|  |
| --- |
| Duct Sizing Table |
| **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** |
| **Section** | **Length****(m)** | **Flow Rate****(m3/s)** | **Pressure drop per****metre****(Pa/m)** | **Duct****Size****(mm)** | **Velocity****(m/s)** | **Velocity****Pressure****(Pa)** | **Fittings****pressure loss****factor or**** (zeta) factor** | **Pressure Loss** | **Total Pressure Loss** **(Pa)** | **Cumulative Pressure****Loss****(Pa)** |
| **Fittings****(Pa)** | **Straight Duct****(Pa)** |
| A | 10 | 1.2 | 1.0 | 0.47 m dia.(0.47/2)2 /0.350 = 0.4957500 x 350mm | 1.2 / (0.5 x 0.35)=6.86 | 0.5 x 1.2 x 6.862 =28.2 | **Intake louvre** = 6.5 **Bend** = 0.67Reduction to section B will go in downstream section (B).TOTAL = 7.17 | 28.2 x 7.17 =202 | 1. x 10

= 10 | 202 + 10= 212 | **212** |
| B | 3 | 0.9 | 1.0 | 0.43 m dia.425 x 350mm | 6.05 | 22.0 | **Branch** Index Circuit is straight through (VP1 to VP2) .The VP ratio VP2/VP1 = 22 / 28.2= 0.78*The zeta* factor from EXAMPLES OF zeta FACTORS is 0.09**Reduction**  = 0.2 for taper on one side.TOTAL = 0.29 |   0.29 x 22 = 6 |   3 |   9 |   **221** |
| C | 6 | 0.6 | 1.0 | 0.37 m dia.325 x 350mm | 5.28 | 16.7 | **Branch**VP ratio = 16.7 / 22 = 0.76zeta factor = 0.16 by interpolation**Reduction**  = 0.2 for taper on one side.TOTAL = 0.36 |  6 |  6 |  12 |  **233** |
| D | 8 | 0.3 | 1.0 | 0.28 m dia.175 x 350mm | 4.90 | 14.4 | **Branch**VP ratio = 14.4 / 16.7 = 0.86zeta factor = 0.08 by interpolation**Reduction**  = 0.2 for taper on one side.**Bend** = 0.67**Outlet diffuser** = 3.5 TOTAL = 4.45 |  64 |  8 |  72 |  305 |