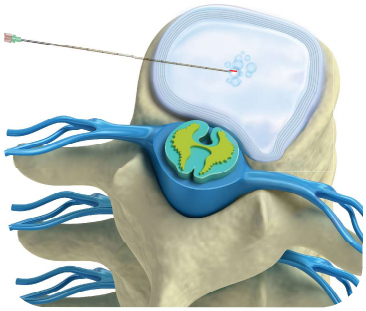
METRUM CRYOFLEX

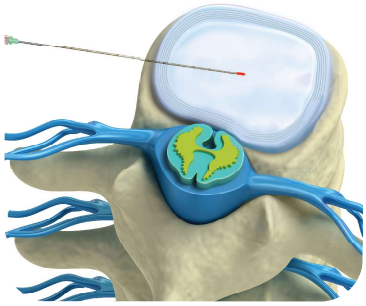
Surgical diode laser
for PLDD procedures

SWING 15 15 W - 1470 nm

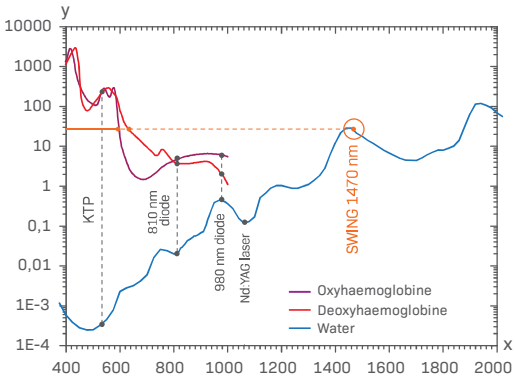
- **Redefining minimally invasive treatments**

CE 2274





Biophysics



Axis y: Absorption coefficient [cm^{-1}] Axis x: Wavelength [nm]

Source: G. M. Hale, M. R. Querry, "Optical constants of water in the 200 nm to 200 µm wavelength region," Appl. Opt.,12, 555-563 (1973). Scott Prahl, https://omlc.org/spectra/hemoglobin/, Oregon State of Technology, USA.

Percutaneous Laser Disc Decompression - PLDD procedure

PLDD along with IDET (Intradiscal Electrothermal Therapy) and nerve cryoablation are recognised as minimally invasive procedures for managing radicular spine pain.

PLDD procedures are performed under local anaesthesia. An optical fibre is inserted into a working cannula under fluoroscopic guidance. Using fluoroscopy alongside a contrast medium, the cannulas position and the condition of the disc bulge can be confirmed. The laser will then initiate decompression and lower intradiscal pressure.

A posterior-lateral approach with no interference to the vertebral canal, PLDD minimises the possibility of damaging the dural sac when operating on higher segments or spinal roots. It is important to note this is a reparative treatment and will not reinforce the annulus fibrosus. Using the laser to perform disc decompression results in a small amount of the nucleus pulposus evaporating; meaning there is a minimal decrease in the volume of the disc, however disc pressure can be significantly reduced.

Main indications

- Degenerative disc disease
- Bulging disc
- Pinched nerve (nerve root compression)
- Sciatica

Indications for laser nucleoplasties include disc bulges without ruptures in the annulus fibrosus and disc space collapse. The best results are obtained when the disc bulge is no bigger than 6 mm.

Advantages of PLDD

- Day case procedure
- No general anaesthesia
- No arthrodesis (fusion)
- Minimally invasive
- Excellent patient outcomes
- Minimal recovery time
- Minimal scar tissue formation

Biophysics of the 1470 nm wavelength

The 1470 nm laser light beam has suitably low melanin and haemoglobin absorption for selective photothermolysis. The wavelength of the 1470 nm laser is absorbed by cellular water 40x better than a 980 nm laser and 60x better than a Nd:YAG 1064 nm laser.

PLDD procedures are most effective when the device operates on low power and in ultra-pulse mode (1.2 ms) which radically decreases side effects such as: carbonisation, necrosis, increased gas volume.

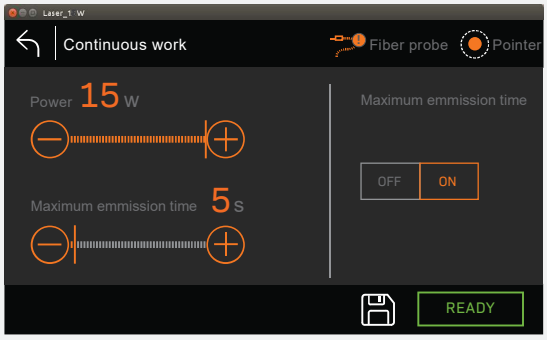
SWING 15

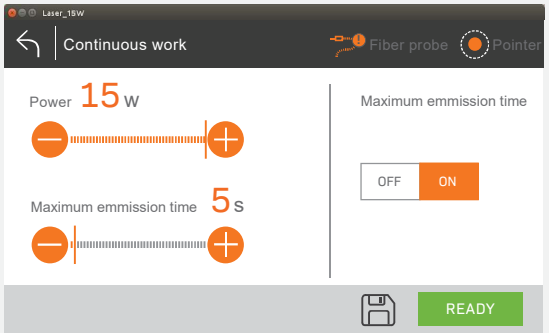
User friendly software

The diode laser made by METRUM CRYOFLEX is a high-powered surgical laser, expertly manufactured in Poland. All systems in the unit are carefully selected and monitored by their internal R&D division.

The SWING 15 laser is controlled from a high definition touch screen with excellent colour quality and a wide field of view in order to provide the operator with ease of use. Individual user settings can be saved on the device, allowing for the quick and easy selection of personalised treatment parameters.

The software offers four different work modes: impulse, continuous, quasi-continuous & phlebology.





Advantages of SWING 15

- 4 specialised modes to choose from
- The ability to create and save bespoke programs
- Multiple safety features including a warning signal in case of optical fibre disconnection
- Full application of the 15 W power range available at the optical fibre tip
- Intuitive touch screen panel with black or white interface

CE 2274

METRUM CRYOFLEX

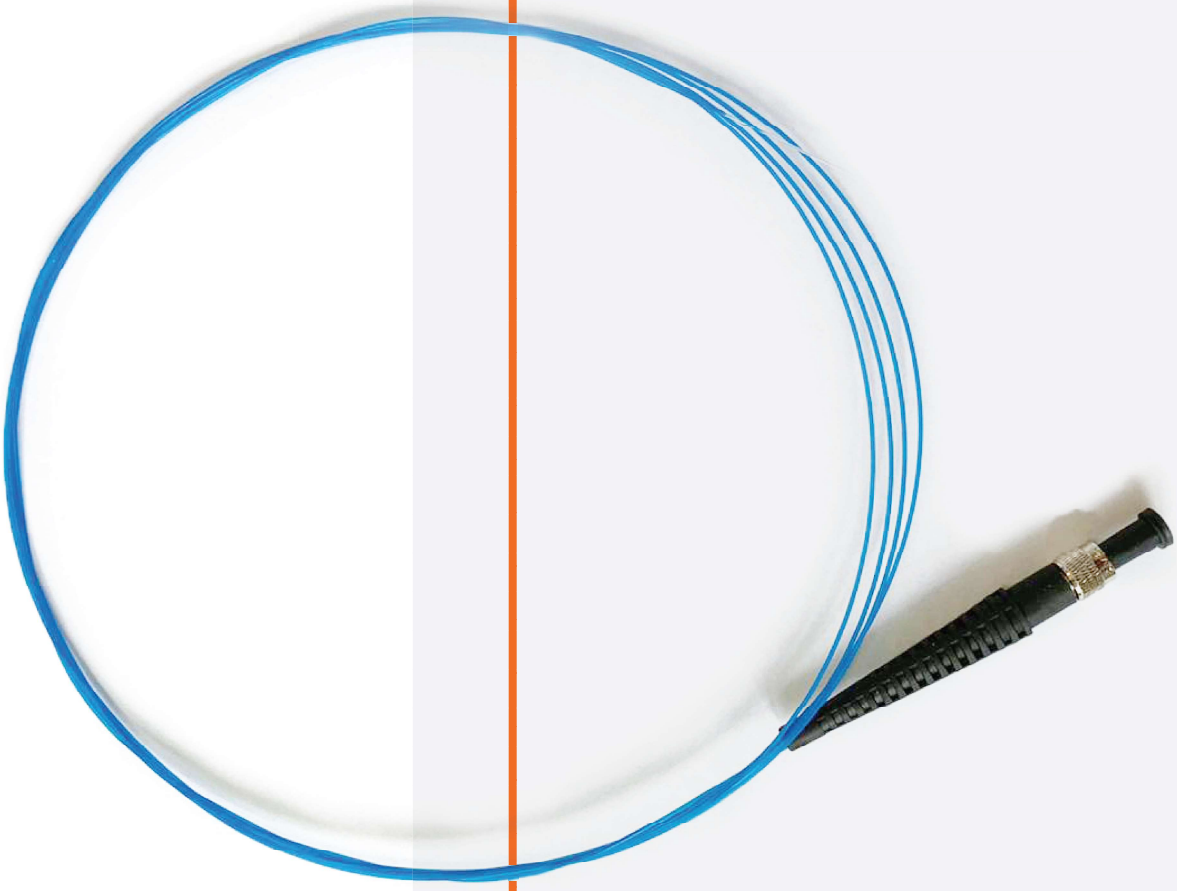
Consumables

Accessories for the use of SWING 15 in spinal surgery

PLDD's should be performed using a combination of the SWING 15 laser and our premium quality optical fibre. This combination ensures accurate concentration of laser energy and optimal efficiency.

All consumables are double sterile packed and include:

- 400 microns optical fibre
- 8F Y connector
- Introducer needle 18 G /15 cm and 20 G / 15 cm

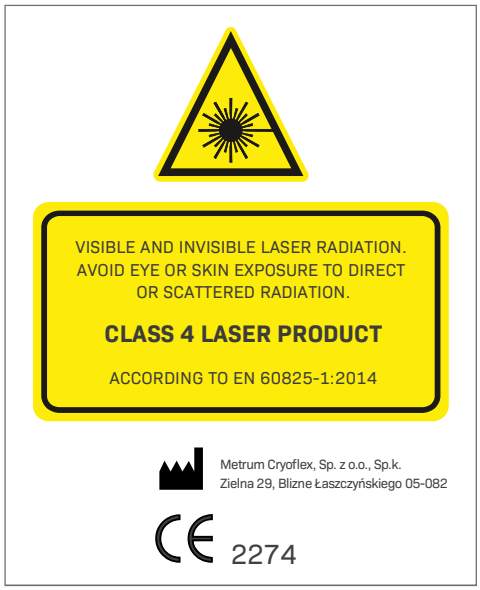


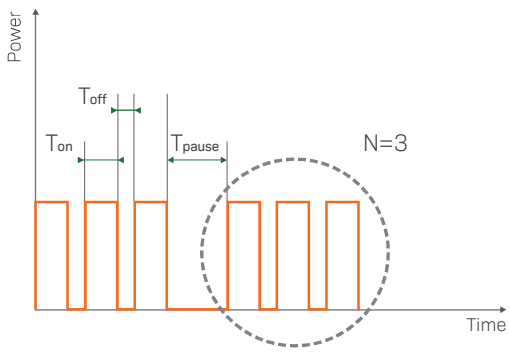
CE 2274

SWING 15

Specification

Power supply		
Power supply		110-230 V~ 50 Hz - 60 Hz
Maximum power consumption		375 VA
Safety		
Class		I
Laser		
Laser class		4
Wavelength Max. laser power (ver. dependent)		1470 nm 15 W
Operation mode		Continous (CW) Quasi continous (QCW) Pulse (REPEAT)
Dimensions		43/46/20.3 cm
Weight		13 kg
Treatment parameters		
Ton	Laser pulse time [µs, ms]	200 µs ÷ 100 s
Toff	Pulse interval value [µs, ms]	200 µs ÷ 100 s
N	Pulse number in “package”	1 ÷ 100 and ∞
Tpause	Interval between pulse “packages”	200 µs ÷ 100 s





METRUM CRYOFLEX

Manufacture
Zielna 29 Street
05-082 Blizne Łaszczyńskiego
POLAND, EU

Headoffice
Kolejowa 16A Street
05-092 Łomianki
POLAND, EU

Tel: +48 22 33 13 750
+48 22 33 13830
Fax: +48 22 33 13 766

export@metrum.com.pl
www.metrum.com.pl

BR0-2021-10-SWING_15_PLDD-016-EN