DEFINA Solution
EPK-3000 Video Processor

Enter the world of HD endoscopy with flexible solutions for your clinical practice.
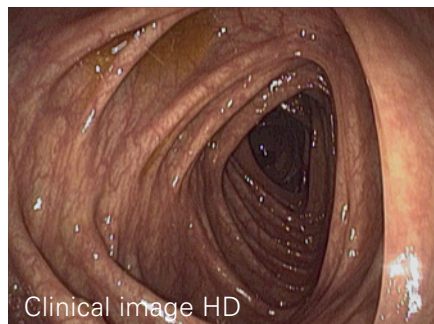
HD endoscopy technology
that offers you a choice.

The High-Definition DEFINA EPK-3000 video processor provides a flexible platform that allows you to select the level of technology that meets your clinical and financial needs.

The DEFINA HD solution offers the same high-quality HD imaging to all specialties, whether gastrointestinal, EUS, respiratory or ENT. In addition, you have the choice of whether to include our i-scan image enhancement software, both now and in the future.

If you are planning to upgrade from standard definition to High-Definition endoscopy with a choice to explore the benefits of image enhancement technology, the DEFINA EPK-3000 video processor offers the flexibility to create the optimal endoscopy system for your facility.

Clinical image SD

Clinical image HD

DEFINA – optimize your daily clinical practice with the High-Definition EPK-3000 video processor.

The High-Definition DEFINA system offers a high-quality HD image to support the day-to-day diagnostic and therapeutic needs of a modern endoscopic facility.

1 Excellent visualization

Brilliant, **High-Definition** images with **xenon light** for a clear and more detailed visualization of the mucosal structures.
Dynamic range expansion provides excellent illumination to improve **far-field visualization**.

2 Flexible platform

Designed as a multi-purpose platform, DEFINA supports varying specialties such as GI, EUS, Pulmonology and ENT, optimizing a hospital's investment and workflow.

3 Upgradeable capabilities

The High-Definition image can be enhanced with **i-scan technology** to support detection, demarcation, and characterization.

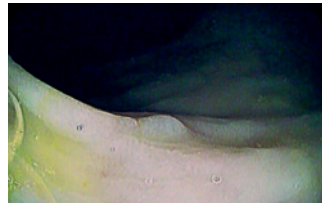# Excellent visualization

High-Definition image

An HD image with excellent illumination of xenon light ensures better visualization during daily procedures.

ESGE suggests the routine use of High-Definition white-light endoscopy systems for detecting colorectal neoplasia in average risk populations.[1]

The High-Definition DEFINA system has the potential to merge sharp and clear image quality with i-scan technology for fast detection and precise demarcation to support characterization and patient treatment.
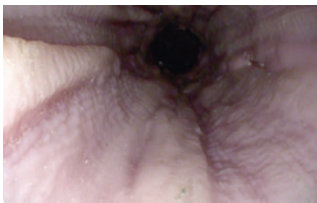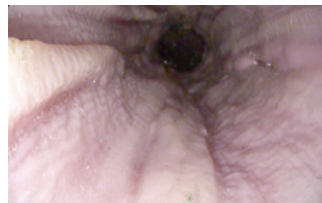
i-scan 1 mode

i-scan 2 mode

i-scan 3 mode

Dynamic range expansion

Dynamic range expansion is a software enhancement that provides improved far-field visualization. When trying to image a distal lumen and a proximal view is impossible, this feature is invaluable.
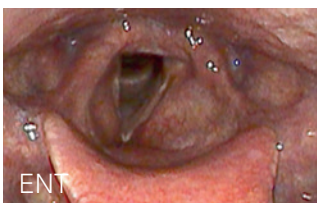
D-Range OFF
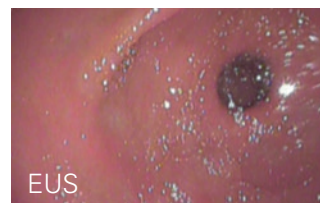
D-Range ON

Flexible platform

Designed as a multi-purpose platform, DEFINA supports varied specialties such as GI, EUS, Pulmonology, and ENT, for the optimization of a hospital's investment and workflow.

ENT

Pulmonology

EUS

Larynx in i-scan 1 mode. Image obtained with DEFINA and with a J10 Naso-Pharyngo-Laryngoscope video endoscope

Right upper lobe in i-scan 2 mode. Image obtained with DEFINA and a J10 video bronchoscope.

Gastric Antrum in i-scan 1 mode. Image obtained with DEFINA and a 70K ultrasound video endoscope.

[1] Advanced imaging for detection and differentiation of colorectal neoplasia: European Society of Gastrointestinal Endoscopy (ESGE) Guideline. Kamiński *et al. Endoscopy.* 2014 May;46(5):435-49. doi: 10.1055/s-0034-1365348. Epub 2014 Mar 17.

Upgradeable capabilities

A system that offers a choice

The DEFINA solution gives you the choice of a light version or the full version with i-scan. The light version of DEFINA can be always upgraded with a separate kit, available to enhance your diagnostic capabilities with i-scan.

DEFINA Solutions

DEFINA EPK-3000

Light version with
upgradable capabilities

Full version with i-scan

i-scan

i-scan **UPGRADING KIT**
This is available at any time.

With its user-friendly interface, compact size, and ease-of-operation, this is the economically efficient endoscopy diagnostic solution for a smaller budget: the light version of DEFINA.

With its excellent price performance ratio, the full version of DEFINA with i-scan is the ideal video processor with which to enter the world of High-Definition and i-scan for an enhanced diagnosis.

Upgrading made easy

We are pleased to offer you an easy and fast way to upgrade your DEFINA system. Once you have made the decision to further enhance your optical diagnosis with i-scan, please contact your PENTAX Medical representative for ordering information on the i-scan upgrading kit.
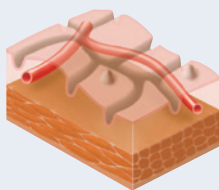
Advanced Solutions

The DEFINA EPK-3000 is a versatile endoscopic solution, offering the unique ability to upgrade the system from the light version of DEFINA to DEFINA with i-scan. The upgrade allows you to enter the world of High-Definition enhanced with i-scan to ensure optimized diagnosis results.

Enhance your clinical outcomes with i-scan

i-scan is a digital image enhancement endoscopy technology and a virtual endoscopy tool. Easily operated with just the touch of a button, it offers rapid imaging results and real-time processing. Based on proven clinical studies and feedback from key industry opinion leaders, the HD imaging combined with i-scan technology offers significant advantages: it improves the ability to detect, characterize, and demarcate suspicious lesions in the lower and upper GI, and helps to provide targeted intervention at an early stage.
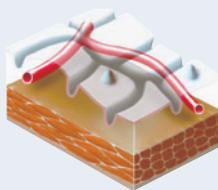
Tailor your i-scan setting to your clinical needs

SE enhances the light/dark contrast, which in turn enhances the structure through recognition of the edges.
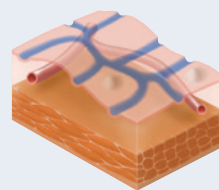
TE alternates discrete parts of light spectrum components (red, green, blue) of a normal image and enhances minute mucosal structures and subtle changes in color.

CE adds the color blue in relatively dark areas (to the edges) by obtaining luminance intensity.

i-scan 1 Surface Enhancement (SE) enhances the mucosa structure in natural color tones to support **detection,** especially of flat lesions, by highlighting abnormalities.

i-scan 2 Tone Enhancement (TE) enhances the changes of vascular and mucosal structure with a color tone change, to support pattern **characterization**.

i-scan 3 Contrast Enhancement (CE) enhances the depressed areas and differences in structure through colored presentation of low density areas, to support **demarcation**.

i-scan supporting the diagnostic pathway

i-scan 1 (SE) – detection

i-scan 2 (TE) – characterization

i-scan 3 (CE) – demarcation

Technology with proven results

Clinical studies have already shown that i-scan technology can significantly improve:

- **Adenoma detection rate (ADR),** especially of **colon polyps located in the right colon,** namely the **flat and depressed adenoma and serrated polyps.**[1, 2]
- i-scan supports better prediction of **inflammatory bowel disease (IBD).**[3]
- In **gastroesophageal reflux disease (GERD)** i-scan is able to detect minimal changes and accurately characterize the identified lesions (inflammation vs. neoplasia) during ongoing endoscopy.[4]
- In **Barrets' oesophagus,** i-scan improves dysplasia detection, which is superior to random biopsies.[5]

[1] Neumann *et al.* Virtual Chromoendoscopy With I-SCAN Improves the Detection of Right Sided Colon Adenomas in Comparison to High-Definition White Light Endoscopy. *Gastrointestinal Endoscopy* May 2013, Volume 77, Issue 5, Supplement, Page AB552.
[2] Testoni *et al.* High-Definition colonoscopy with i-Scan: Better diagnosis for small polyps and flat adenomas. *World J Gastroenterol* 2012 October 7; 18(37): 5231-5239.
[3] Iaccuci *et al.* iSCAN-High-Definition colonoscopy correlates with white light endoscopy and histology assessment in mucosal healing for ulcerative colitis. *Journal of Crohns and Colitis* February 2013: 7:S53-S54.
[4] Kim *et al.* Efficacy of I-scan Endoscopy in the Diagnosis of Gastroesophageal Reflux Disease with Minimal Change. *Clin Endosc* 2011;44:27-32.
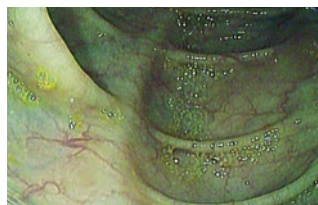[5] Hoffman *et al.* Acetic acid compared with i-scan imaging for detecting Barrett's esophagus: a randomized, comparative trial. *Gastrointest Endosc.* 2014 Jan;79(1):46-54.
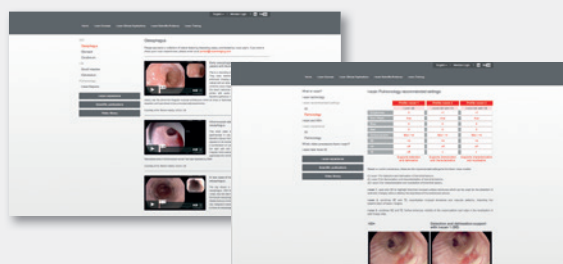
i-scan 1 mode

i-scan 2 mode

i-scan 3 mode

i-scan website

Enter the i-scan world and exchange and expand your i-scan knowledge

Enroll in the i-scan platform and…
- get exclusive i-scan content
- attend i-scan webinars presented by experts
- expand your i-scan learning with online training modules
- receive i-scan certification by putting your i-scan knowledge to the test
- choose your language: English, French, German, Italian, Russian or Spanish

www.i-scanimaging.com

Knowledge is power

i-scan certification

The i-scan certification has the aim to empower the clinical team to fully utilize i-scan in routine practice, fully leveraging on its proven benefits. With every upgraded DEFINA EPK-3000 video processor installation, your clinical team gets access to a comprehensive i-scan training platform, comprising self-training modules on i-scan classifications, tutorial videos and webinars. This platform stores a record of your progress and automatically informs you when new learning content is available.

After completion of the i-scan online training module, an i-scan certification will be issued by the i-scan task force to attest your i-scan knowledge.

How do I get i-scan certification?

Step 1

Enroll in the PENTAX Medical customer portal

www.mypentaxmedical.eu

Step 2

Navigate to the i-scan certification tab

i-scan CERT

Step 3

Complete the activities

| Finish the self-education classification module | + | Learn from a webinar | = | i-scan certificate module I |

✔ Pass the test   ✔ Pass the test

Training for Excellence

This PENTAX Medical initiative is designed to assist endoscopic professionals in improving the quality of endoscopy. Leverage on the Training for Excellence programs provided by PENTAX Medical to maximize the i-scan benefits and best practices in endoscopy.

www.training-for-excellence.eu

A range that meets all needs

The 90k and Kp endoscope series

PENTAX Medical offers two endoscope series and a range of models to ensure that all types of medical facilities and their patients can benefit from the latest HD endoscopy technology.

DEFINA EPK-3000 Video Processor

HD video output	DVI-D (1920 x 1080i)
SD video output	RGB, Y/C, composite
User interface	Control panel, keyboard
i-scan virtual chromoendoscopy	Quick access via i-scan keys 1, 2, 3
Light source	150W Xenon
Dimensions (W x H x D / weight)	350 x 180 x 485 mm / 13.0 kg
Image Enhancement	Digital Image Enhancement: i-scan (SE, TE, CE) Enhances the endoscopic view of mucosal surface and vessel patterns.
Dynamic Range Expansion	Off, Low, Med, High Adjustment for optimising image brightness in darker areas of an image
Freeze Scan	Off, Low, Med, High Selects the sharpest image from a series of images temporarily stored in the processor memory, whenever an image is frozen.
Digital Zoom	Magnification options: Off, 1.2x, 1.5x, 2.0x

90K Series endoscopes

Models	Insertion tube [ø mm]	Instrument channel [ø mm]	Working length (mm)	Total length (mm)	Field of view (degrees)	Focal range (mm)	Angulation Up / Down	Angulation Right / Left
90K series gastroscopes								
EG-2490K	8	2.4	1050	1373	140	4 - 100	210 - 120	120 - 120
EG-2790K	9	2.8	1050	1373	140	4 - 100	210 - 120	120 - 120
EG-2990K	9.8	2.8	1050	1373	140	4 - 100	210 - 120	120 - 120
EG-3490K	11.6	3.8	1050	1373	140	4 - 100	210 / 120	120 / 120
90K series colonoscopes								
EC-3490LK	11.6	3.8	1700	2023	140	3 - 100	180 / 180	160 / 160
EC-3490FK	11.6	3.8	1500	1823	140	3 - 100	180 / 180	160 / 160
EC-3890LK	13.2	4.2	1700	2023	140	3 - 100	180 / 180	160 / 160
EC-3890FK	13.2	4.2	1500	1823	140	3 - 100	180 / 180	160 / 160
K10 transnasal gastroscope								
EG16-K10	5.4	2.0	1100	1416	140	4 - 100	210 / 120	120 / 120

Kp Series endoscopes

Models	Insertion tube [ø mm]	Instrument channel [ø mm]	Working length (mm)	Total length (mm)	Field of view (degrees)	Focal range (mm)	Angulation Up / Down	Angulation Right / Left
Kp series gastroscope								
EG-290Kp	9.8	2.8	1050	1373	140	5 - 100	210/120	120/120
Kp series colonoscopes								
EC-380LKp	13.2	3.8	1700	2023	140	3 - 100	180 - 180	160 - 160
EC-380FKp	13.2	3.8	1500	1823	140	3 - 100	180 - 180	160 - 160

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