



# Mag Lab by the Numbers

Total number of Mag Lab employees	360
Percentage of employees with PhDs	36
Number of countries represented by Mag Lab staff	50
Total investment in infrastructure from all budget sources, through 2008	\$192 million
Annual operating budget	\$54 million
Percentage of budget funded by the National Science Foundation	80
Percentage funded by the State of Florida	20
Amount of return to state of Florida projected for each dollar invested in the lab (2006 to 2016)	\$5.17
Square footage (all three branches)	440,000
Helium bill <sup>1</sup> for the year 2008 at the Lab's Tallahassee headquarters	\$1 million
Electric bill for the year 2008 at the Lab's Tallahassee headquarters	\$7.2 million
Percentage of that bill attributable to magnet use	72
Percentage of the electricity provided to all Tallahassee residences and businesses that is consumed by the Magnet Lab	7
Power supply, in megawatts, available at the lab's Tallahassee facility	56
Capacity, in megawatts, of the motor generator powering the pulsed magnets at the lab's Los Alamos National Laboratory site	1,430
Average monthly electricity use, in kilowatthours, of average U.S. home	920
Average monthly electricity use, in kilowatthours, of Mag Lab's DC Field Facility in Tallahassee (2008)	4,400
Magnetic field, in tesla <sup>2</sup> , of the lab's hybrid magnet, which creates the most powerful sustained magnetic field in the world	45
Weight, in tons, of this magnet	35
Miles of superconducting wire coiling through this magnet	4
Amount of power, in megawatts, required to operate this magnet	33
Number of weeks, required to cool the magnet from room temperature to its operating temperature of -452°F (-269°C)	6
Amount of chilled water, in liters per second, required to keep the magnet cold	400
Speed, in miles per hour, at which chilled water is run through resistive magnets to keep them cold	45
Magnetic field, in tesla, of the strongest non-destructive magnet in the world, a "multi-shot" magnet located at our Pulsed Field Facility at Los Alamos National Laboratory	90
Amount of pressure found 12 feet under water, in pounds per square inch	6
Amount of pressure (in psi) sustained by the lab's 90 tesla multi-shot magnet	200,000
Length of time, in milliseconds, that the 90 tesla multi-shot is operated, so as to avoid an explosion (One millisecond = 1/1,000 of a second)	15
Length of time, in microseconds, that the lab's 300 tesla single turn magnet is operated, before exploding – as it is designed to do! (One microsecond = 1/1,000,000 of a second)	6
Coldest temperature ever recorded on Earth (in nature)	-89°C (-129°F)
Coldest man-made temperature at the Magnet Lab (in our High B/T Facility at the University of Florida)	-272°C (-459°F) <sup>3</sup>
Number of times per second that hydrogen atoms spin in our 900 MHz NMR magnet	900,000,000
Number (approximate) of scientists from across the globe using the Mag Lab facilities every year	1,000
Number of visitors attending the Mag Lab's annual Open House (in 2009)	5,573
Number of students (approximate) taught in their classrooms every year through the Magnet Lab's educational outreach	8,800
Number of patents awarded to the lab (through 2007)	23
Number of world records	12

July 2009

<sup>1</sup>Liquid helium and liquid nitrogen keep our superconducting magnets at the cold temperature they require in order to operate.

<sup>2</sup>A tesla is a measure of magnetic field strength. The Earth's magnetic field is 1/20,000 (.00005) of a tesla.

<sup>3</sup>This temperature is just a fraction of a degree above absolute zero (0 Kelvin), the coldest possible temperature.

Visit the National High Magnetic Field Laboratory at [www.magnet.fsu.edu](http://www.magnet.fsu.edu).