



MAGNET SYSTEM SPECIFICATIONS

AMI System Number: 14285
Type: 7.0 Tesla Solenoid
For: Dr. Syd Kreitzman @ Triumph
Test Date: 28 October 2014

Rev 1

Horizontal Room Temperature Clear Bore ..... 3.50 Inches

Z-Main

Rated Central Field (Current) ..... 70 kG (70.35 A)
Maximum Test Field (current)1 @ 4.2K .....71 kG (71.36 A)
Coil Constant .....995.0 G/A
Homogeneity over 1.0 cm dia x0.6 cm Long RCC .....+/-0.001%
Inductance .....64.2 H
Magnet Charge Voltage .....2.0 V
Ramp Rate2 .....0.0317 Amps/Second
Recommended Persistent Switch Heater Current .....41 mA
Persistent Switch Heater Nominal Resistance3 .....70 Ohms
Magnet Resistance in Parallel with Switch3 .....21 Ohms

Z-Gradient

Maximum Current ..... +/-5.0 Amps
Coil Constant .....0.182 Gauss/A/cm
Inductance .....0.0 H
Magnet Charge Voltage .....1.0 V
Coil Resistance3 .....17 Ohms

Z-Modulation

Rated Central Field (Current) ..... +/-5.0 Amp
Theoretical Coil Constant .....~3.84 Gauss/A
Homogeneity over 1.0 cm dia x0.6 cm Long RCC .....+/-2.0%
Theoretical Inductance .....0.007 H
Magnet Charge Voltage .....1.0 V
Coil Resistance3 .....74 Ohms

1. Magnet not warranted for operation above rated field (70 kG) or current (70.35 A)
2. Was 0.317 Amps/Second
3. All resistance measurements made at room temperature



### **X-Modulation**

Rated Central Field (Current) .....+/-5.0 Amp  
Theoretical Coil Constant .....~2.07 Gauss/A  
Homogeneity over 1.0 cm dia x0.6 cm Long RCC .....+/-2.0%  
Theoretical Inductance .....0.004 H  
Magnet Charge Voltage .....1.0 V  
Coil Resistance<sup>1</sup> .....35 Ohms

### **Y-Modulation**

Rated Central Field (Current) .....+/-5.0 Amp  
Theoretical Coil Constant .....~2.07 Gauss/A  
Homogeneity over 1.0 cm dia x0.6 cm Long RCC .....+/-2.0%  
Theoretical Inductance .....0.004 H  
Magnet Charge Voltage .....1.0 V  
Coil Resistance<sup>1</sup> .....35 Ohms

430 Stability Setting(%) .....0%  
LHe Level Sensor Active Length .....33 Inches  
Maximum Operating LHe Level<sup>2</sup> .....33 Inches  
Minimum Operating LHe Level<sup>3</sup> .....17 Inches  
LHe Capacity in Cryostat Belly .....100 Liters  
Static LHe Loss Rate (measured) .....0.44 Liters/Hour  
Static LHe Hold Time .....227 Hours  
Time Required To Pre-Cool And Collect LHe .....~68 min  
Distance Cryostat Top Plate<sup>4</sup>-Magnet Center .....51.5 Inches  
Dry Weight (Cryostat + Magnet) .....465 lbs

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1. All resistance measurements made at room temperature  
2. Filling above that level increases boil off significantly as LHe will be in the dewar neck  
3. Minimum LHe level is for safe magnet operation.  
4. Upper Surface of the NW50 flange on the support stand top plate.