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[\[PDF \(1879K\)\]](#) [\[References\]](#)**Influence of irradiation conditions on the deformation of pure titanium frames in laser welding**[Michio SHIMAKURA](#)<sup>1)</sup>, [Satoshi YAMADA](#)<sup>1)</sup>, [Misao TAKEUCHI](#)<sup>1)</sup>, [Koki MIURA](#)<sup>1)</sup>  
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**Abstract:**

Due to its ease of use in connecting metal frames, laser welding is now applied in dentistry. However, to achieve precise laser welding, several problems remain to be resolved. One such problem is the influence of irradiation conditions on the deformation of titanium frameworks during laser welding, which this study sought to investigate. Board-shaped pure titanium specimens were prepared with two different joint types. Two specimens were abutted against each other to form a welding block with gypsum. For welding, three different laser waveforms were used. Deformation of the specimen caused by laser welding was measured as a rise from the gypsum surface at the opposite, free end of the specimen. It was observed that specimens with a beveled edge registered a smaller deformation than specimens with a square edge. In addition, a double laser pulse waveform—whereby a supplementary laser pulse was delivered immediately after the main pulse—resulted in a smaller deformation than with a single laser pulse waveform.

**Key words:**[Laser welding](#), [Titanium](#), [Deformation](#)[\[PDF \(1879K\)\]](#) [\[References\]](#)Download Meta of Article [\[Help\]](#)[RIS](#)

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