Cooling or Heating Coil Face Area and Size

Face area of a cooling or heating coil from air flow and design face velocity, with the coil width for a chosen height and the actual velocity.

Method: Continuity A = V̇ / v

Input parameters

Unit system: SI

Parameter	Value	Unit
Air flow	18,000	m³/h
Design face velocity Cooling coils are kept low (often 2–2.5 m/s) to avoid carrying condensate.	2.5000	m/s
Coil height	900.00	mm
Chosen width (0 to use the width found)	2,400.0	mm

Calculated results

Parameter	Value	Unit
Face area needed	2.0000	m²
Width needed for the height	2,222.2	mm
Face velocity with the chosen size	2.3148	m/s

Formula and method

$$A = \frac{\dot{V}}{v_f}, \quad W = \frac{A}{H}$$

Variables

$\dot{V}$	Air flow	m³/s
v_f	Design face velocity	m/s
H	Coil height	m
W_c	Chosen width (0 to use the width found)	m
A	Face area needed	m²
W	Width needed for the height	m
v_a	Face velocity with the chosen size	m/s

Method and standards

Continuity.

Assumptions and limits

- Uniform face velocity.

References

- Continuity A = V̇ / v

Report details

Report reference	FCC-45Q5-4K36 (the same inputs always give the same reference)
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Calculator	Cooling or Heating Coil Face Area and Size
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Software release	FireCAD Calc, release of 17 November 2026
Release checks	2 reference cases of this calculator, computed independently, are checked on every release

Results are for engineering estimation. Verify critical designs against the referenced standards and your own data.

This calculator online

https://calc.firecad.com/hvac/psychrometry/coil-face-area

Open this case on calc.firecad.com →

Reopens the calculator with the inputs of this report.