

NFP-GM15-N20W

12mm N20 geared motor with protective dust guard



- 1. 12mm N20 geared DC motor supplied with a protective shield for the gearbox and motor body.
- 2. Published motor configurations cover 3V, 6V, and 12V DC options from 0.2W to 1.4W.
- 3. Gear ratios from 10:1 through 380:1 support speed and torque matching for compact mechanisms.
- 4. Standard 3mm output shaft with 9mm shaft length for small automation, robotics, toys, and instruments.
- 5. Low-power operation supports battery-powered projects and compact embedded equipment.

3V-12V VOLTAGE RANGE	21-2150rpm NO-LOAD SPEED	0.2W-1.4W OUTPUT POWER	Dia. 3 x L9mm OUTPUT SHAFT
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PRODUCT SPECIFICATIONS

Motor Model	NFP-GM15-N20W	Rated Voltage	3V / 6V 12V DC
No-load Speed	21rpm - 2,150rpm	No-load Current	0.03A / ≤0.04A / ≤0.045A / ≤0.055A
Output Power	0.2W - 1.4W	Shaft Diameter	Φ3mm x L9mm
Rotation	CW / CCW	Weight	appr. 10g

3V DC, 0.2W, 26 TYPE

No-load speed tolerance: +/-15%

Ratio	No-load Current	No-load Speed	Rated Current	Rated Speed	Rated Torque	Stall Current	Stall Torque
10:1	≤0.045A	810rpm	≤0.14A	460rpm	0.025kg.cm	≤0.75A	0.06kg.cm
20:1	≤0.045A	405rpm	≤0.14A	240rpm	0.1kg.cm	≤0.75A	0.12kg.cm
30:1	≤0.045A	270rpm	≤0.14A	160rpm	0.075kg.cm	≤0.75A	0.15kg.cm
50:1	≤0.045A	162rpm	≤0.14A	90rpm	0.12kg.cm	≤0.75A	0.4kg.cm
100:1	≤0.045A	81rpm	≤0.14A	47rpm	0.25kg.cm	≤0.75A	0.8kg.cm
150:1	≤0.045A	54rpm	≤0.14A	32rpm	0.35kg.cm	≤0.75A	1kg.cm
210:1	≤0.045A	38rpm	≤0.14A	23rpm	0.5kg.cm	≤0.75A	1.3kg.cm
298:1	≤0.045A	27rpm	≤0.14A	16rpm	1kg.cm	≤0.75A	1.8kg.cm
380:1	≤0.045A	21rpm	≤0.14A	12rpm	1.2kg.cm	≤0.75A	2kg.cm

3V DC, 0.5W, 45 TYPE

No-load speed tolerance: +/-15%

Ratio	No-load Current	No-load Speed	Rated Current	Rated Speed	Rated Torque	Stall Current	Stall Torque
10:1	≤0.045A	1,200rpm	≤0.27A	780rpm	0.04kg.cm	≤0.65A	0.1kg.cm
20:1	≤0.045A	600rpm	≤0.27A	390rpm	0.08kg.cm	≤0.65A	0.2kg.cm
30:1	≤0.045A	400rpm	≤0.27A	260rpm	0.12kg.cm	≤0.65A	0.3kg.cm
50:1	≤0.045A	240rpm	≤0.27A	150rpm	0.2kg.cm	≤0.65A	0.5kg.cm
100:1	≤0.045A	120rpm	≤0.27A	80rpm	0.4kg.cm	≤0.65A	1kg.cm
150:1	≤0.045A	80rpm	≤0.27A	52rpm	0.6kg.cm	≤0.65A	1.5kg.cm
210:1	≤0.045A	57rpm	≤0.27A	37rpm	0.8kg.cm	≤0.65A	2kg.cm
298:1	≤0.045A	40rpm	≤0.27A	26rpm	1.2kg.cm	≤0.65A	3kg.cm
380:1	≤0.045A	32rpm	≤0.27A	20rpm	1.6kg.cm	≤0.65A	3.5kg.cm

6V DC, 0.4W, 35 TYPE

No-load speed tolerance: +/-15%

Ratio	No-load Current	No-load Speed	Rated Current	Rated Speed	Rated Torque	Stall Current	Stall Torque
10:1	≤0.04A	1,050rpm	≤0.1A	750rpm	0.02kg.cm	≤0.3A	0.1kg.cm
20:1	≤0.04A	525rpm	≤0.1A	375rpm	0.04kg.cm	≤0.3A	0.16kg.cm
30:1	≤0.04A	350rpm	≤0.1A	250rpm	0.06kg.cm	≤0.3A	0.24kg.cm
50:1	≤0.04A	210rpm	≤0.1A	150rpm	0.1kg.cm	≤0.3A	0.4kg.cm
100:1	≤0.04A	105rpm	≤0.1A	75rpm	0.2kg.cm	≤0.3A	0.8kg.cm
150:1	≤0.04A	70rpm	≤0.1A	50rpm	0.3kg.cm	≤0.3A	1.2kg.cm
210:1	≤0.04A	50rpm	≤0.1A	35rpm	0.4kg.cm	≤0.3A	1.6kg.cm
298:1	≤0.04A	35rpm	≤0.1A	25rpm	0.6kg.cm	≤0.3A	2.3kg.cm
380:1	≤0.04A	28rpm	≤0.1A	20rpm	0.75kg.cm	≤0.3A	3kg.cm

6V DC, 0.6W, 26 TYPE

No-load speed tolerance: +/-15%

Ratio	No-load Current	No-load Speed	Rated Current	Rated Speed	Rated Torque	Stall Current	Stall Torque
10:1	≤0.045A	1,650rpm	≤0.23A	980rpm	0.05kg.cm	≤0.55A	0.11kg.cm
20:1	≤0.045A	825rpm	≤0.23A	490rpm	0.1kg.cm	≤0.55A	0.22kg.cm
30:1	≤0.045A	550rpm	≤0.23A	326rpm	0.15kg.cm	≤0.55A	0.35kg.cm
50:1	≤0.045A	330rpm	≤0.23A	193rpm	0.25kg.cm	≤0.55A	0.6kg.cm
100:1	≤0.045A	165rpm	≤0.23A	98rpm	0.5kg.cm	≤0.55A	1.1kg.cm
150:1	≤0.045A	110rpm	≤0.23A	65rpm	0.75kg.cm	≤0.55A	1.8kg.cm
210:1	≤0.045A	78rpm	≤0.23A	46rpm	1kg.cm	≤0.55A	2.5kg.cm
298:1	≤0.045A	54rpm	≤0.23A	32rpm	1.5kg.cm	≤0.55A	2.5kg.cm
380:1	≤0.045A	43rpm	≤0.23A	25rpm	1.9kg.cm	≤0.55A	2.5kg.cm

Performance Data

Published rows for 3V DC, 0.2W, 26 type and 3V DC, 0.5W, 45 type

12V DC, 0.6W, 05 TYPE

No-load speed tolerance: +/-15%

Ratio	No-load Current	No-load Speed	Rated Current	Rated Speed	Rated Torque	Stall Current	Stall Torque
10:1	≤0.03A	1,500rpm	≤0.07A	1,200rpm	0.02kg.cm	≤0.3A	0.1kg.cm
20:1	≤0.03A	750rpm	≤0.07A	600rpm	0.04kg.cm	≤0.3A	0.16kg.cm
30:1	≤0.03A	500rpm	≤0.07A	400rpm	0.06g.cm	≤0.3A	0.24kg.cm
50:1	≤0.03A	300rpm	≤0.07A	240rpm	0.1kg.cm	≤0.3A	0.4kg.cm
100:1	≤0.03A	150rpm	≤0.07A	120rpm	0.2kg.cm	≤0.3A	0.8kg.cm
150:1	≤0.03A	100rpm	≤0.07A	80rpm	0.3kg.cm	≤0.3A	1.2kg.cm
210:1	≤0.03A	71rpm	≤0.07A	57rpm	0.4kg.cm	≤0.3A	1.6kg.cm
298:1	≤0.03A	50rpm	≤0.07A	40rpm	0.6kg.cm	≤0.3A	2.3kg.cm
380:1	≤0.03A	39rpm	≤0.07A	31rpm	0.75kg.cm	≤0.3A	3kg.cm

12V DC, 1.4W, 35 TYPE

No-load speed tolerance: +/-15%

Ratio	No-load Current	No-load Speed	Rated Current	Rated Speed	Rated Torque	Stall Current	Stall Torque
10:1	≤0.055A	2,150rpm	≤0.2A	1,450rpm	0.05kg.cm	≤0.5A	0.13kg.cm
20:1	≤0.055A	1,075rpm	≤0.2A	720rpm	0.1kg.cm	≤0.5A	0.26kg.cm
30:1	≤0.055A	717rpm	≤0.2A	480rpm	0.15kg.cm	≤0.5A	0.39kg.cm
50:1	≤0.055A	430rpm	≤0.2A	290rpm	0.25kg.cm	≤0.5A	0.7kg.cm
100:1	≤0.055A	215rpm	≤0.2A	145rpm	0.5kg.cm	≤0.5A	1.3kg.cm
150:1	≤0.055A	143rpm	≤0.2A	95rpm	0.75kg.cm	≤0.5A	2kg.cm
210:1	≤0.055A	102rpm	≤0.2A	70rpm	1kg.cm	≤0.5A	2.7kg.cm
298:1	≤0.055A	72rpm	≤0.2A	48rpm	1.5kg.cm	≤0.5A	3kg.cm
380:1	≤0.055A	57rpm	≤0.2A	38rpm	1.9g.cm	≤0.5A	3kg.cm

OUTLINE DRAWING

