FY19 Q1 Laser Facility Report

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During the first quarter (Q1) of FY19, the Omega Laser Facility conducted 331 target shots on OMEGA and 204 target shots on OMEGA EP for a total of 535 target shots (see Tables I and II). OMEGA averaged 11 target shots per operating day, averaging 94.4% Availability and 98.0% Experimental Effectiveness.

OMEGA EP was operated extensively during Q1 of FY19 for a variety of user experiments. OMEGA EP averaged 8.5 target shots per operating day, averaging 93.8% Availability and 92.9% Experimental Effectiveness.

Table I: OMEGA Laser System target shot summary for Q1 FY19.

Laboratory/ Program	Planned Number of Target Shots	Actual Number of Target Shots	ICF	Shots in Support of ICF	Non-ICF
CEA	16.5	18	—	—	18
HED	99	112	—	—	112
LBS	5.5	7	—	—	7
LLE	82.5	75	—	75	—
LLNL	5.5	8	8	—	—
NLUF	38.5	46	—	—	46
Calibration	0	65	—	65	—
Total	247.5	331	8	140	183

Table II: OMEGA EP Laser System target shot summary for Q1 FY19.

Laboratory/ Program	Planned Number of Target Shots	Actual Number of Target Shots	ICF	Shots in Support of ICF	Non-ICF
HED	63	86	—	—	86
LBS	7	8	—	—	8
LLE	21	23	—	23	—
LLNL	7	15	15	—	—
NLUF	49	56	—	—	56
NRL	7	10	10	—	—
Calibration	0	6	—	6	—
Total	154	204	25	29	150

Sub-aperture short-pulse beam operation has been activated on OMEGA EP. This modifies the nominally *f*/2 square beam (measured along the diagonal) to an *f* number that suits a given experimental objective. Circular *f*/6, *f*/8, and *f*/10 profiles are currently available and additional profiles could be realized with modest effort. Kinematic nesting of the apodizers enables rapid shot-to-shot configuration from one *f* number to another. Energy limits are naturally decreased proportional to beam area. This capability has been successfully employed to investigate wakefield electron acceleration and plasma lens concepts.