**Specifications of the SAL 50**

**1. Description and physical characteristics**

1.1 The high induction linear diffuser shall be made of extruded aluminum profiles.

1.2. The 150 mm long eccentric rollers shall have an alphanumeric identification which will permit the adjustment of the air flow pattern over 180 degrees.

1.3. The diffuser shall be adapte to fit regular North American suspended ceilings, classic gypsum ceilings or wall installation.

1.4. The diffuser shall be supplied with a wide or narrow profile.

1.5. The diffuser shall be powder coated with a polyester TGIC-free paint, providing a smooth, easy-to-clean, chip and fade resistant finish. The architect or client shall choose a standard colour from the RAL colour chart.

**2 - Performance**

2.1. The performance shall be guarantee by using performance curves or simulation software for critical areas. These shall indicate the pressure drop, acoustic power it generates as well as showing a cross-sectional view illustrating the critical airflow path in cooling, isothermal and heating modes.

2.2. Parameters of guaranteed comfort

 2.2.1 The performance statistics of the diffuser shall reflect a maximum air speed of 0.15 m/s (30 ft/m) in occupied zone at 1.3m (4 ft) from the floor. The performance guarantee shall be demonstrated with performance curves showing the path of the air stream.

 2.2.2 The diffuser shall ensure a maximum variant in temperature difference of -1°C between the air jet and the occupied area 4 ft (1.3 m) above the floor. To achieve this, the ratio of temperature differential shall perform at minimum of ΔTxy / ΔT0 ≤ 0.1 (for an initial differential at ∆T0 = -10˚C).

 2.2.3. In cooling, the diffuser shall guarantee in variable volume (VAV) a critical distance (Xcrit) of at least that which is indicated in the following table :

**Diffuser inlet** : 6 in.

 Maximum air flow : 80-150 cfm

 Minimum air flow: 20-40 cfm

 X critic : 1ft.-7 in. (0,5 m)

**Diffuser inlet** : 8 in.

 Maximum air flow : 151-280 cfm

 Minimum air flow : 41-90 cfm

 X critic : 1 ft.--11 in. (0,6 m)

**Diffuser inlet**: 10 in.

 Maximum air flow : 281-400 cfm

 Minimum air flow : 91-140 cfm

 X critic : 2 ft.--3 in. (0,7 m)

**Diffuser inlet**: 12 in.

 Maximum air flow : 401-600 cfm

 Minimum air flow : 141-200 cfm

 X critic : 2 ft.--7 in. (0,8 m)

**3 - Plenum**

3.1 The diffuser shall include a plenum provided by the manufacturer. The plenum shall be made from 24 gauge galvanised steel and comprises suspension points at the four corners. The inlet collar shall be centred on the side and adapted to the air flow. The interior joints of the plenum joints shall be assembled by clinching and sealed with silicon.

3.2 When required, the plenum shall be supplied with a damper adjustable through the finished side of the front plate, in order to adjust the volume of air. This damper shall be available in two options:

 3.2.1 Radial damper: Key with circular pivoting blades on a flexible metallic cable which is adjustable through the front plate of the diffuser allowing for air flow adjustment of 0% to 100%.

 3.2.2 Spring key: Pivotally perforated plate at the inlet adjustable with a spring mechanism through the front of the diffuser.

**4 - Balancing**

4.1 The balancing shall be executed by a ventilation balancing technician with a recognised professional certification.

4.2 The technician shall take into account the factor of correction for the volume of air using a balometer (factor FCB).

**5 - Required quality : NAD Klima SAL 50 model.**