Square diffuser for use with VAV box shall be constructed of electro-galvanized steel with blades arranged in radial pattern to provide horizontal swirl air discharge that adheres tightly to the ceiling from minimum to maximum design airflow. To prevent air dumping, minimum airflow shall not be below 50 per cent of the design airflow. Supplier shall submit for approval complete list of diffusers indicating its location, size, design airflows, its compliance with specified pressure loss, room NC and throw to ensure its selection fully comply with project requirements. Supplier shall submit laboratory test report to show how its diffuser performance data are obtained according to the specified test standard.

A small access opening shall be located on the diffuser face for adjustment of damper for balancing from the room side without removal of the faceplate. A cap shall be provided to cover the opening after balancing is completed. Where severe balancing is required, a damper shall be located upstream at the duct takeoff to avoid generated noise from disc dampening.

The diffuser shall be designed for installation on inverted tee bar ceiling of nominal sizes 600 X 600 or 1200 X 600 mm or surface mounted on plaster ceiling. Each supply diffuser shall be mounted to a circular adaptor that shall be internally insulated with 12 mm thick fire retardant closed cell foam. Square adaptor shall not be acceptable. Externally the diffuser shall be insulated behind the diffuser face with 6 mm thick closed cell foam and up to 25 above the diffuser neck with 12 mm thick similar insulation. For installation on inverted tee bar, the diffuser shall be suspended from the soffit from above and the weight of diffuser shall not rest on the ceiling frame. For installation on plaster ceiling the diffuser and adaptor shall be securely mounted to the plaster ceiling according the manufacturer recommendation and the diffuser is suspended from the soffit from above.

Matching return air diffuser shall be installed without adaptor for ceiling return. For ducted return, the adaptor shall be provided. All air diffusers shall be powder coated to baked white enamel RAL 9010.

Air diffuser shall be of approved brand and sample shall be submitted for approval before ordering.