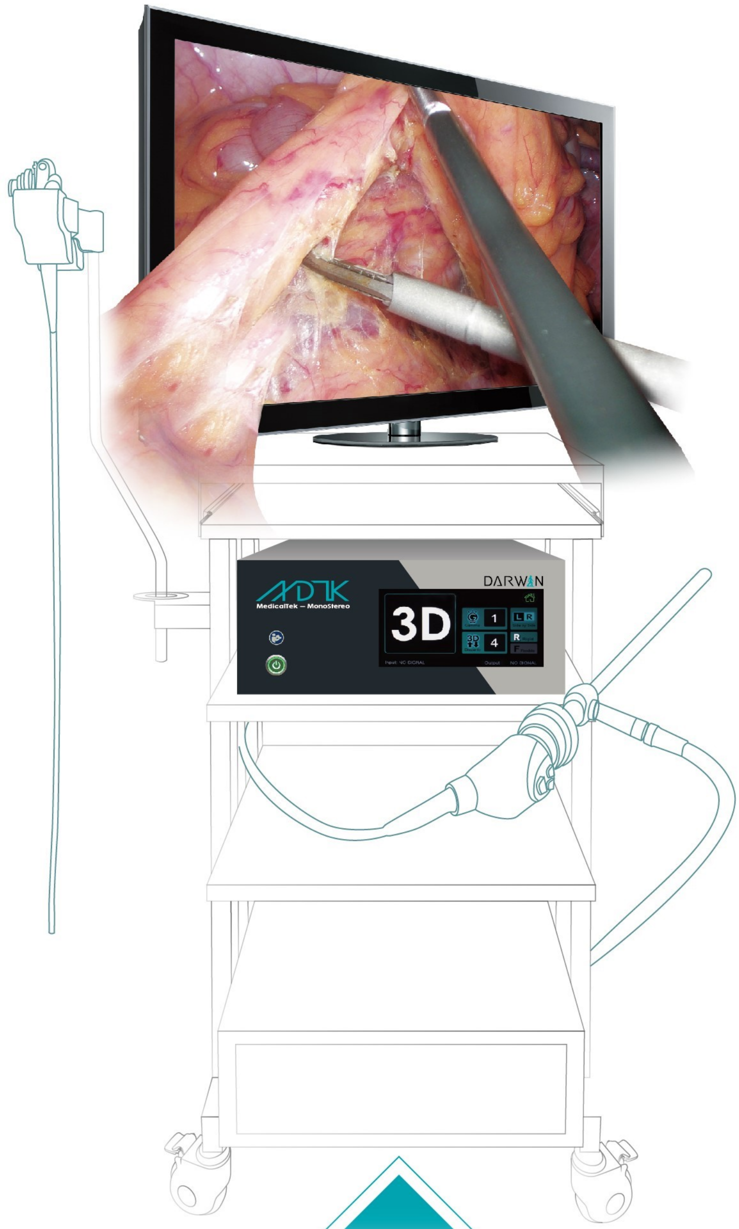
DARWIN

3D Endoscopic System

KEEP 2D, SEE 3D



Superb Compatibility and Great return of Investment

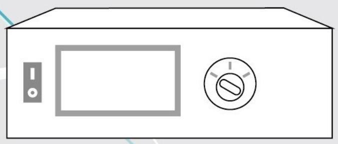
DARWIN 3D is compatible with most 2D endoscopy system. Instead of buying whole 3D endoscopy image box and scopes, all you need is one DARWIN 3D and one 3D monitor to turn the current 2D endoscopic image into 3D. Such simple upgrade brings fast return of investment.

Available 2D Endoscope Functions

When using DARWIN 3D, the surgeons can still rotate the scope, zoom in/out, etc.

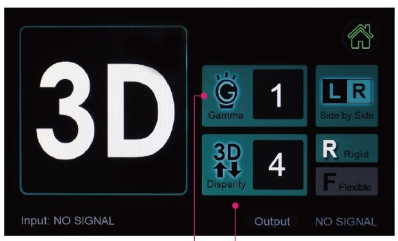
DARWIN
3D Endoscopic System

an endoscopic visualization system, is one of the pioneers in the field of endoscopic imaging. It provides a real-time 3D vision of surgical image.




Evolutionary Features

Integrated Touch Screen



Gamma Adjustment

This function adjusts the exponential relationship between image contrast and brightness. By lowering the gamma value when needed, the darker parts in the image will be clearer.

Adjustable human factor

Unlike most 3D endoscopy solutions, the 3D parameter, the disparity levels specially designed for rigid and flexible endoscopy, is adjustable in DARWIN 3D. By adjusting the levels according to the surgeons' preferences, the surgeons can enjoy 3D view much more comfortably.

3D FLEXIBLE

Clinical Benefit

- Helps physicians spot sessile polyps, flat adenoma, etc. more easily, and thus boost early detection of lesions
- Speeds up the learning curve and helps result in better en-bloc resection for ESD/EMR
- Brings easier cannulation for ERCP

3 Levels of Disparity

DARWIN 3D Flexible offers 3 levels of disparity for physicians to choose the one they prefer.

3D RIGID

Clinical Benefit

- Offers 3D solution for tiny scopes, e.g. 1.5mm, 2.7mm, etc., as well as scopes of different angles.
- Increases the accuracy for suturing, vessel clamping, tissue separation and boosts the procedure safety
- Reduces the operation time and blood loss during the procedure

5 Levels of Disparity

DARWIN 3D Rigid comes with 5 disparity levels for surgeons to choose from.

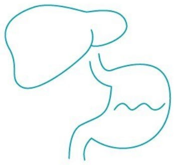
MULTI – APPLICATION

Neurosurgery

Endoscopic skull-base surgery;
Endoscopic spine surgery

Otolaryngology

Sinus surgery, Myringoplasty,
Tympanoplasty, Congenital Ossicular Anomaly

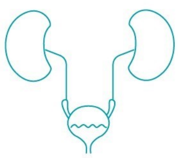


General surgery

Pediactrics surgery, Laparoscopic Hernia Repair,
Thyroidectomy

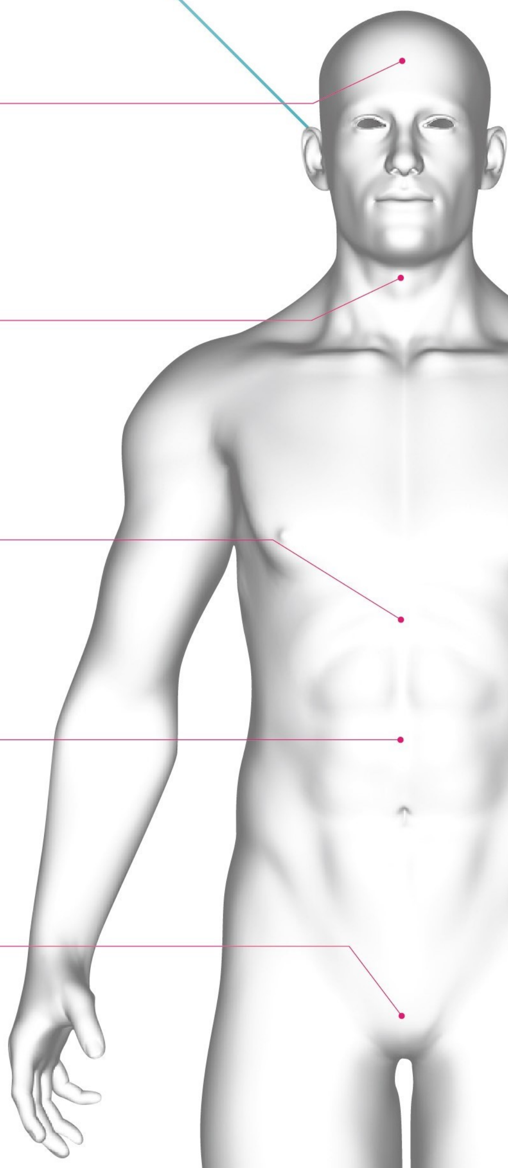
Gastroenterology

ESD, EMR, ERCP, POEM, ESG, Colonoscopy



Urology

Transurethral endoscopic surgery
(e.g. Transurethral resection of prostate),
HoLEP, URSL, RIRS



SPECIFICATIONS

Type	3D Visualization Unit
AC Input	100~240V / 10~5A, 60~50 Hz
Dimensions	(W) 305 x (H) 160 x (L) 320 mm
Weight	Approx. 8 kg (Mass)(Main unit)
Image Input Terminal	HDMI terminal for video capture
Image Output Terminal	DP terminal for display
Input Resolution	up to 3840 x 2160 (1920 x 1080 recommended)
Output Resolution	1920 x 1080, 60 fps
3D Display Format	Line-by-line, side-by-side, top and bottom

Operating Conditions	Temperature: 0ºC~45ºC, Humidity: 5%~90%, Atmospheric pressure: 700~1060 hPa
Storage and Transport Conditions	Temperature: -20ºC~80ºC, Humidity: 5%~90%, Atmospheric pressure: 700~1060 hPa
Cabinet Material	Metal
Touch Panel	Capacitive touch panel 7" 800 * 480

STATISTIC REFERENCE

Computer Vision Generated 3D Images to Guide Advanced Flexible Endoscopic Procedures: First Clinical Feasibility Report
The following is the different task time spent when conducting the same procedure from 60 medical doctors (4 experts, 40 intermediate, and 16 novices) using traditional 2D endoscopy system and MDTK' s 3D endoscopic visualization system.

	Forward peg transfer (time in s)	Retroflex peg transfer (time in s)	Puncturing (time in s)	Polypectomy (time in s)	Clipping (time in s)	Cannulating (time in s)	Overall
2D	229, 13±83, 26	255, 33±71, 02	198, 13±75, 41	187, 80±77, 02	149, 37±67, 65	123, 60±90, 82	73, 82±15, 44
MDTK 3D	**183, 73±83, 23**	**242, 50±70, 80**	**146, 17±80, 71**	**130, 47±55, 86**	**114, 63±50, 69**	**82, 37±63, 02**	**81, 88±14, 42**
p	**0,021**	0,454	**0,006**	**0,006**	**0,048**	0,071	**0,031**

Mascagni, P., Pizzicannella, M., Bibas, J., Spota, A., Laracca, G. G., Dallemagne, B., Habersetzer, F., Costamagna, G., Boskoski, I., Perretta, S., & Marescaux, J. (2020).

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