Intelect® High Power Laser
HPL7 & HPL15
The Chattanooga High Power Laser raises the game of laser treatment; its higher power achieves greater photonic delivery, shortening treatment times, generating a thermal effect, and improving healing. It can almost immediately arrest soft tissue and joint pain. Its 3 wavelengths allow for optimal tissue absorption and it can achieve much greater penetration depth than its low-power counterparts.

Key Features & Benefits

• Deep tissue penetration with power up to 15 W
• Optimal tissue absorption due the 2 or 3 different wavelengths: 810 nm, 980 nm and 1064 nm
• Different emission modes for optimal output adjustment
• Preset protocols for easy application
• Large Touch screen, 7 inch with an optimal interface flow
• Automatic laser source calibration
• Safety footswitch operation

Accessories

Applicator 26 mm
Applicator 38 mm
Optical Applicator
Ball Lens Applicator
The Beginnings of Laser Therapy

One of the world’s foremost minds is often credited with the development of light energy: Albert Einstein used the term “stimulated emission” in his theory “Zur Quantum Theories der Strahlung” which was published in 1916. However, the healing effects of lasers were not discovered until over 50 years later.

The first working laser was invented in 1967 by Endre Mester at the Semmelweis University in Budapest, Hungary. Mester’s focus was on tumors and the space occupying lesions in patients. In his experiments, Mester observed no shrinking tumors as he’d hoped but instead the surrounding, secondary damaged tissue responded and healed quicker with the addition of light energy. Mester immediately changed the angle of his research and began channeling his efforts into tissue defects like diabetic ulcers, venous insufficiencies and the “dreadful hospital bedsores” from prolonged inactivity lying down. Thus, he unearthed the first clues about photo-biostimulation which initiates tissue healing.

Low power lasers became accessible for the treatment of pain in the late 1970s and have been widely utilized around the globe by clinicians and health practitioners in a variety of settings. These early lasers were only moderately more powerful than a modern keychain-sized laser pointer (about 5 milliWatts [mW]) purchasable at any office supply store for a few dollars. The extremely low power of these early devices limited the use of these lasers to superficial wound treatment as they were unable to penetrate the skin. With time, however, more powerful lasers were developed and more evidence emerged as to their therapeutic benefits.

The Benefits of High Power

Laser therapy has been used in Europe since the 1970s and was cleared by the United States Food and Drug Administration (FDA) in 2005. The High Power Laser technology is based on the principles of low power laser therapy, but offers higher power output (up to 7 Watt on the HPL7 and 15 Watt on the HPL15) which clinically provides a greater photonic delivery effect, shortening treatment times and generating a thermal effect which facilitates circulation, improves healing and immediately arrests soft tissue and joint pain.

The combination of 2 or 3 wavelengths (810 nm, 980 nm and 1064 nm) with different characteristics within the same therapeutic window enables different interactions with biological tissues.
How is this achieved?

Laser energy stimulates a healing cascade which facilitates the ATP synthesis in the tissue (light energy is converted into chemical energy), promoting protein synthesis and cell proliferation. This process results in reduced inflammation, swelling, muscle spasms, stiffness and ultimately leads to tissue repair and a decrease in pain and discomfort.

High Power Laser treatment has been thoroughly researched and documented. Here are some clinical studies that support the efficacy of the treatment:


**Biostimulation**

Biostimulation is the ability to stimulate tissue growth and repair at a cellular level. The essential properties of true laser light are classified by being monochromatic, coherent, and collimated or precisely fine-tuned at 810 / 980 nm and 1064 nm wavelengths. These wavelengths stimulate high permeability of the biological chromophores, the light absorbing part of the molecule that allows for penetration of the light into the cell mitochondria. By using the appropriate wavelength, maximum therapeutic effect can be achieved on the target tissue.

**Analgesic**

Laser light is absorbed and partly scattered in the target tissue and thereby largely converted into heat. This thermal stimulus to the nociceptors of the skin affects the peripheral neurological tract and polarizes the A-β and A-δ neurons as described in the paingate-control theory. This polarization activates the neural and humoral endorphinergic pain inhibition system with immediate pain relief as a result.

**Anti-Inflammatory**

Inflammation is necessary for healing. The challenge for the clinician is to control this acute inflammatory stage in order to allow the next stage of healing. The HPL units effectively modulate the inflammatory processes secondary to their deep stimulation of tissues. This deep stimulation triggers vasodilatation and increased oxygenation, which activates the main metabolic activities and resolves the inflammatory process quicker.

**Regenerative effects**

The described acceleration of healing processes primarily manifests in the form of fibroblast activation. The actual cascade of healing is fueled by increased ATP synthesis and increased protein synthesis combined with cellular proliferation. Because of the non-thermal nature of this activation, only small amounts of laser energy are required. The attenuation of the laser light in the tissue depends on the localization of the lesion and determines the laser power required. Deeper structures such as tendons or joint capsules may require the application of higher doses to the surface.
Most common indications

High intensity Laser therapy offers effective treatment of a wide range of clinical conditions ranging from muscle injuries and tendinopathies to degenerative joint diseases.

- Painful shoulder - Impingement syndrome, tendonitis, rotator cuff injury
- Epicondylitis radialis/ulnaris
- Cervicobrachial syndrome
- Myofascial Pain, Trigger Points
- Bursitis
- Carpal Tunnel Syndrome
- Lower back pain - Osteoarthritis, disc herniation, muscle spasms
- Muscle Strain
- Trigger points, muscle spasms
- Achilles Tendinopathy
- Plantar fasciitis/Heel Spur
- Ankle sprain - tibiotarsal distortion
Intelect® High Power Laser
HPL7 & HPL15

Ordering Information

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<th>Part Number</th>
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<td>Intelect HPL7 - High Power Laser (7 Watt)</td>
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Standard Accessories (included with HPL as default)

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Optional Accessories

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