

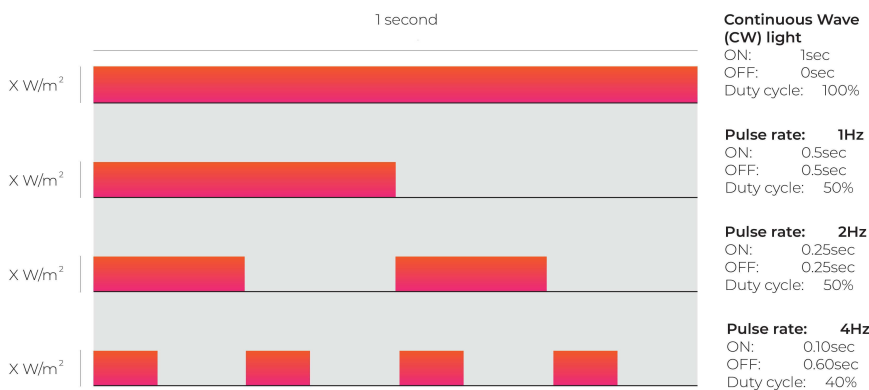
# Pulsing

The other critical factor in stimulating tissue is pulsing the light source. The cold laser therapy market has shown the adoption of pulsing light to have solved many of the problems that dosage has not.

The theory behind pulsing is based on the fact that as more power is needed to provide adequate energy as treatment targets get deeper, this power increase can cause tissue heating at the surface. Introducing the light in micro-pulses delivers the same energy density with no measurable heat increase at the surface, giving practitioners a great option when dealing with more complex treatments.

The ratio of the light's ON time to OFF time is known as the **Duty Cycle**. A duty cycle of 85% means the light is on 85% and off 15% of the time, thus delivering 85% of the dosage of continuous wave (CW) light. Pulsing can be fixed at a certain frequency or sweep through a set of frequencies.

Visible light wavelengths that pulse below 60Hz can create undesirable responses in users highly sensitive to light. Quality systems have safety modes.



## Types of Pulsing

**Basic pulsing** - All four wavelengths pulse at the same frequency.

**Harmonic pulsing** - Multiple, simultaneous pulsing frequencies that synchronize together.  
Ex.) 5Hz, 10Hz, 15Hz and 20Hz.

**Light Fields** - These combinations use multiple pulsing frequencies with synergistic effects.  
Ex.) 10Hz, 385Hz, 3632Hz and 4625Hz.

## Examples of Beneficial Pulsing Frequencies

**2.28Hz - Nogier Frequency A (fixed)** - Associated with metabolism, nutrient assimilation and a balanced parasympathetic nervous system.

**5-8Hz - Theta Brain State (Sweep)** - 5Hz, 6Hz, 7Hz and 8Hz frequencies are sequenced through to essentially recalibrate our daily, active (alpha) state to the creative and relaxing brain state seen in meditation (theta).

**40Hz** - Focused on heavily in recent studies for its association in the reduction of amyloid plaque on myelin sheath related to Alzheimer's.

**292Hz** - Resonates with the ectoderm (outermost tissue) to aid in the forming of skin, glandular, nerve, tooth and other tissues.

**4,762Hz - Nogier Frequency E** - Resonating with the spinal chord and peripheral nervous system, this is an example of a classic frequency used in many types of protocols.