rates that loss of smaller particulates carrying microorganisms is normality (*i.e.*, smaller particulates are not retained in the medium). At the same time high flow rate air samplers only sample for a short time period and relay on a short snapshot of the condition of the area. Samplers running at 28.3 LPM (liters per minute) must operate for a longer period of time than a unit running at 322 LPM. In doing this, they sample a broader spectrum of the drug fill time and present superior data as the sample time takes a larger snapshot of the operation. Samplers that run at 28.3 LPM also provide the ability to capture more smaller particulates that may be lost due to dynamic drag (or an umbrella affect) in higher flow rate units.

[0005] Air sampling systems are generally known, and an air sampling system is offered by Veltek Associates, Inc. known as SMA (Sterilizable Microbiological Atrium) Microbial Air Sampler System. One such system is shown in U.S. Patent Application Nos. 12/068,483, filed Feb. 7, 2008 and 12/402,738, filed March 12, 2009, and the counterpart PCT published application WO2009/100184, ~~the entire contents of which are hereby incorporated by reference~~. As noted in those applications, the air sampler system includes a controller connected to a vacuum pump to control the flow of air to air sampler devices located in the clean room.

[0006] A prior art air sampler device 5 is shown in Figs. 1-2, which is offered by Veltek Associates, Inc. The air sampler device 5 includes a top plate 10 with openings 11 and a bottom plate 14. The bottom plate 14 has a circular ridge 16 on the top surface, which receives a Petri dish 12. The underside of the bottom plate 14 has a circular channel 20 (best shown in Fig. 2) which communicates with an air port 22. A metal cover plate 26 fits over the underside of the bottom plate 14, and a rubber gasket 24 is positioned between the bottom plate 14 and the cover plate 26 to provide an airtight seal. Screws are used to secure the cover plate 26 and gasket 24 to the bottom plate 14. In addition, a circular rubber gasket (not shown, but having the shape of a

should be appreciated, however, that the size of the holes 112 can vary within the spirit of the invention, and the number of holes 112 may be more or less than 283. Preferably, however, there are at least 100-150 holes, and more preferably at least 200 holes, with each hole being less than 0.01 inches and preferably 0.007-0.009 inches in diameter. Preferably, however, the holes 112 comprise less than about ≠1%, of the surface area of the vent plate 110 (*i.e.*, the area in which the holes are located).

[0035] By having small holes 112 in the top plate 100, air is drawn into the sampler 50 at a high flow rate (about 67.20 m/s per hole) and volume (about 1.67E-06 m^3/s per hole), while keeping the flow rate at 1 CFM (or 28.3 cubic liters per minute) at the air port 160 to provide a longer sampling time. The flow rate of the air as it is drawn into the holes 112 is about 28.3 LPM or 1 CFM or through each hole 0.1 is LPM. The total for the top plate 100 is about 0.000472 m^3/s. Particle sizes of about 0.2-9 microns may be reflected, while 10+ microns are deposited. Particles of 0.2-9.0 microns can be swept away from dynamic drag if the airflow is too high, so that airflow is reduced to capture those smaller particulates. The sampler 50 has an efficiency loss of about 5.6-7.2%, which is much lower than conventional samplers which have an average loss of approximately 20%.

[0036] The faster air flow at the holes 112 provides higher capture realization in the material located in the Petri dish 52 since the particles can't bounce off of the capture material. The sampler 50 will capture particles which are approximately 0.5-30 μm in size. The well 158 is one inch in diameter, and about 3/8 inches deep from the top surface 152. The slots 156 are about 0.25 inches wide and the distal end 159 of the slots 156 extends 1/8 inch into the ridge 154. The ridge 154 is 0.25 inches wide. Though six slots 156 are provided, more or fewer slots can also be utilized. The sampler 50 can be utilized with the sampling system shown in