FY21 Q1 Laser Facility Report

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During the first quarter of FY21, the Omega Laser Facility conducted 326 target shots on OMEGA and 210 target shots on OMEGA EP for a total of 536 target shots (see Tables I and II). OMEGA averaged 10.9 target shots per operating day, averaging 92.7% Availability and 90.8% Experimental Effectiveness. OMEGA EP averaged 8.1 target shots per operating day averaging 92.7% Availability and 92.4 Experimental Effectiveness.

Table I: OMEGA Laser System target shot summary for Q1 FY21.

Program	Laboratory	Planned Number of Target Shots	Actual Number of Target Shots
ICF	LLE	71.5	71
	LANL	11	9
	LLNL	16.5	18
ICF Subtotal		99	98
HED	LLE	22	19
	LANL	11	11
	LLNL	33	31
	SNL	11	10
HED Subtotal		77	71
LBS	LLE	22	22
	LLNL	11	12
LBS Subtotal		33	34
AIBS		33	35
ARPA-E		22	24
NLUF		44	39
Calibration	LLE	11	25
Grand Total		319	326

Table II: OMEGA EP Laser System target shot summary for Q1 FY21.

Program	Laboratory	Planned Number of Target Shots	Actual Number of Target Shots
ICF	LLE	14	16
	LLNL	7	8
	NRL	7	11
ICF Subtotal		**28**	**35**
HED	LLE	28	35
	LANL	7	6
	LLNL	21	29
	SNL	7	10
HED Subtotal		**63**	**80**
LBS	LLE	14	20
	LLNL	7	7
LBS Subtotal		**21**	**27**
AIBS		14	15
Marvel		14	24
NLUF		17.5	19
Calibration	LLE	0	10
Grand Total		**157.5**	**210**

During this period, the OMEGA target chamber's vacuum pumps were reconfigured for improved vibration isolation to achieve better target stability. This upgrade will be particularly important for campaigns where target offsets are undesirable but reduces the probability of vibrations causing target damage for all users. The newly commissioned IR optical transmission inspection system (IR OTIS) is being employed to characterize components in the beamline path. Measurements have resulted in a better understanding of the small variations in polarization at the beamline splits and are helping operations determine strategies to mitigate. In the future, this diagnostic will be used regularly to identify damage issues for maintenance on the OMEGA Beamline System.