

Filters shall be sized at 2.5 m/s (500 FPM) maximum face velocity. Filter media shall be fabricated so that fibrous shedding does not exceed levels prescribed by ASHRAE 52. The filter housing and all air-handling components downstream shall not be internally lined with fibrous insulation. Double-wall construction or an externally insulated sheet metal housing is acceptable. The filter change-out pressure drop, not the initial clean filter rating, must be used in determining fan pressure requirements. Differential pressure gauges and sensors shall be placed across each filter bank to allow quick and accurate assessment of filter dust loading as reflected by air-pressure loss through the filter and sensors shall be connected to building automation system.

UVC Emitters/Lamps: Ultraviolet light (C band) emitters/lamps shall be incorporated downstream of all cooling coils and above all drain pans to control airborne and surface microbial growth and transfer. Applied fixtures/lamps must be specifically manufactured for this purpose. Safety interlocks/features shall be provided to limit hazard to operating staff.

Access Doors: Access Doors shall be provided at air handling units downstream of each coil, upstream of each filter section and adjacent to each drain pan and fan section. Access doors shall be of sufficient size to allow personnel to enter the unit to inspect and service all portions of the equipment components.

Plenum Boxes: Air-handling units shall be provided with plenum boxes where relief air is discharged from the air-handling unit. Plenum boxes may also be used on the return side of the unit in lieu of a mixing box. Air-flow control dampers shall be mounted on the ductwork connecting to the plenum box.

Mixing Boxes: Air-handling units shall be provided with mixing boxes where relief air is discharged from the air-handling unit. Mixing boxes may also be used on the return side of the unit in lieu of a plenum box. Air flow control dampers shall be mounted within the mixing box or on the ductwork connecting to the mixing box.

Terminals. VAV terminals shall be certified under the ARI Standard 880 Certification Program and shall carry the ARI Seal. If fan-powered, the terminals shall be designed, built, and tested as a single unit including motor and fan assembly, primary air damper assembly and any accessories.

VAV terminals shall be pressure-independent type units.

Units shall have BACnet or LONWORKS self-contained controls.

Fan-powered terminals: Fan-powered terminals shall utilize speed control to allow for continuous fan speed adjustment from maximum to minimum, as a means of setting the fan airflow. The speed control shall incorporate a minimum voltage stop to ensure the motor cannot operate in the stall mode.

All terminals shall be provided with factory-mounted direct digital controls compatible and suitable for operation with the BAS.

Air Delivery Devices. Terminal ceiling diffusers or booted-plenum slots should be specifically designed for VAV air distribution. Booted plenum slots should not exceed 1.2 meters (4 feet) in length unless more than one source of supply is provided. “Dumping” action at reduced air volume and sound power levels at maximum