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Laser performances on Laser MegaJoule facility for ICF experiments

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Inertial Confinement Fusion experiments have started on the LMJ facility on 2019. The number of laser bundles available is increasing by years, starting from six laser bundles in 2019 for the first ICF campaign, to eleven laser bundles on target in 2025. Meanwhile the LMJ facility is achieving the 22 bundles operational, laser performance is increasing to reach high conformity such as the power balance or the energy delivered towards the different irradiation cones.

Reaching the laser performance needed for the ICF experiments is a long-term program where all the laser systems are included such as temporal pulse shaping, spatial pulse shaping, laser simulations and models, or final optics assembly transmission. Specific campaigns are leaded to expand the energy and power diagram in a safe way for laser induced damage on optics [1].

References

[1] J. Neauport et al., « Laser MegaJoule performance status », Applied Optics Vol. 63, n°16, p4447-4464 (2024)