

EMF Calculator

Machine configuration

Printer geometry:

Delta

Supply voltage:

24

V

Motor current:

1000

mA

Requested max. speed:

200

mm/s

Number of motors connected in series:

1

Motor properties

Motor preset:

Custom

Motor step angle:

1.8° (200 steps)

Rated holding torque:

45

N.cm

Rated current:

1680

mA

Phase resistance:

2

Ω

Phase inductance:

2,5

mH

Drive

Microstepping:

x16

Axis is driven by:

Belt

Leadscrew

Belt preset:

GT2 (2mm)

Belt pitch:

2

mm

Pulley teeth:

20

Steps per mm:

80,000

Approximate peak back EMF due to rotation per motor: **10.1 V** at 200.0 mm/s

Approximate peak back EMF due to inductance per motor: **6.7 V** at 200.0 mm/s

Step pulse frequency: **16.0 kHz** at 200.0 mm/s

Speed at which torque starts to drop (low slip angle): 281.9 mm/s @ 38.3 kHz

Speed at which torque starts to drop (high slip angle): 377.0 mm/s @ 51.3 kHz