRA with upgradeable capabilities

- ✓ Brighter, clearer HD imaging, bridging today's endoscopes to **next level image quality**
- ✓ **Easier set-up** and handling on customizable touchscreen
- ✓ **Future-proof** gateway to coming endoscopes with dual port

A brilliant basis to access next gen medical solutions with maximum flexibility – upgradeable anytime.

Upgrade key
OS-I23*



* PENTAX Medical DICOM & 4K Upgrade Key OS-I23

INSPIRA with all software options unlocked

- ✓ Full detailed visualization with up to **4K image resolution**
- ✓ Simplified patient data exchange through **DICOM** connection
- ✓ Brighter, clearer HD imaging, bridging today's endoscopes to **next level image quality**
- ✓ **Easier set-up** and handling on customizable touchscreen
- ✓ **Future-proof** gateway to coming endoscopes with dual port

Achieve excellence and be ready for coming innovations.

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SEE THE FUTURE OF GREAT VISION AND HANDLING

**PENTAX Medical i20c
video endoscope series**
Supporting procedures with
superior vision and ergonomics.



i20c video endoscope series

The next generation of endoscopes



Lightweight **EasyOn connector**, one-handed operation, waterproof for easy reprocessing



Stunning clarity and visibility with **highly detailed images**



TriDrive technology: Adjustable stiffness (colonoscopes only) adds to well proven TrueTorque™ and i-FLEX™



Outstanding maneuverability and accessibility due to **210° tip angulation** (up) also in i20c colonoscopes



Easier control during procedures due to new **ErgoFeel control body**, steering wheels and valves



Inspired by #PENTAXMedicalTripleAim



i20c video endoscope series

The next generation of endoscopes



Lightweight EasyOn connector, one-handed operation, waterproof for easy reprocessing



The **EasyOn connector** design was optimized for fast, one-handed and fail-safe operation.

Characteristic plug shape for **fail-safe connection**

Waterproof connector for an efficient reprocessing with **no need for soaking caps**

Release button enables **single-handed operation** and unplugging

Weight and size reduced connector for an **easier overall handling**



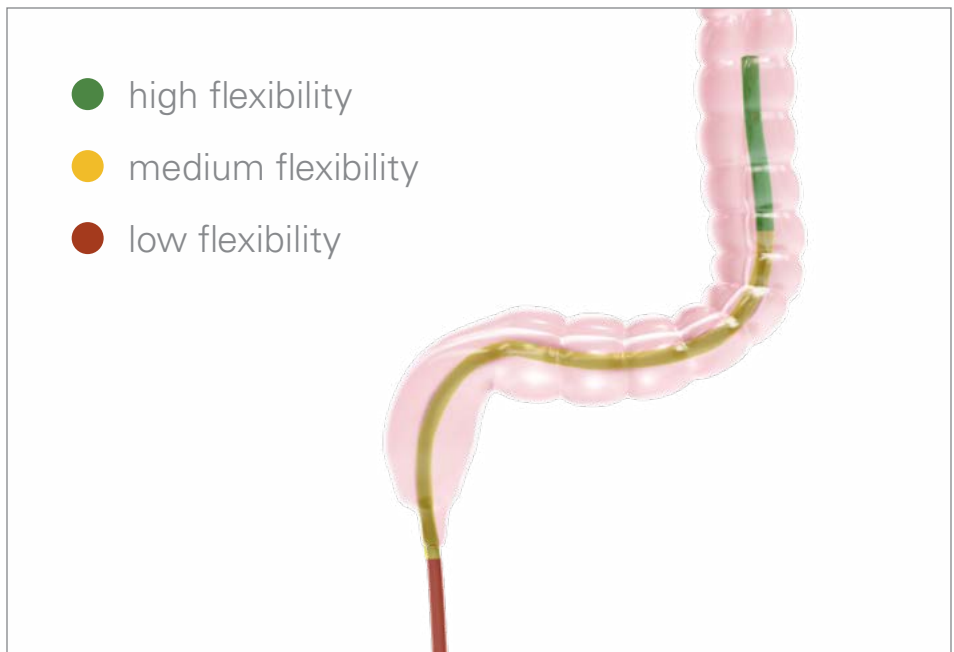
i20c video endoscope series

The next generation of endoscopes



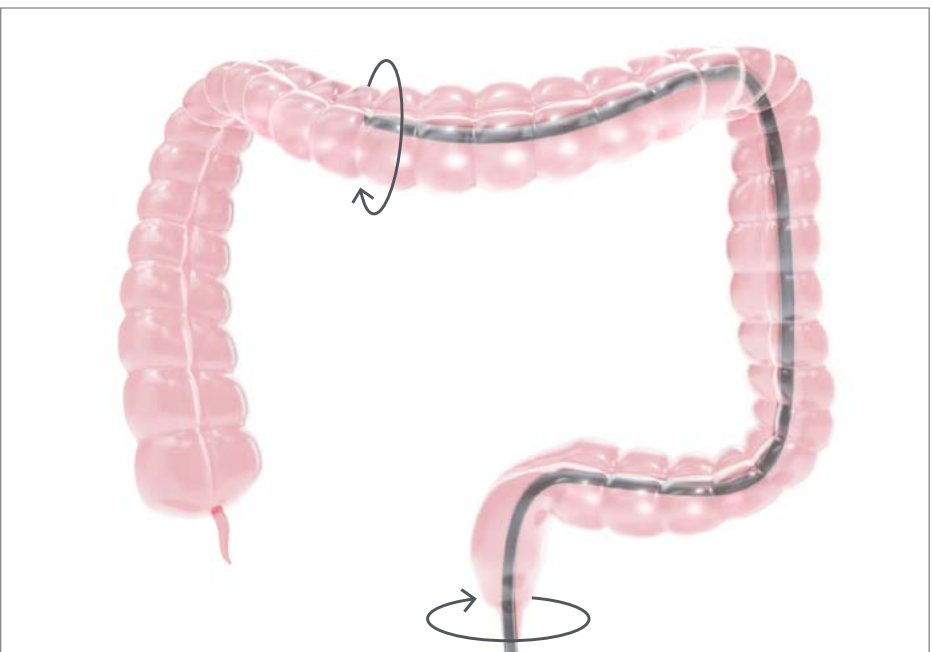
Colonoscopes with TriDrive technology insertion tube: i-FLEX™, TrueTorque™ enhanced by adjustable stiffness

The i20c colonoscopes support efficient endoscope advancement, designed to reduce loopings, provide direct torque and an overall improved maneuverability.



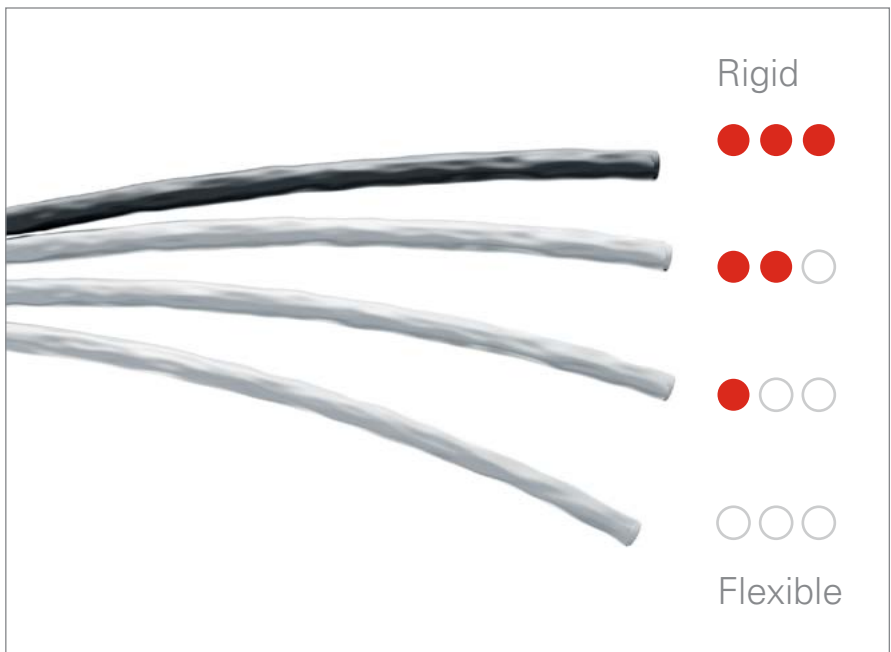
i-FLEX™

Graded endoscope flexibility to ease the maneuverability and help to reduce loopings



TrueTorque™

Delivers a higher tactile feel with the endoscopes, supporting a predictable movement



Adjustable stiffness

Rigidity of the insertion tube can be adjusted for individual patient's anatomy



Learn more about i-FLEX™ and TrueTorque™

i20c video endoscope series

The next generation of endoscopes



ErgoFeel ergonomic control body: improved steering wheels, remote buttons and valves



Steering wheels for tip
angulation reduced in size and
lowered for easy access

Control body size optimized
for all hand dimensions aiming
for stressless usage



Improved **air / water and
suction valves** for smooth
operation

Optimized remote button
positioning and activation for
easier access and operations

i20c video endoscope series

The next generation of endoscopes



Steering wheels for tip angulation reduced in size and lowered for easy access



Finger-optimized spokes require less force to move the distal end



Lower R/L wheel with wider diameter for easier access



Flatter U/D wheel shape for improved access and operability



i20c video endoscope series

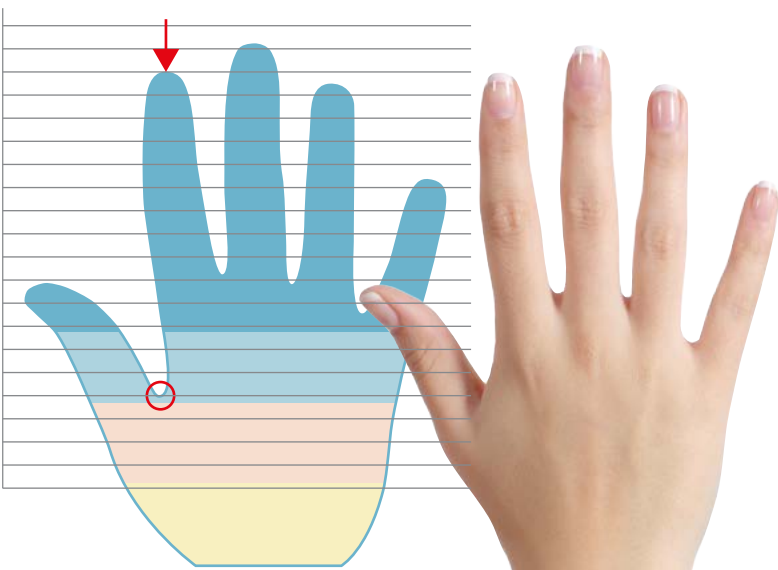
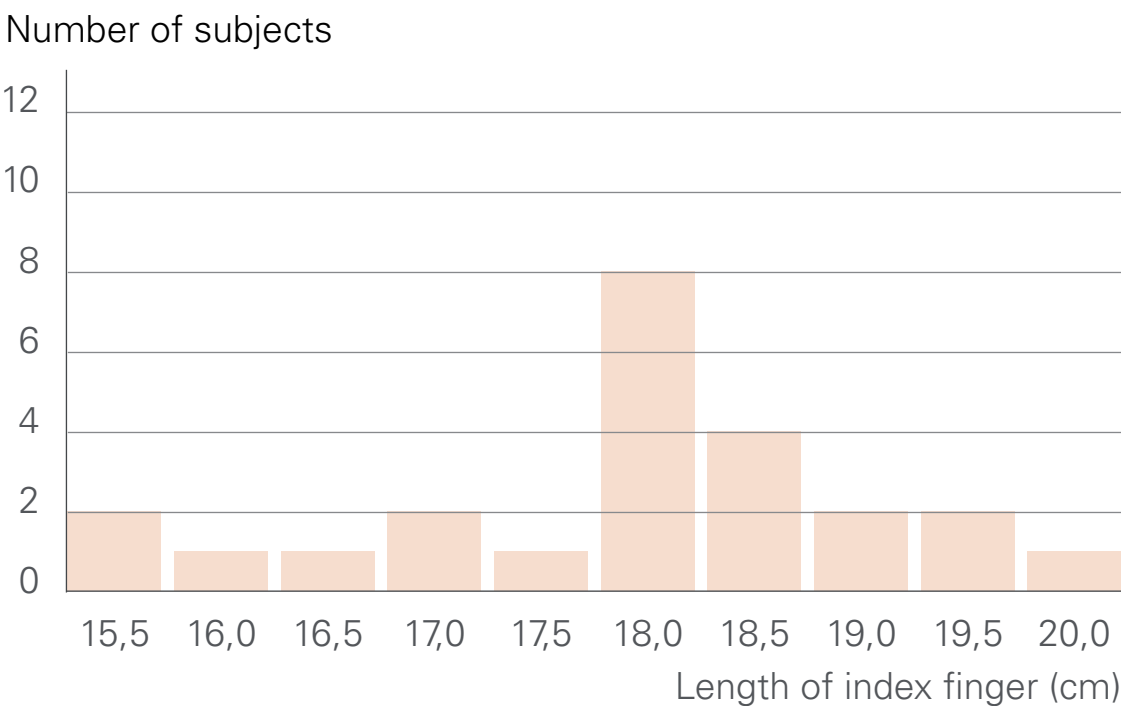
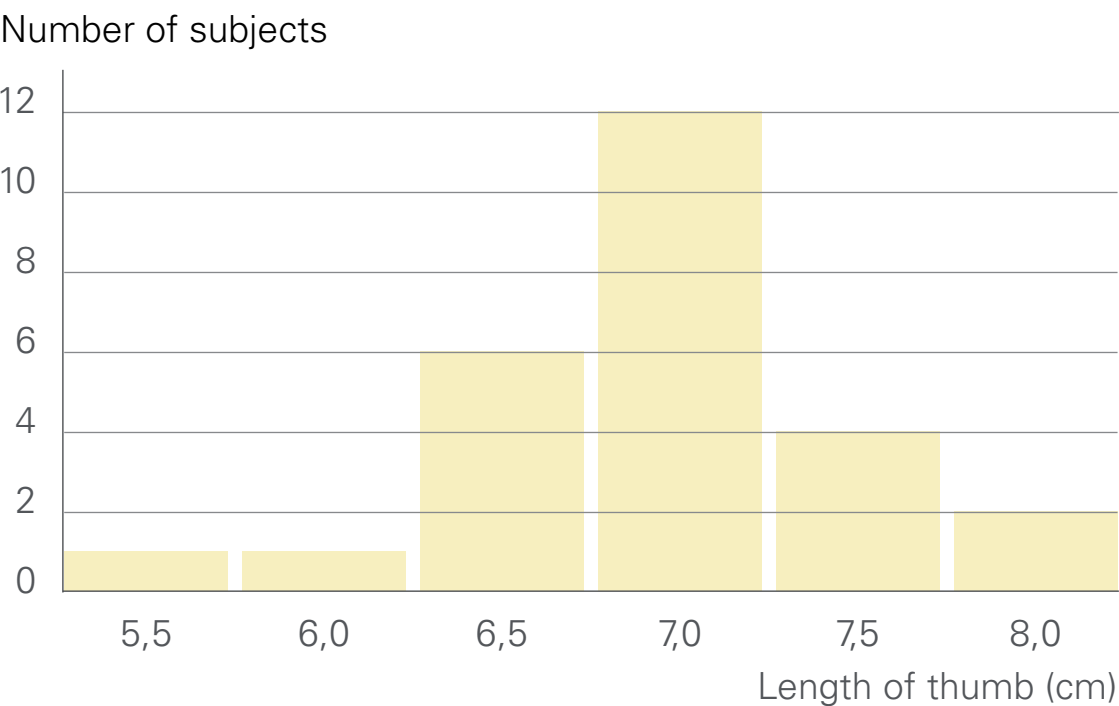
The next generation of endoscopes



Control body size optimized for all hand dimensions



In a user focused evaluation¹⁾, the **average hand and finger dimensions** were measured, to optimize the control body's fit:



Different hand dimensions were studied to improve endoscope ergonomics



The **OE-B17 R/L Knob adapter** (optional) supports even easier R/L wheel operation.

The results of this survey led to a redesign of the control body, allowing a most **comfortable endoscope usage** considering the spectrum of all handsizes, from large to small hands.

¹⁾ Evaluation was conducted 2019 with 42 probands, reflecting potential gender and geographical considerations.

i20c video endoscope series

The next generation of endoscopes



Optimized remote button positioning for an efficient triggering



Unique side-triggering

Remote buttons can be triggered also from the side, leading to an ergonomic usage.

Horizontal positioning

Buttons 3 and 4 are located in an optimized horizontal position for an easy access.



i20c video endoscope series

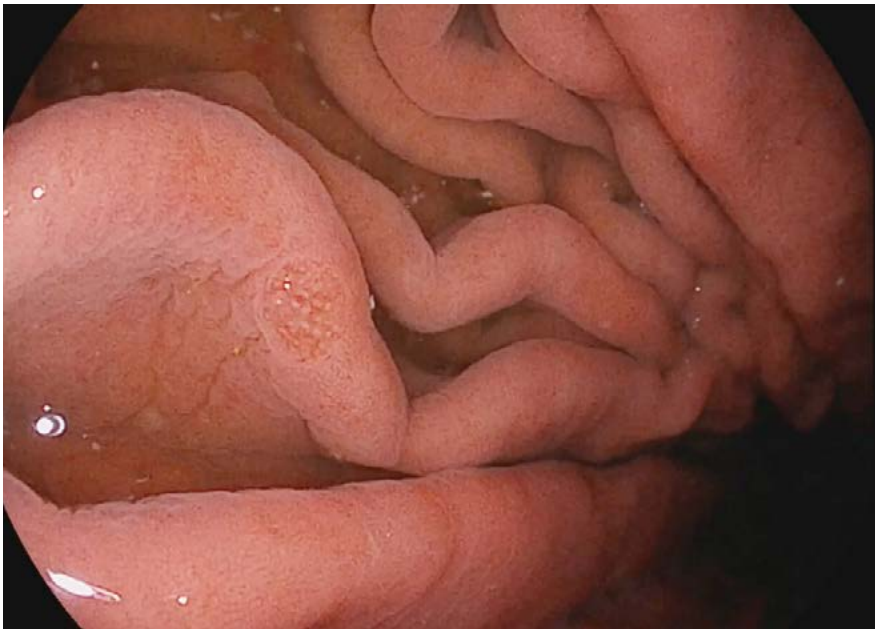
The next generation of endoscopes



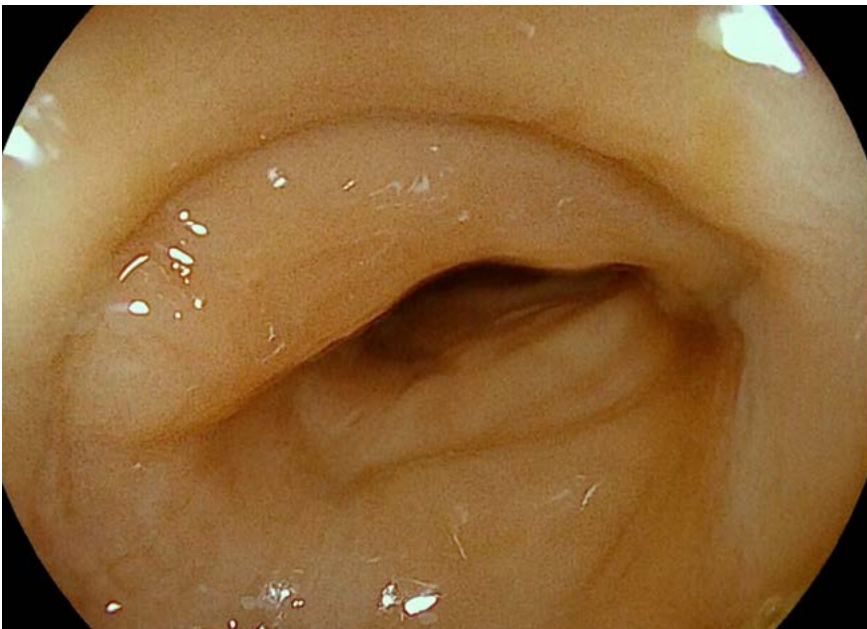
Stunning clarity and visibility with highly detailed images



EG29-i20c




EG27-i20c (slim)



EC38-i20c



EC34-i20c (slim)

See more examples 

Images courtesy Prof Timo Rath, University of Erlangen, Nuremberg, Germany; Erasmus MC Rotterdam, The Netherlands; Croydon University Hospital, UK

i20c video endoscope series

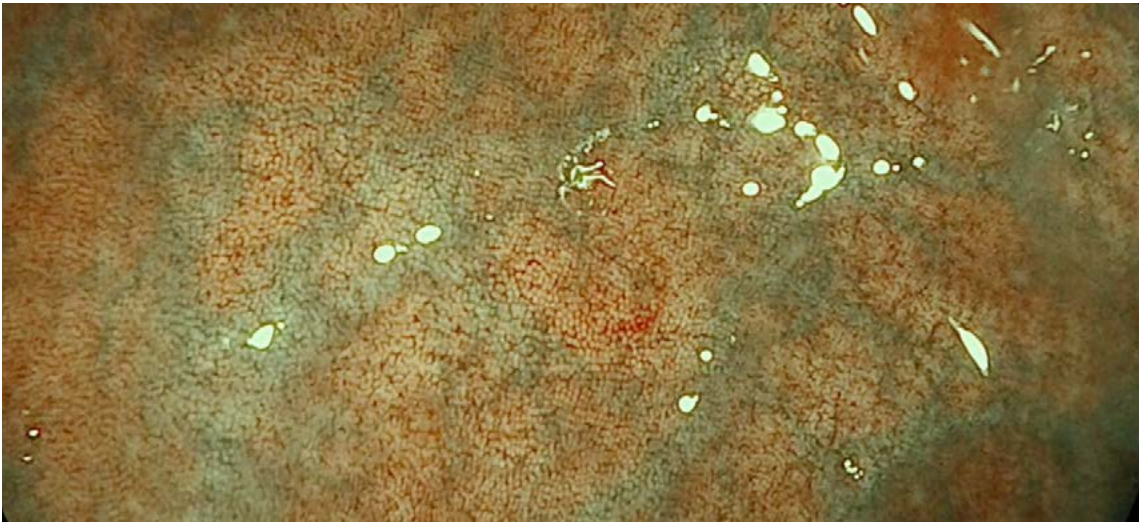
The next generation of endoscopes



Stunning clarity and visibility with highly detailed images



White light imaging with EC38-i20c



i-scan optical enhancement (OE) with EC38-i20c



Side-by-side visualization with TwinMode

Images courtesy by Prof Timo Rath, University of Erlangen, Nuremberg, Germany

i20c video endoscope series

The next generation of endoscopes



Outstanding positioning and accessibility due to 210° tip angulation (up) also in i20c colonoscopes



210° tip angulation in colonoscopes to enable detection and resection of even hard to reach lesions.

- **Excellent maneuverability** due to 210° deflection and minimised bending radius.
- **Advanced therapy:** Combining flexibility of the endoscope tip and stability of the endoscope body.
- **Advanced orientation and detection** due to deflection, up to 4K resolution and excellent 5 LED illumination in combination with i-scan.



i20c video endoscope series

The next generation of endoscopes



PENTAX Medical Triple Aim



i20c endoscopes aim to support healthcare professionals in detection, diagnosis and therapy better than ever. Physicians can instantly benefit from **uncompromising vision and maneuverability**.



The new, unique control body and **lightweight connector** of the i20c endoscopes are designed to **optimize the workflow**.

The i20c endoscope generation has been designed with **superior ergonomics** for medical professionals who spend countless hours working with it. Its **adjustable stiffness** and the advanced imaging have the potential to **improve the quality of procedures**.

i20c video endoscope series

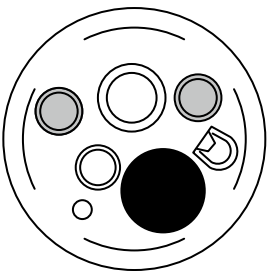
A range of high-end endoscopes



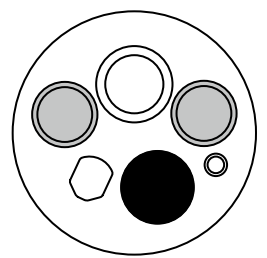
The range of highly advanced features endoscopes for upper and lower GI procedures, **available in regular and extra slim diameters**, for every anatomical situation.



Gastrosopes

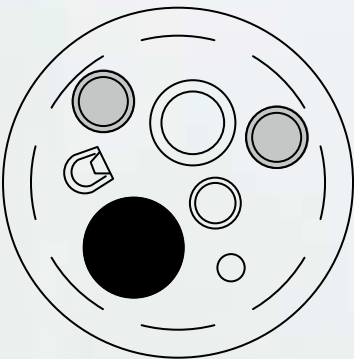


EG29-i20c
Distal end Ø 9.9 mm
Working channel Ø 3.2 mm

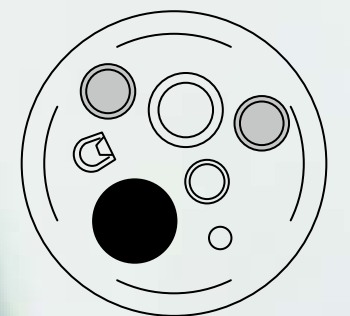


EG27-i20c (slim)
Distal end Ø 9.2 mm
Working channel Ø 2.8 mm

Colonoscopes



EC38-i20c
Distal end Ø 13.2 mm
Working channel Ø 3.8 mm



EC34-i20c (slim)
Distal end Ø 11.5 mm
Working channel Ø 3.2 mm

See specifications



See visualization



i20c video endoscope series

Supporting you in every step of the routine



1
2
3



Easy exam room preparation

- Easily connect your PENTAX Medical endoscopes¹⁾ to INSPIRA
- Quick setup thanks to the **EasyOn connector** on i10c and i20c endoscopes for single-handed operation
- Easy processor setup due to saved **individual user profiles** for each physician
- Quick direct patient **data import** from hospital information system **via DICOM interface**

1) 90i, i10, J10, 90K, i10c and i20c series endoscopes

Not all models are compatible. For details, contact your local PENTAX Medical service facility.

i20c video endoscope series

Supporting you in every step of the routine



1
2
3



Supported examination and treatment

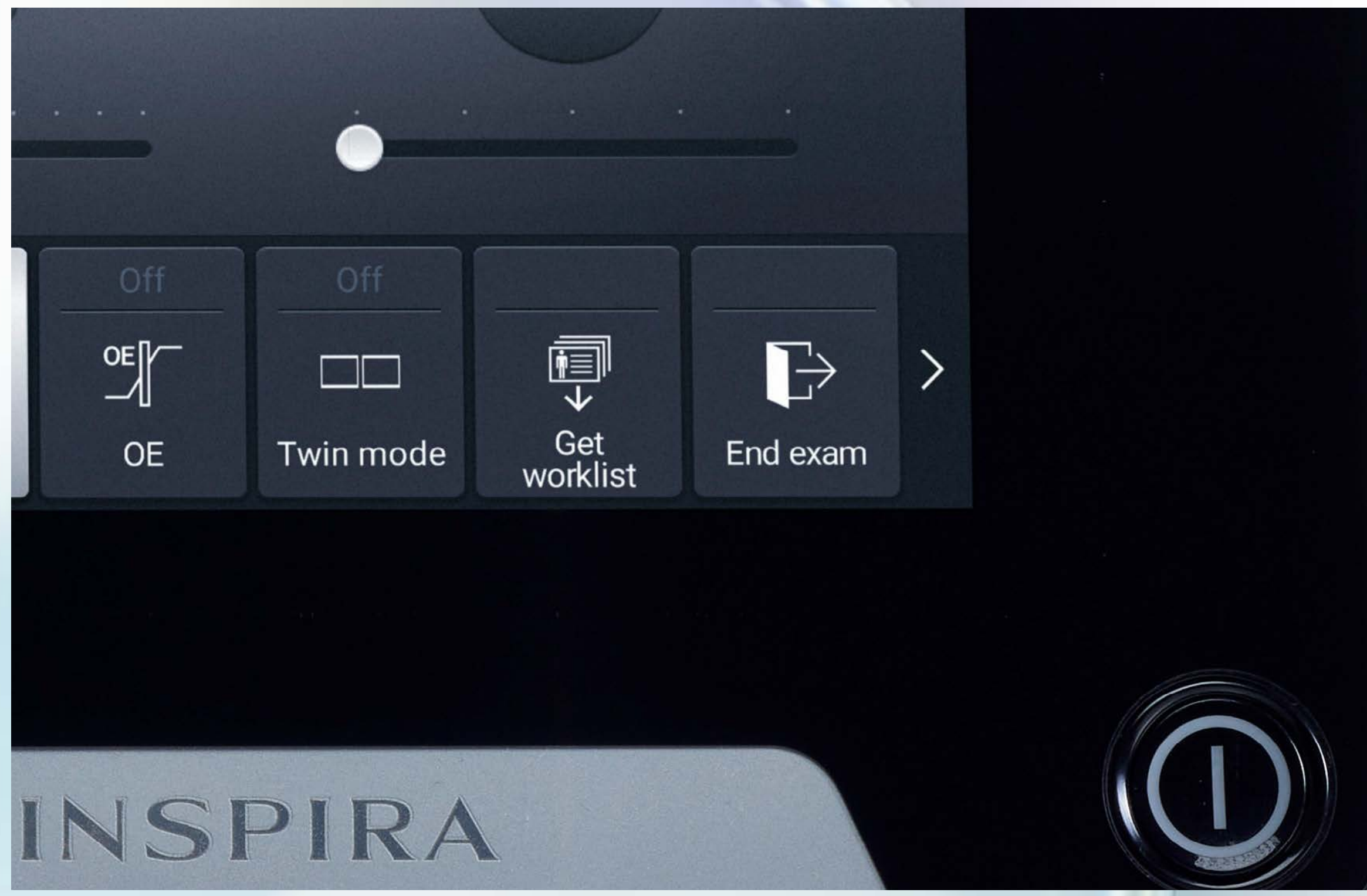
- Clear visualization with up to **4K resolution** to support you for high-level clinical results
- i20c endoscopes with adjustable stiffness (colonoscopes), TrueTorque™ and i-FLEX™ provide **exceptional maneuverability**
- **ErgoFeel control body** lessens the strain during long procedures

i20c video endoscope series

Supporting you in every step of the routine



1
2
3



Efficient post procedure routines

- Simplified video and patient **data transmission** into patient files thanks to **DICOM interface**
- Easier reprocessing due to **waterproof EasyOn connector** on i20c endoscope series
- Programmable button for “**End exam**” routines, simplifying procedure closures by bundling f.e. data transfer, water pump shut-down, etc.

Technical specifications

INSPIRA Video Processor EPK-i8020c



| PARAMETERS | VALUES | |
|-----------------------------|---|------------------|
| Power supply | Voltage | 100 – 240V ±10 % |
| | Frequency | 50/60 Hz ±1 Hz |
| | Rated Input | 380 VA |
| Dimensions (W×H×D) | 400×205×520 mm | |
| Net weight | 24 kg | |
| Illumination | 5 LED lightsource | |
| User interface | 7 inch customizable touchscreen with individual profile setting | |
| Image enhancement | i-scan (Surface Enhancement, Contrast Enhancement, Tone Enhancement) OE-Optical Enhancement (Mode 1 & 2); Auto-HDR; D-Range expansion | |
| Freeze scan | Yes | |
| Twin Mode | Yes | |
| Picture in Picture | Yes | |
| Control signal | 1 × RJ45 (LAN) 100BASE-TX/1000BASE-T/10Base-T 3 × Remote, 5 × USB 2.0 | |
| Compatible video endoscopes | 90K, 90i, J10, i10, i10c and i20c series; Not all models are compatible. For details, contact your local PENTAX Medical service facility. | |

| VIDEO SIGNAL | CONNECTOR | RESOLUTION |
|-----------------|-----------|--|
| Digital output | DVI | 1920 × 1080/60p(i) |
| | 3G-SDI | 1920 × 1080/60p |
| | HD-SDI | 1920 × 1080/60i |
| | 12G-SDI | 3840 × 2160/60p* |
| Analogue output | Y/C | NTSC/PAL format |
| Digital input | DVI | 1920 × 1080/60p 1280 × 1024/60p 1024 × 768/60p |

| IMAGE RECORDING | VALUES |
|-----------------|---------------------------|
| Image recording | Yes (internal & external) |
| Video recording | Yes (internal & external) |

| NETWORK COMPATIBILITY | VALUES |
|-----------------------|---|
| DICOM/PACS* | Yes* (Image Transfer & Worklist Management) |
| Endoimage2 (OS-I3) | Yes |

| LANGUAGES |
|---|
| English, Bulgarian, Chinese, Croatian, Czech, Danish, Dutch, Estonian, Finnish, French, German, Greek, Hungarian, Italian, Japanese, Latvian, Lithuanian, Macedonian, Norwegian, Polish, Portuguese, Romanian, Russian, Slovakian, Slovenian, Spanish, Swedish, Turkish |

* Optional features can be activated with respective software key which is sold separately for the light version of INSPIRA. Please, contact your local PENTAX Medical sales team for details.

Technical specifications

i20c Video Endoscopes



| PARAMETERS | EG27-i20c (Slim) | EG29-i20c | EC34-i20c (Slim) | EC38-i20c |
|------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|
| Direction of view | Forward | Forward | Forward | Forward |
| Field of view | 140° | 140° | 170° | 170° |
| Depth of field | 2–100 mm | 2–100 mm | 2–100 mm | 2–100 mm |
| Tip angulation up–down | 210°/120° | 210°/120° | 210°/180° | 210°/180° |
| Tip angulation right–left | 120°/120° | 120°/120° | 160°/160° | 160°/160° |
| Distal end width | 9.2 mm | 9.9 mm | 11.5 mm | 13.2 mm |
| Insertion tube width | 9.2 mm | 9.8 mm | 11.6 mm | 12.8 mm |
| Minimum working channel width | 2.8 mm | 3.2 mm | 3.2 mm | 3.8 mm |
| Insertion tube working length | 1,050 mm | 1,050 mm | 1,300/1,500/1,700 mm | 1,300/1,500/1,700 mm |
| Forward water jet | Yes | Yes | Yes | Yes |
| Adjustable stiffness | – | – | Yes | Yes |
| EasyOn connector | Yes | Yes | Yes | Yes |
| OE-B17 R/L Knob adaptor compatible | Yes | Yes | Yes | Yes |
| Compatible video processor | PENTAX Medical INSPIRA™ EPK-i8020c | PENTAX Medical INSPIRA™ EPK-i8020c | PENTAX Medical INSPIRA™ EPK-i8020c | PENTAX Medical INSPIRA™ EPK-i8020c |

References

What Experts say about INSPIRA



“The new INSPIRA processor offers superb image quality in terms of contrast, saturation, illumination and also crystal-clear freeze function. And all that with the existing scope setup that we are used to.”

Prof Dr Timo Rath, Professor of Endoscopy and Molecular Imaging,
University of Erlangen, Nuremberg, Germany

References

What Experts say about INSPIRA



“This new processor improves dramatically the quality of the endoscopic image, especially with the 4K screen.”

About White Light Improvement

“In white light, the margins of digestive lesions, in particular colonic polyps and Barrett’s esophagus, are better defined.”

About i-scan OE Improvement

“The use of chromoendoscopy in OE1 mode makes it possible to better appreciate the vascularization of gastro-colic lesions and thus to better define the possibilities of endoscopic resection.”

About Legacy Image Boost – MagniView

“The INSPIRA and gastroscope zoom connection allows an almost microscopic approach to the digestive wall. In conclusion, the INSPIRA processor qualitatively increases the performance of PENTAX Medical J10 series endoscopes.”

Dr Marc Giovannini, Chief of the Dept of Medico-surgical Digestive Oncology,
Institut Paoli-Calmettes, France.

At a glance

INSPIRA Video Processor and i20c Video Endoscopes

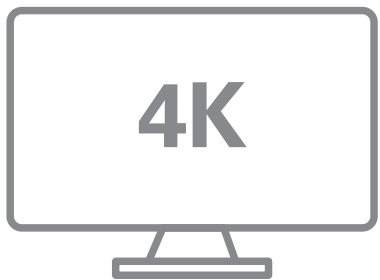


INSPIRA



Brilliant image quality

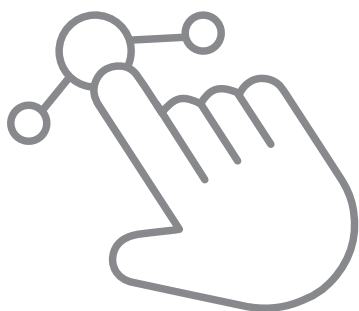
Bright, clear visualization rich in details, making use of latest digital and optical image technology. Designed to improve the quality of the procedure.



i20c Endoscope series



7" touchscreen with smartphone like usability. The customizable user profiles support easy setup.



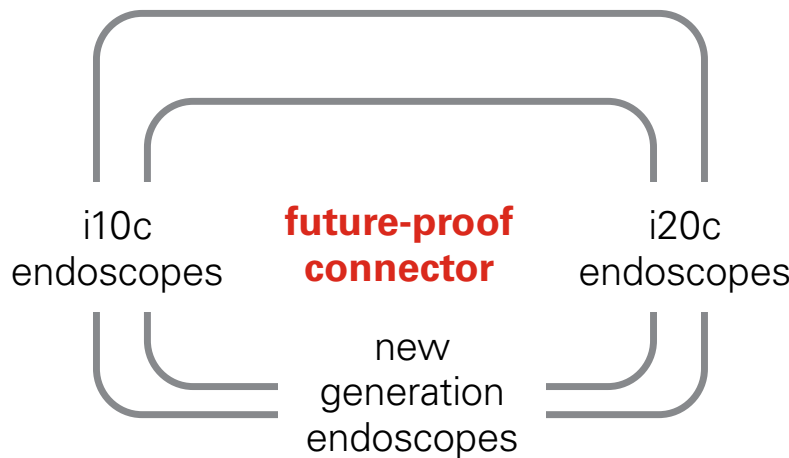
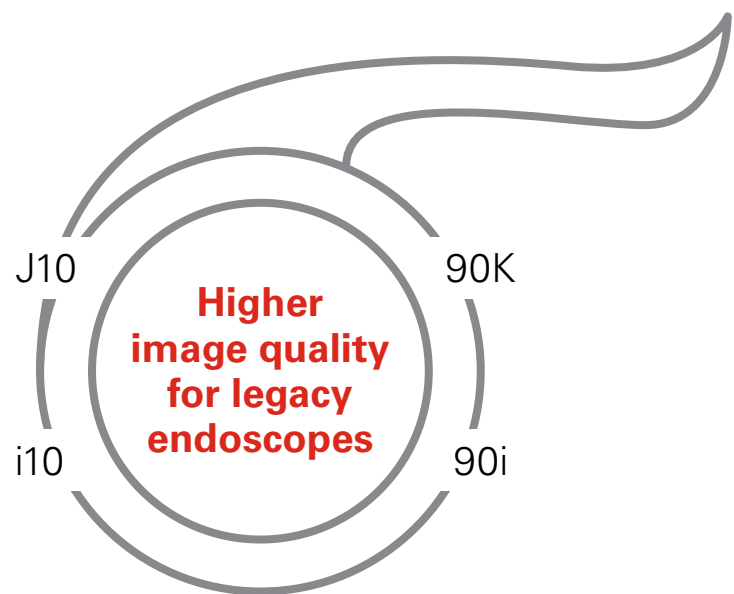
Smart functionalities such as “End exam” make handling more efficient and comfortable.

Upgrading legacy endoscopes

with state-of-the-art imaging for optimal conditions in diagnosis and therapy. This may extend the lifetime of endoscopes for greater sustainability.

High compatibility

with dual port to connect many endoscope generations¹⁾



Great ergonomics

ErgoFeel control body on i20c designed for all hand sizes and to lessen strain in long procedures.

Flexibility for any situation and anatomy

i20c colonoscopes offer TriDrive: i-FLEX™, TrueTorque™ and adjustable stiffness to support positioning and maneuverability.²⁾

¹⁾ 90i, i10, J10, 90K, i10c and i20c series endoscopes; Not all models are compatible. For details, contact your local PENTAX Medical service facility.

²⁾ Colonoscopes with TriDrive insertion technology: i-FLEX™, TrueTorque™ and adjustable stiffness

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At a glance



PENTAX Europe GmbH
Julius-Vosseler-Straße 104 • 22527 Hamburg
T +49 (0)40 561 92-0 • F +49 (0)40 561 92 247
info.emea@pentaxmedical.com • www.pentaxmedical.com



HOYA Corporation
6-10-1 Nishi-shinjuku
Shinjuku-ku • Tokyo
160-0023 Japan

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