

# Test Plan for High Magnetic Field Measurements (July 2015)

April 15, 2015

1. Test a Hamamatsu R11102 and two fine-mesh PMTs: H6152-70 (25 mm) and H6614-70 (51 mm).
2. For the R11102, the highest field that the PMT is expected to be able to handle is about 0.01 T (100 G). The maximum angle at which the PMT can be rotated while inside the bore of the magnet is about 20 degrees. The limitation is due to the length of the tube plus voltage divider.
3. For the fine-mesh PMTs, measure the gain and timing resolution at each of the following magnetic field values and angle orientations with-respect-to the magnetic field direction.
4. For each angle setting take dark current (LED off) and baseline (LED on and magnet off) measurements.

PMT	Field [T]	Angles [degs]
R11102	0 – 0.01	0, 20
H6152-70	0, 0.25, 0.5, 1.0, 1.2, 1.5, 2.0	0, 20, 35, 45, 50
H6614-70		

## To-Do List Prior to July 2015 Run:

1. Check that all PMTs fit inside the Frost Magnet's bore, and that all required angles are possible for each PMT.
2. Determine how to achieve timing resolution results with the system at JLab.
3. Attach the magnetic shields to all three PMTs.
4. Attach connector ends to the cable leads of H6152-70 tube's voltage divider: both BNC and SHV.
5. Characterize the PMTs at UVA without field (?).