

Pavement Technology, Inc. (PTI)

Presents “The Laboratory Automatic Gradation Unit”



Pavement Technology, Inc. (PTI) Automatic Gradation Unit (AGU) is a particle size analyzer that conducts a complete sieve analysis automatically and transmits the accumulated data to a computer, where the data is saved in an Excel spreadsheet for further manipulation and analysis. The AGU has a carousel (mounted below the weigh hopper) that is used as a material separator. The carousel can accommodate 8-containers (5-gallon buckets) that rotate underneath the discharge hopper. The buckets collect the aggregate. The AGU also has an Automated Loading System that allows a user to stage up to 7 samples (40-45lbs.) for gradation analysis or material separation.

A typical sieving run (typically 10 minutes or less) with the AGU classifies and weighs each sieve, then produces a printout that shows the weights of each sieve, percent retained, percent cumulative, and percent passing. The AGU can accommodate samples up to 40-45 lbs. on 18" x 24" (nominal) screens, and meets ASTM specifications for screen size to sample weight ratio.

The AGU allows a user to automate the entire sieve analysis process and incorporate electronic data transfer. This allows the user to test samples more frequently and with better repeatability so that operator error and labor are minimized. The AGU has vibratory motors that ramp through the optimum resonant frequency for each sieve size. With this unique ability, the AGU will quickly and efficiently grade sample batches of aggregate in less time than would normally be required by conventional shakers using manual weighing and recording techniques.

LABORATORY AUTOMATIC GRADATION UNIT

SPECIFICATIONS:

DIMENSIONS:

Agu Unit: 60"L x 56"W x 120"H. Weight: 1,740lbs.

Automatic Loading System: 70"L x 48"W x 115"H. Weight: 2,840lbs.

Carousel(Material Separator): 60"L x 48"W x 20"H. Weight: 1,020lbs.

Power Panel: 36"L x 48"W x 72"H. Weight: 500lbs.

REQUIREMENTS:

Electrical: 230volt/208volt, 60HZ, 1-Phase

Compressed Air: 552 kPA (80psi minimum)

OPERATIONAL CONTROLS:

A Computer is used to input all controls to the AGU's operating mechanism. The software can select one sieve or any combination of sieves to be emptied and will allow the operator to set sieving time, sieving frequency, cleaning time, and cleaning frequency.

SIEVES:

The AGU is supplied with 7 sieves (18" x 24" nominal), each bolted into a rugged steel frame. The sieve frames are interchangeable and are held in the AGU vibrating cabinet by a secure binding system. Sieves can be changed in minutes using commonly available hand tools. Standard sieves are 37.5mm (1.5"), 25mm (1"), 19mm (3/4"), 12.5mm (1/2"), 9.5mm (3/8"), 4.75mm (#4), and 2.36mm (#8). Additional sizes are available, and the AGU can be supplied with additional screens upon request. Substitution of non-standard screens is available upon initial purchase.

CAROUSEL: (Used for Material Separation)

The AGU is supplied with an 8-position carousel that can accommodate eight 5-gallon buckets. After a sample is separated into different sizes, each screen door opens, and deposits the material into individual 5-gallon buckets that are positioned on the carousel.

AUTOMATED LOADING SYSTEM:

The AGU can be supplied with a 7 position automated loading system that allows a user to stage multiple samples for gradation analysis and material separation. The Automated Loading System deposits each sample into the AGU. After a gradation report is complete the Loading System deposits the next sample and all subsequent samples in the AGU. A user can load 7 samples, turn the AGU on, and have 7 gradations with reports complete in 1 to 1-1/2 hours.