Loom Production: Metres and Picks per Hour

Fabric production of a loom from speed in picks per minute, picks per cm and efficiency, with the picks inserted per hour and fabric mass per hour.

Method: Definitions and mass and energy balances

Input parameters

Unit system: SI

Parameter	Value	Unit
Loom speed (picks per minute)	700.00	
Picks per cm	30.000	
Loom efficiency	88.000	%
Fabric mass per m²	120.00	g/m²
Fabric width	1.9000	m

Calculated results

Parameter	Value	Unit
Fabric produced	12.320	m/h
Picks inserted per hour	36,960	
Fabric mass	2.8090	kg/h

Formula and method

$$L = \frac{60\,n\,\eta}{100\,n_p} \quad (L \text{ in m/h},\ n \text{ in picks/min},\ n_p \text{ in picks/cm}), \quad n_h = 60\,n\,\eta, \quad \dot{m} = L\,W\,G$$

Variables

n	Loom speed (picks per minute)	-
n_p	Picks per cm	-
η	Loom efficiency	-
G	Fabric mass per m²	kg/m²
W	Fabric width	m
L	Fabric produced	m/s
n_h	Picks inserted per hour	-
$\dot{m}$	Fabric mass	kg/s

Method and standards

Weaving production definition.

Assumptions and limits

- Steady running.

References

- Definitions and mass and energy balances

Report details

Report reference	FCC-4DJP-AHFG (the same inputs always give the same reference)
Generated	17 November 2026, 19:37 UTC
Calculator	Loom Production: Metres and Picks per Hour
Method last reviewed	13 November 2026
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/chemical/textile-rice-oil/loom-production

Open this case on calc.firecad.com →

Reopens the calculator with the inputs of this report.