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BLUFF BODY AEROMECHANICS EXPERIMENTS: PRELIMINARY TEST CONDITIONS SUMMARY

http://www.adl.gatech.edu/expaero/bluffbody/

General range of test conditions is given in column 3. Some specific test conditions in column 2. Geometry is in Column1

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Shape & Dimensions (L x W x H, m)	Specific 6-DOF airloads using CR at 1RPM (0.1047 radians/s). 295K≤T≤297K for all tests; U in m/s and Re/m listed.	General test conditions: Airload tests using Continuous Rotation (CR) and some static cases. Swing tests: video and 3 DOF encoders.
CONEX 0.232x0.165 x 0.176	8.89; 573.3K; 575.6K.	Airloads at Re/m = 301K and 828K @ pitch 0 & 10 deg.
Paper-surface AR1 cylinder (L/D=1) Out-of-round: max +2.5%; -1.25% of 0.305m dia.	15.56; 1,016.0K	Tufts at 551K , 2-12 deg. yaw.
PVC cylinder L/D 1: 0.219 dia. Roughness 0.0015mm	6.67; 429.4K; 24.89; 1,600.5K	Loads at 416K < Re/m < 1.61M.
PVC cylinder L/D 0.5: 0.219 dia		Airloads at 416K < Re/m < 1.88M
PVC cylinder L/D 2: 0.219 dia	10.67; 697.0K	Airloads at 416K < Re/m < 1.88M
Flat Plate 0.4 x 0.25 x 0.0032 with centered load 0.089 dia x 0.032 thick	8.89; 569.3K	Airloads and swing tests (impulse response) at 552K < Re/m < 828K. Flat and rounded edge facing flow.
Porous Box 0.419 x 0.246 x 0.178. mcmaster.com/ #9305t87/=q5zzg5	8.89; 577.8K	Loads at 551K < Re/m < 828K at 0 pitch, w& w/o partial obstruction. Swing tests at 471K/m, 2- 14 deg. initial roll.