

PROGRAMA COND89 GRUPO DE FRIO Y CLIMATIZACION
HOJA DE RESULTADOS 08-06-2004

CONDICIONES INICIALES

TEMPERATURA °C 18.7
CAUDAL m3/h 104252.0
VELOCIDAD m/s 12.0

ENTRADA

CONDUCTO RECTANGULAR

MATERIAL: (mm) 0.150
RUGOSIDAD ABSOLUTA (mm) 0.150
DIMENSIONES (cm) 100 x 275
LONGITUD (m) 8.5
LONGITUD EQUIV. ACCESORIOS (m) 93.2
LONGITUD EQUIVALENTE TOTAL (m) 101.7
PERDIDA DE CARGA UNITARIA (mm.c.a./m.) 0.054
PERDIDA DE CARGA TOTAL (mm.c.a.) 5.47
SECCION DE ENTRADA (cm²) 27500
MATERIAL NECESARIO EN LA ENTRADA (m³) 76.5

PERDIDAS

| TRAMO | CAUDAL | m/s | u | W | m | mm.c.a./m | mm.c.a. |
|-------|--------|------|-------|--------------|------------|---------------|---------|
| | | VEL. | LONG. | LONG. ACCES. | LONG. TOT. | PERD. UNITAR. | TOTALES |
| -> 0 | 6000 | 6.4 | 1.3 | 7.8 | 9.0 | 0.061 | 0.55 |
| -> 0 | 12000 | 7.3 | 1.3 | 11.0 | 12.2 | 0.055 | 0.68 |
| -> 2 | 86252 | 11.4 | 5.3 | 0.0 | 5.3 | 0.053 | 0.28 |
| -> 0 | 6000 | 6.4 | 1.3 | 7.8 | 9.0 | 0.061 | 0.55 |
| -> 0 | 12000 | 7.3 | 1.3 | 11.0 | 12.2 | 0.055 | 0.68 |
| -> 3 | 68252 | 10.9 | 5.3 | 0.0 | 5.3 | 0.055 | 0.29 |
| -> 0 | 6000 | 6.4 | 1.3 | 7.8 | 9.0 | 0.061 | 0.55 |
| -> 0 | 12000 | 7.3 | 1.3 | 11.0 | 12.2 | 0.055 | 0.68 |
| -> 4 | 80252 | 10.0 | 5.3 | 0.0 | 5.3 | 0.053 | 0.28 |

4 -> 0 6000 6.4 1.3 7.8 9.0 0.061 0.55
4 -> 0 12000 7.3 1.3 11.0 12.2 0.055 0.68
4 -> 5 32252 9.1 5.3 0.0 5.3 0.054 0.29

5 -> 0 6000 6.4 1.3 7.8 9.0 0.061 0.55
5 -> 0 12000 7.3 1.3 11.0 12.2 0.055 0.68
5 -> 6 14252 7.8 5.0 15.2 20.2 0.060 1.21

6 -> 0 6000 6.4 1.0 7.8 8.8 0.061 0.53
6 -> 7 8252 6.4 4.5 0.0 4.5 0.050 0.22

7 -> 0 6000 6.4 1.0 11.6 12.6 0.061 0.76
7 -> 0 2252 4.8 1.0 7.6 8.6 0.051 0.43

PERDIDA DE CARGA MAXIMA (mm.c.a.) : 7.82
CORRESPONDIENTE A LA LINEA DESDE LA ENTRADA A:
1- 2- 3- 4- 5- 0

DIMENSIONES DE LA INSTALACION

| TRAMO | (m) | (cm) | (mm.c.a.) | (cm²) | (m³) |
|--------|----------|-------------|---------------|---------|----------|
| | LONGITUD | DIMENSIONES | PRES. DISPON. | SECCION | MATERIAL |
| 1 -> 0 | 1.3 | 100 x 30 | 1.80 | 3000 | 3.9 |
| 1 -> 0 | 1.3 | 100 x 50 | 1.68 | 5000 | 4.5 |
| 1 -> 2 | 5.3 | 100 x 235 | | 23500 | 42.9 |
| 2 -> 0 | 1.3 | 100 x 30 | 1.92 | 3000 | 3.9 |
| 2 -> 0 | 1.3 | 100 x 50 | 1.39 | 5000 | 4.5 |
| 2 -> 3 | 5.3 | 100 x 190 | | 19000 | 37.1 |
| 3 -> 0 | 1.3 | 100 x 30 | 1.23 | 3000 | 3.9 |
| 3 -> 0 | 1.3 | 100 x 50 | 1.10 | 5000 | 4.5 |
| 3 -> 4 | 5.3 | 100 x 150 | | 15000 | 32.0 |
| 4 -> 0 | 1.3 | 100 x 30 | 0.95 | 3000 | 3.9 |
| 4 -> 0 | 1.3 | 100 x 50 | 0.82 | 5000 | 4.5 |
| 4 -> 5 | 5.3 | 100 x 105 | | 10500 | 26.2 |
| 5 -> 0 | 1.3 | 100 x 30 | 0.66 | 3000 | 3.9 |
| 5 -> 0 | 1.3 | 100 x 50 | 0.53 | 5000 | 4.5 |
| 5 -> 6 | 5.0 | 100 x 55 | | 5500 | 18.6 |
| 6 -> 0 | 1.0 | 100 x 30 | 7.29 | 3000 | 3.1 |
| 6 -> 7 | 4.5 | 100 x 40 | | 4000 | 15.1 |

| | | | | | | |
|---|------|-----|----------|------|------|-----|
| 7 | -> 0 | 1.0 | 100 x 30 | 6.84 | 3000 | 3.1 |
| 7 | -> 0 | 1.0 | 35 x 40 | 7.17 | 1400 | 1.8 |

SUPERFICIE ESTIMADA DE MATERIAL:

298.4 m²