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Azimuthal Uniformity of Cylindrical Implosions on OMEGA<sup>1</sup> DANIEL BARNAK, JONATHAN DAVIES, DAVID HARDING, JONATHAN PEE-BLES, RICCARDO BETTI, University of Rochester, PO-YU CHANG, National Cheng Kung University, JOHN MOODY, BRAD POLLOCK, Lawrence Livermore National Laboratory, EDWARD HANSEN, MARK BONINO, University of Rochester — A laser pointing for an azimuthal uniform cylindrical implosion is determined empirically from x-ray self-emission images of the implosion end-on. The images are decomposed into cylindrical harmonics to determine the degree of uniformity and to measure the transfer of imposed laser intensity modes onto the cylinder. Two cases, one with an imposed mode-5 perturbation and another that is the most azimuthally uniform are compared. Despite a mode-5 persisting for the latter case, the implosion is measured to be uniform to within the resolvable features of the x-ray image. The growth of the modes for the imposed mode-5 case over time demonstrate that mode-5 growth occurs throughout the entire acceleration of the cylindrical shell, with exceptions in the case of shell defects that seed either mode-4 or mode-6 growth. Mode growth is independent of shell thickness and shell outer diameter. In all cases, there is no measurable mode-10 growth, despite the mode-10 amplitude increasing by a factor of 4 from the mode-5 pointing to the uniform pointing.

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