

Forward and Reverse Airflow

The Vega PSU is primarily designed to be forced air cooled by its internal 60x60x25mm fan. It is possible to specify models without the internal fan. Airflow direction can be specified as either 'forward' in which case air is drawn in at the fan grille and exhausted from the module end, or 'reverse' where air is drawn in at the module end and exhausted via the fan grille. The operating ambient temperature is taken to be the temperature at the air intake.

Forward or reverse airflow must be specified at the time of purchase.

Fan Servicing / replacement

The fan assembly is not intended to be a field replaceable part and removal of this assembly is likely to invalidate any warranty and safety approval certification.

Where the fan needs to be field replaceable or where suitable system airflow exists, it is possible to use an external source of cooling air and specify the Vega PSU without fan. In this case, it would be necessary to conduct a full thermal test in the end application to verify that the PSU internal parts are within acceptable limits.

Power Derating

Forward airflow provides the highest power rating from the PSU with most reverse airflow configurations having a derated output power.

Reverse airflow however, can sometimes provide higher reliability to air borne contaminants due to the higher intake volume and corresponding lower intake air speed.

The direction of airflow through the PSU should not oppose any external circulating airflow in the end system.

Installation for best airflow

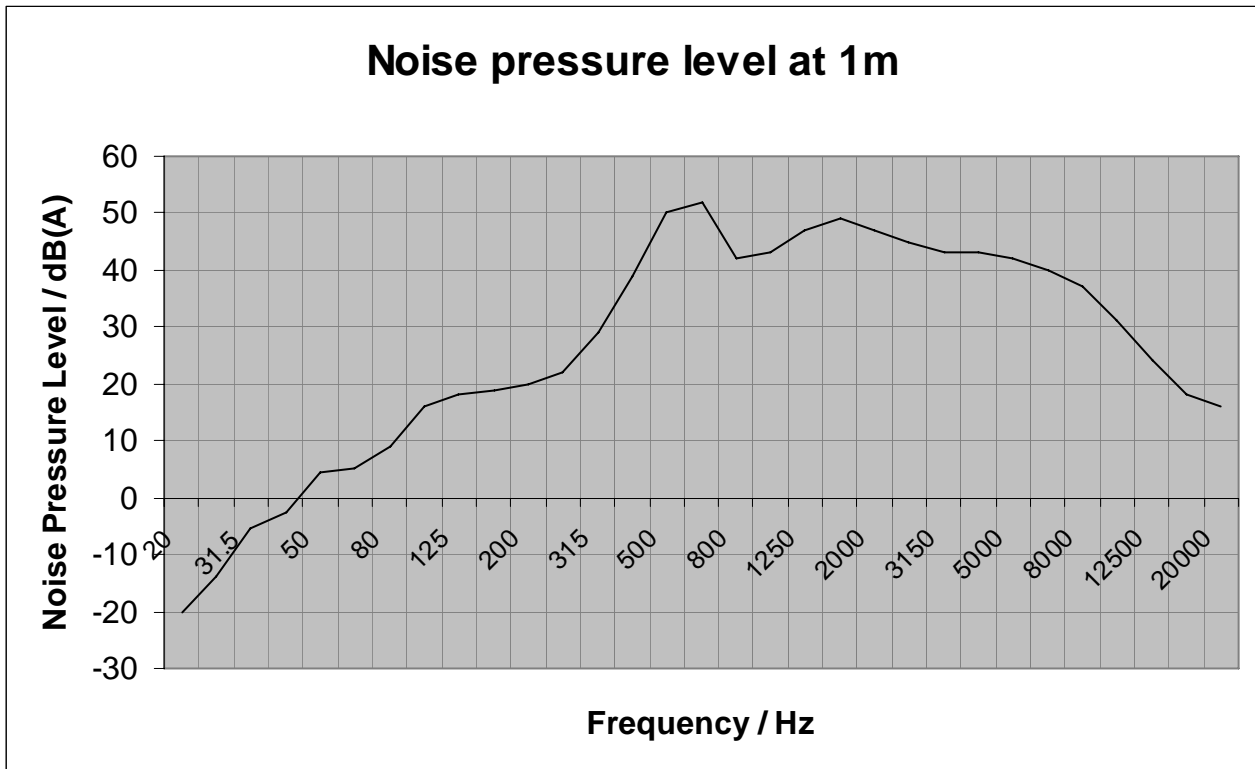
In both forward and reverse flow, adequate cooling can only be maintained by ensuring that obstructions to airflow are kept 50mm from the fan end and 50mm from the module end of the power supply where air is drawn in / exhausted.

Always design a system so that the coolest possible air is routed to the intake of the power supply. Try and avoid using "re-circulated air" by having highly enclosed boxes with the exhaust in the box itself. A clear flow path from an intake of the coolest available air (ie outside of an installation box), through power supply and exhausted back out into the same air is always best. Where Vega is used in a fully enclosed box with re-circulating air it is important to ensure that the air temperature being drawn into the Vega itself is sufficiently cool.

Audible noise

The graph below shows a typical spectrum of noise pressure level for the standard forward airflow cooling fan option.

Measurements have been taken at a distance of 1m from the fan grille with a background noise level of approximately 38dB.



The quiet fan option is typically 5dB(A) lower than the standard airflow version.
Reverse airflow configurations are typically 5dB(A) higher than the standard airflow version.

Restricting the air intake by placing (for example) another grill in front of the fan can cause a "chopping" effect created by non-planar flow of the air into the fan which is likely to increase the audible noise as well as reduce airflow.