



# Jefferson Lab Alignment Group

## Data Transmittal

**TO:** S. Wood, G. Smith, D. Gaskell, D. Mack **DATE:** 29 July 2013

**FROM:** Kelly Tremblay **Checked:** **# :** C1517

**DETAILS:** data: step2b\hallc\qweak\120712A

The upstream and mid collimators for the Qweak experiment were located post run in July of 2012. The data below shows the as-found locations for the center of the collimators, with respect to the Qweak target and from the beamline center. Also shown are the as-found coordinates in the JLab coordinate system as are the angular differences from ideal.

The furthest downstream collimator was not located. See memo C1295 for this data. The ideal coordinates were based on a sketch provided by Paulo Medeiros.

For the found coordinates from Qweak target, a +X value indicates the calculated center of the collimator is to the beam left of the beamline; a +Y is above the ideal beamline.

The dYaw/dPitch/dRoll values are the differences from the ideal values. A positive dYaw is rotated counterclockwise when looked from above; positive dPitch is rotated counterclockwise when looked towards the beam left from beam right; positive dRoll is clockwise about the beam.

The second table shows the ideal coordinates and rotations in the JLab system for the historical target (pivot), the Qweak target, the upstream and downstream collimators.

Colimator	found [mm] from Qweak Target			found Jlab System [meters]			Angular Differences (Degrees)		
	x	y	z	x	y	z	dYaw°	dPitch°	dRoll°
Up Stream	-0.1	-----	742.5	-128.7666	-----	-393.6923	-0.1013	0.0668	-0.0123
Mid	0.1	-----	2716.4	-129.9688	-----	-395.2578	-0.0318	-0.0029	0.0017

Ideal Coordinates - JLAB coordinate system						
	X(meters)	Y(meters)	Z(meters)	Yaw(deg)	Pitch(deg)	Roll(deg)
Historical Target	-124.6220	99.9883	-388.2940	-142.4832	0.0000	0.0000
Qweak Target	-128.3145	99.9883	-393.1032	-142.4832	0.0000	0.0000
Up Stream	-128.7666	99.9883	-393.6922	-142.4832	0.0000	0.0000
Mid	-129.9691	99.9883	-395.2583	-142.4832	0.0000	0.0000