Example of how to size a BPS using the following parameters:

1. Max primary airflow is 2000 CFM.
2. Min primary airflow is 1000 CFM.
3. Inlet static pressure is 0.5”.
4. Downstream static pressure drop is 0.2”.
5. Radiated NC to be less than 40.
6. Discharge NC to be less than 30.

Step 1
Compare Max and Min airflow to ranges found on page 6. Sizes 12 and 14 both fall within the published ranges.

Step 2
Check if there is sufficient static pressure. For size 12 at 2000 CFM, static pressure drop is 0.025 from page 6. For size 14 at 2000 CFM, static pressure drop is 0.013. Unit static pressure drop is then added to the downstream static pressure drop and compared to the inlet static pressure. The sum of pressures for both the size 12 and the 14 are less than the inlet static pressure available. Therefore, both are still valid possibilities.

Step 3
The acoustical requirements are checked against the radiated and discharge tables on page 6. For size 12, the discharge NC is 21 and the radiated NC is 42. This does not meet the requirement for the radiated NC to be less than 40. For size 14, the discharge NC is less than 20 and the radiated NC is 30. Since the size 14 was the only size to meet all requirements, the size 14 would be the best choice for this example.

Comments on oversizing a terminal unit
Typically when increasing a unit size, the static pressure and sound power levels both decrease. Although this can be beneficial in some applications, caution needs to be taken when oversizing a unit. The damper controls the airflow most effectively in the upper range of the published airflow.