Email : sales@laboratoryinstrumentindia.com

Product Name :	**Product Code :**
Free and Forced Vortex Unit	LBNY-0005-15800019

Description :

The profile of the vortex formed at the top of the vessel is determined by a gauge, housed on a diametrically mounted bridge piece, which measures the diameter of the vortex at various depths. Free and Forced Vortex Unit for the study of the shape of 'free and forced vortices' consists of a 250 mm diameter cylindrical, transparent vessel 180 mm depth, having two pairs of diametrically opposed inlet tubes of 9.0 mm and 12.5 mm diameter. The 12.5 mm diameter inlet tubes which are angled at 15° to the diameter, so that a swirling motion is imparted to the liquid entering the vessel, are used as entry tubes for the free vortex experiment. The input water from these tubes impinges on a simple two blade paddle which acts as a stirrer/flow straightener. The water 'leaves' the vessel via the 12.5 mm diameter angled tubes which are used as the 'entry' tubes for the free vortex experiment. The two bladed paddle rotates on a vertical shaft supported by a bushed plug, in the hole used as the outlet for the free vortex experiment, and located at the top by a suitable hole in the bridge piece fitting across the diameter of the vessel. A smooth outlet is centrally positioned in the base of the vessel and a set of push-in orifices of 24, 16, 12 and 8 mm diameter is supplied to reduce the outlet diameter to a suitable value. This gives the co-ordinate points required to plot the vortex profile. The forced vortex is created in the vessel described above by using as the inlet the 9 mm bore tubes which are angled at 60° to the diameter. This bridge piece also houses the probes required to determine the co-ordinates of the vortex profile to be measured.

Technical Specification :

Experimental Capability:
Experiment to plot the surface profiles of various forced vortices formed under different speed conditions
Experiment to plot the shape of a free vortex by measurement of the surface profile co-ordinates, and thus verify that vr = constant where v is the speed and r is the radius of the vortex
Verification of the formula $h=(w^2 r^2)/2g$ for forced vortices where h is the height of the surface of the water above

the datum point, w is the vortex angular velocity and r is the vortex radius.

Dimensions And Weights:
Nett: 550 x 350 x 350 mm, 19.5 Kg.