

## Report calculated on Test Bench Results

Motor type: **ADVANCE 1-30-B12 P14**

Date: 23.09.2024

Bearing type: regular

Controller: Common ESC

### Measuring Parameter

Voltage: **15.0 [V]**

Throttle setting: 100%

### Calculated Motor Constants

nl: 6,124.5 [RPM]    lo: 3.2 [A]    kv: 415.9 [RPM/V]    kn: -35.18 [RPM/A]    kT: 2.65 [Ncm/A]

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency <sup>1</sup> [%]
14.9	15.0	5,787.1	223.5	188.5	31.1	84.33
14.9	17.0	5,694.1	253.3	217.0	36.4	85.69
14.8	19.0	5,602.2	281.2	244.6	41.7	87.00
14.8	21.0	5,511.3	310.8	271.3	47.0	87.28
14.8	23.0	5,421.5	340.4	296.9	52.3	87.23
14.8	25.0	5,332.8	370.0	321.7	57.6	86.94
14.8	27.0	5,245.1	399.6	345.5	62.9	86.46
14.8	29.0	5,158.5	429.2	368.4	68.2	85.84
14.7	31.0	5,072.9	455.7	390.5	73.5	85.68
14.7	33.0	4,988.5	485.1	411.6	78.8	84.86
14.7	35.0	4,905.1	514.5	432.0	84.1	83.96
14.7	37.0	4,822.7	543.9	451.5	89.4	83.01
14.7	39.0	4,741.4	573.3	470.2	94.7	82.02
14.7	41.0	4,661.2	602.7	488.1	100.0	80.99
14.6	43.0	4,582.1	627.8	505.3	105.3	80.48
14.6	45.0	4,504.0	657.0	521.7	110.6	79.40
14.6	47.0	4,427.0	686.2	537.3	115.9	78.30
14.6	49.0	4,351.1	715.4	552.2	121.2	77.19
14.6	51.0	4,276.2	744.6	566.5	126.5	76.08
14.6	53.0	4,202.4	773.8	580.0	131.8	74.96
14.5	55.0	4,129.6	797.5	592.9	137.1	74.34
14.5	57.0	4,058.0	826.5	605.1	142.4	73.22
14.5	59.0	3,987.4	855.5	616.7	147.7	72.09
14.5	61.0	3,917.8	884.5	627.7	153.0	70.97
14.5	63.0	3,849.3	913.5	638.1	158.3	69.85
14.5	65.0	3,781.9	942.5	647.9	163.6	68.74

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency <sup>1</sup> [%]
14.4	67.0	3,715.6	964.8	657.2	168.9	68.12
14.4	69.0	3,650.3	993.6	665.9	174.2	67.02
14.4	71.0	3,586.1	1,022.4	674.1	179.5	65.93
14.4	73.0	3,523.0	1,051.2	681.8	184.8	64.86
14.4	75.0	3,460.9	1,080.0	689.0	190.1	63.79
14.4	77.0	3,399.9	1,108.8	695.7	195.4	62.74
14.3	79.0	3,339.9	1,129.7	702.0	200.7	62.14
14.3	81.0	3,281.0	1,158.3	707.8	206.0	61.11
14.3	83.0	3,223.2	1,186.9	713.2	211.3	60.09
14.3	85.0	3,166.5	1,215.5	718.2	216.6	59.09
14.3	87.0	3,110.8	1,244.1	722.9	221.9	58.10
14.3	89.0	3,056.2	1,272.7	727.1	227.2	57.13

nl = rpm with no load

lo = current with no load

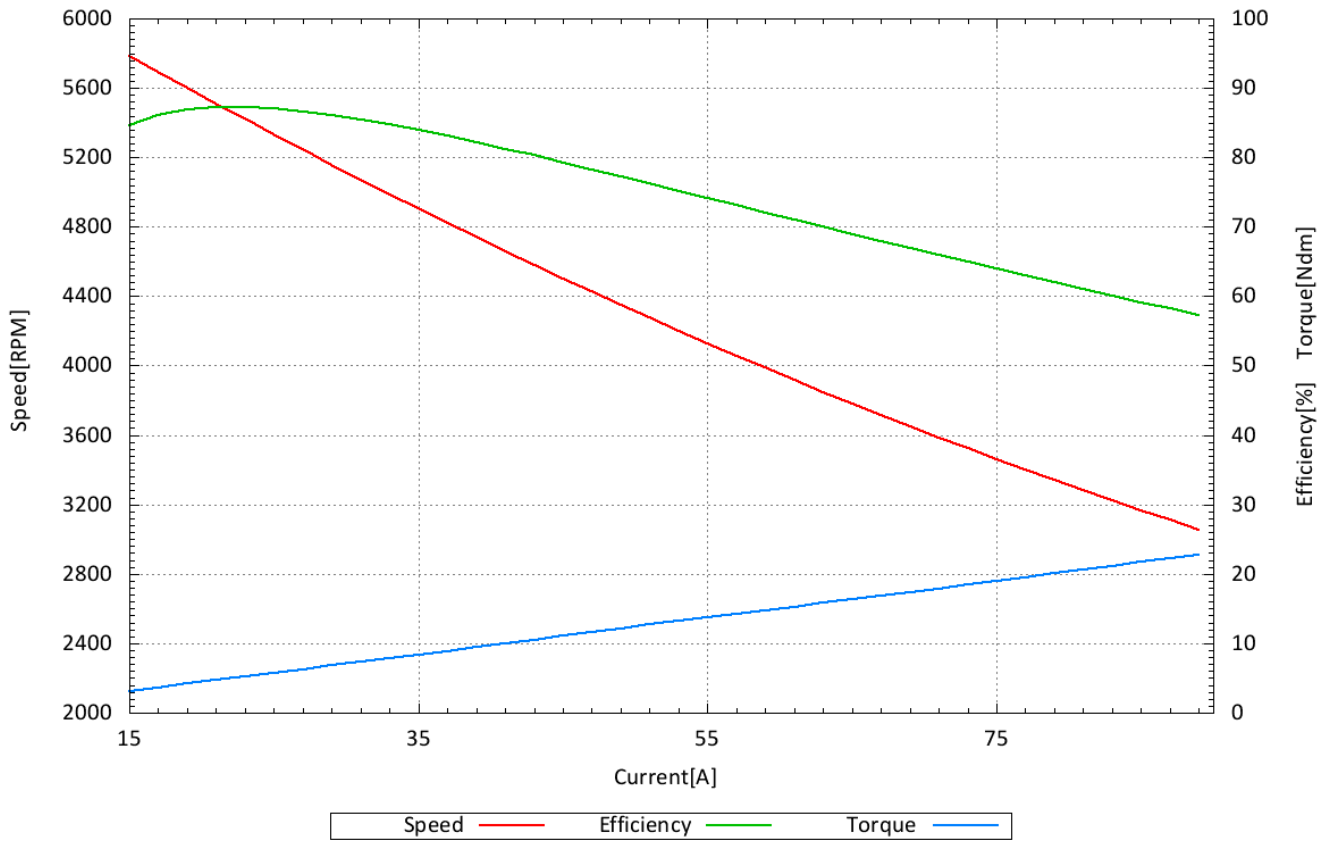
kV = specific rpm

kn = rpm drop per Amp

kT = torque constant

<sup>1</sup> incl. Controller

HP320\_30\_B12\_P14\_15V\_23092024



## Report calculated on Test Bench Results

Motor type: **ADVANCE 1-30-B12 P14**

Date: 23.09.2024

Bearing type: regular

Controller: Common ESC

### Measuring Parameter

Voltage: **20.0 [V]**

Throttle setting: 100%

### Calculated Motor Constants

nl: 8,337.6 [RPM]    lo: 4.8 [A]    kv: 427.9 [RPM/V]    kn: -45.96 [RPM/A]    kT: 2.72 [Ncm/A]

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency <sup>1</sup> [%]
19.9	15.0	8,033.0	298.5	233.0	27.7	78.06
19.9	17.0	7,905.4	338.3	274.8	33.2	81.24
19.9	19.0	7,779.6	378.1	314.5	38.6	83.17
19.8	21.0	7,655.6	415.8	352.7	44.0	84.84
19.8	23.0	7,533.5	455.4	390.5	49.5	85.75
19.8	25.0	7,413.2	495.0	426.2	54.9	86.10
19.8	27.0	7,294.7	534.6	461.4	60.4	86.31
19.8	29.0	7,178.1	574.2	494.6	65.8	86.14
19.8	31.0	7,063.4	613.8	527.4	71.3	85.92
19.7	33.0	6,950.4	650.1	558.3	76.7	85.87
19.7	35.0	6,839.3	689.5	588.0	82.1	85.28
19.7	37.0	6,730.1	728.9	617.4	87.6	84.70
19.7	39.0	6,622.7	768.3	645.0	93.0	83.95
19.7	41.0	6,517.2	807.7	672.2	98.5	83.23
19.7	43.0	6,413.4	847.1	697.8	103.9	82.38
19.7	45.0	6,311.6	886.5	723.1	109.4	81.57
19.6	47.0	6,211.5	921.2	746.7	114.8	81.06
19.6	49.0	6,113.3	960.4	769.5	120.2	80.12
19.6	51.0	6,017.0	999.6	792.0	125.7	79.24
19.6	53.0	5,922.5	1,038.8	813.1	131.1	78.27
19.6	55.0	5,829.8	1,078.0	833.9	136.6	77.36
19.6	57.0	5,739.0	1,117.2	853.4	142.0	76.39
19.5	59.0	5,650.0	1,150.5	872.7	147.5	75.85
19.5	61.0	5,562.8	1,189.5	890.7	152.9	74.88
19.5	63.0	5,477.5	1,228.5	908.0	158.3	73.91
19.5	65.0	5,394.0	1,267.5	925.2	163.8	73.00

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency <sup>1</sup> [%]
19.5	67.0	5,312.4	1,306.5	941.3	169.2	72.05
19.5	69.0	5,232.6	1,345.5	957.3	174.7	71.15
19.5	71.0	5,154.7	1,384.5	972.2	180.1	70.22
19.4	73.0	5,078.6	1,416.2	986.5	185.5	69.66
19.4	75.0	5,004.3	1,455.0	1,000.9	191.0	68.79
19.4	77.0	4,931.9	1,493.8	1,014.3	196.4	67.90
19.4	79.0	4,861.3	1,532.6	1,027.8	201.9	67.06
19.4	81.0	4,792.6	1,571.4	1,040.4	207.3	66.21
19.4	83.0	4,725.7	1,610.2	1,053.1	212.8	65.40
19.3	85.0	4,660.6	1,640.5	1,064.9	218.2	64.92
19.3	87.0	4,597.4	1,679.1	1,076.5	223.6	64.11
19.3	89.0	4,536.1	1,717.7	1,088.3	229.1	63.36

nl = rpm with no load

lo = current with no load

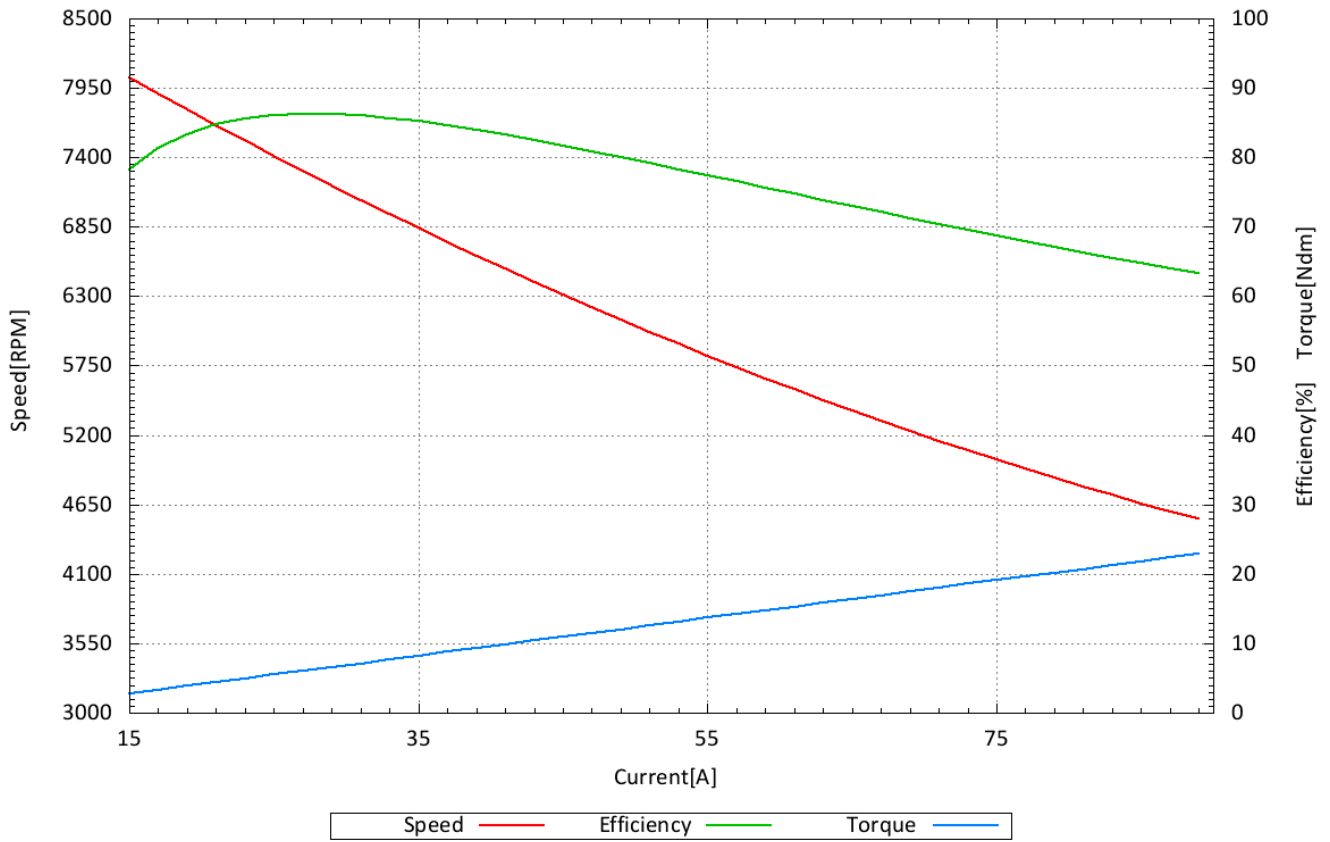
kV = specific rpm

kn = rpm drop per Amp

kT = torque constant

<sup>1</sup> incl. Controller

HP320\_30\_B12\_P14\_20V\_23092024



## Report calculated on Test Bench Results

Motor type: **ADVANCE 1-30-B12 P14**

Date: 23.09.2024

Bearing type: regular

Controller: Common ESC

### Measuring Parameter

Voltage: **25.0 [V]**

Throttle setting: 100%

### Calculated Motor Constants

nl: 10,297.2 [RPM] lo: 6.1 [A] kv: 425.4 [RPM/V] kn: -55.01 [RPM/A] kT: 2.85 [Ncm/A]

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency <sup>1</sup> [%]
24.9	15.0	9,784.6	373.5	259.2	25.3	69.41
24.9	17.0	9,678.1	423.3	314.2	31.0	74.22
24.9	19.0	9,571.4	473.1	367.8	36.7	77.75
24.8	21.0	9,464.5	520.8	420.2	42.4	80.69
24.8	23.0	9,357.3	570.4	471.3	48.1	82.63
24.8	25.0	9,249.9	620.0	522.1	53.9	84.21
24.8	27.0	9,142.3	669.6	570.6	59.6	85.21
24.8	29.0	9,034.5	719.2	617.8	65.3	85.90
24.8	31.0	8,926.5	768.8	663.7	71.0	86.33
24.8	33.0	8,818.2	818.4	708.3	76.7	86.54
24.7	35.0	8,709.7	864.5	751.6	82.4	86.93
24.7	37.0	8,601.1	913.9	793.5	88.1	86.83
24.7	39.0	8,492.2	963.3	834.2	93.8	86.59
24.7	41.0	8,383.0	1,012.7	873.5	99.5	86.25
24.7	43.0	8,273.7	1,062.1	911.5	105.2	85.82
24.7	45.0	8,164.1	1,111.5	948.1	110.9	85.30
24.7	47.0	8,054.4	1,160.9	983.5	116.6	84.72
24.6	49.0	7,944.4	1,205.4	1,017.5	122.3	84.41
24.6	51.0	7,834.2	1,254.6	1,050.9	128.1	83.77
24.6	53.0	7,723.7	1,303.8	1,082.2	133.8	83.00
24.6	55.0	7,613.1	1,353.0	1,112.2	139.5	82.20
24.6	57.0	7,502.2	1,402.2	1,140.7	145.2	81.35
24.6	59.0	7,391.1	1,451.4	1,168.0	150.9	80.47
24.6	61.0	7,279.8	1,500.6	1,193.8	156.6	79.56
24.5	63.0	7,168.3	1,543.5	1,218.3	162.3	78.93
24.5	65.0	7,056.6	1,592.5	1,241.5	168.0	77.96

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency <sup>1</sup> [%]
24.5	67.0	6,944.7	1,641.5	1,263.2	173.7	76.96
24.5	69.0	6,832.5	1,690.5	1,283.6	179.4	75.93
24.5	71.0	6,720.1	1,739.5	1,302.6	185.1	74.88
24.5	73.0	6,607.5	1,788.5	1,320.2	190.8	73.82
24.4	75.0	6,494.7	1,830.0	1,336.4	196.5	73.03
24.4	77.0	6,381.6	1,878.8	1,351.3	202.2	71.92
24.4	79.0	6,268.4	1,927.6	1,365.4	208.0	70.83
24.4	81.0	6,154.9	1,976.4	1,377.4	213.7	69.69
24.4	83.0	6,041.2	2,025.2	1,388.0	219.4	68.54
24.4	85.0	5,927.3	2,074.0	1,397.2	225.1	67.37
24.4	87.0	5,813.2	2,122.8	1,405.0	230.8	66.19
24.3	89.0	5,698.8	2,162.7	1,411.4	236.5	65.26

nl = rpm with no load

lo = current with no load

kV = specific rpm

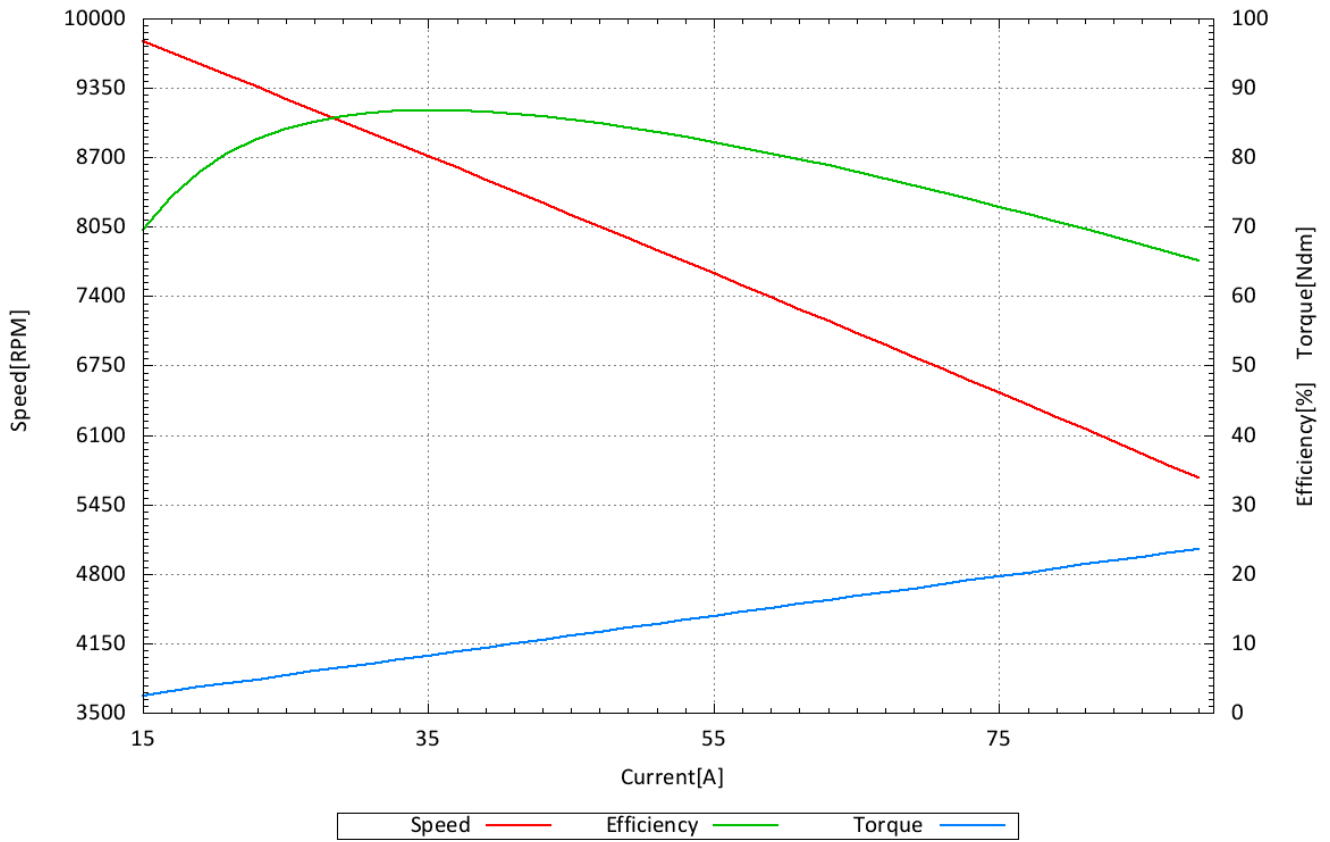
kn = rpm drop per Amp

kT = torque constant

<sup>1</sup> incl. Controller



HP320\_30\_B12\_P14\_25V\_23092024



## Report calculated on Test Bench Results

Motor type: **ADVANCE 1-30-B12 P14**

Date: 23.09.2024

Bearing type: regular

Controller: Common ESC

### Measuring Parameter

Voltage: **30.0 [V]**

Throttle setting: 100%

### Calculated Motor Constants

nl: 12,616.6 [RPM] lo: 6.8 [A] kv: 436.1 [RPM/V] kn: -69.06 [RPM/A] kT: 2.90 [Ncm/A]

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency <sup>1</sup> [%]
29.9	15.0	11,960.4	448.5	298.1	23.8	66.46
29.9	17.0	11,838.2	508.3	366.9	29.6	72.19
29.9	19.0	11,715.1	568.1	434.3	35.4	76.45
29.8	21.0	11,591.2	625.8	500.1	41.2	79.91
29.8	23.0	11,466.4	685.4	564.4	47.0	82.34
29.8	25.0	11,340.8	745.0	627.1	52.8	84.17
29.8	27.0	11,214.4	804.6	688.2	58.6	85.53
29.8	29.0	11,087.2	864.2	747.7	64.4	86.52
29.8	31.0	10,959.1	923.8	805.6	70.2	87.21
29.7	33.0	10,830.1	980.1	861.9	76.0	87.94
29.7	35.0	10,700.3	1,039.5	916.6	81.8	88.18
29.7	37.0	10,569.7	1,098.9	969.6	87.6	88.23
29.7	39.0	10,438.3	1,158.3	1,021.0	93.4	88.14
29.7	41.0	10,306.0	1,217.7	1,070.6	99.2	87.92
29.7	43.0	10,172.8	1,277.1	1,118.6	105.0	87.59
29.7	45.0	10,038.9	1,336.5	1,164.8	110.8	87.15
29.6	47.0	9,904.1	1,391.2	1,208.3	116.5	86.85
29.6	49.0	9,768.4	1,450.4	1,251.1	122.3	86.26
29.6	51.0	9,631.9	1,509.6	1,292.1	128.1	85.59
29.6	53.0	9,494.6	1,568.8	1,331.3	133.9	84.86
29.6	55.0	9,356.4	1,628.0	1,368.8	139.7	84.08
29.6	57.0	9,217.4	1,687.2	1,404.4	145.5	83.24
29.6	59.0	9,077.6	1,746.4	1,438.3	151.3	82.36
29.5	61.0	8,936.9	1,799.5	1,470.3	157.1	81.70
29.5	63.0	8,795.4	1,858.5	1,500.4	162.9	80.73
29.5	65.0	8,653.0	1,917.5	1,528.7	168.7	79.72

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency <sup>1</sup> [%]
29.5	67.0	8,509.8	1,976.5	1,555.0	174.5	78.68
29.5	69.0	8,365.8	2,035.5	1,579.5	180.3	77.60
29.5	71.0	8,220.9	2,094.5	1,602.1	186.1	76.49
29.4	73.0	8,075.2	2,146.2	1,622.8	191.9	75.61
29.4	75.0	7,928.7	2,205.0	1,641.5	197.7	74.44
29.4	77.0	7,781.3	2,263.8	1,658.2	203.5	73.25
29.4	79.0	7,633.1	2,322.6	1,672.2	209.2	72.00
29.4	81.0	7,484.0	2,381.4	1,685.0	215.0	70.76
29.4	83.0	7,334.1	2,440.2	1,695.8	220.8	69.49
29.4	85.0	7,183.4	2,499.0	1,704.6	226.6	68.21
29.3	87.0	7,031.8	2,549.1	1,711.3	232.4	67.13
29.3	89.0	6,879.4	2,607.7	1,716.0	238.2	65.81

nl = rpm with no load

lo = current with no load

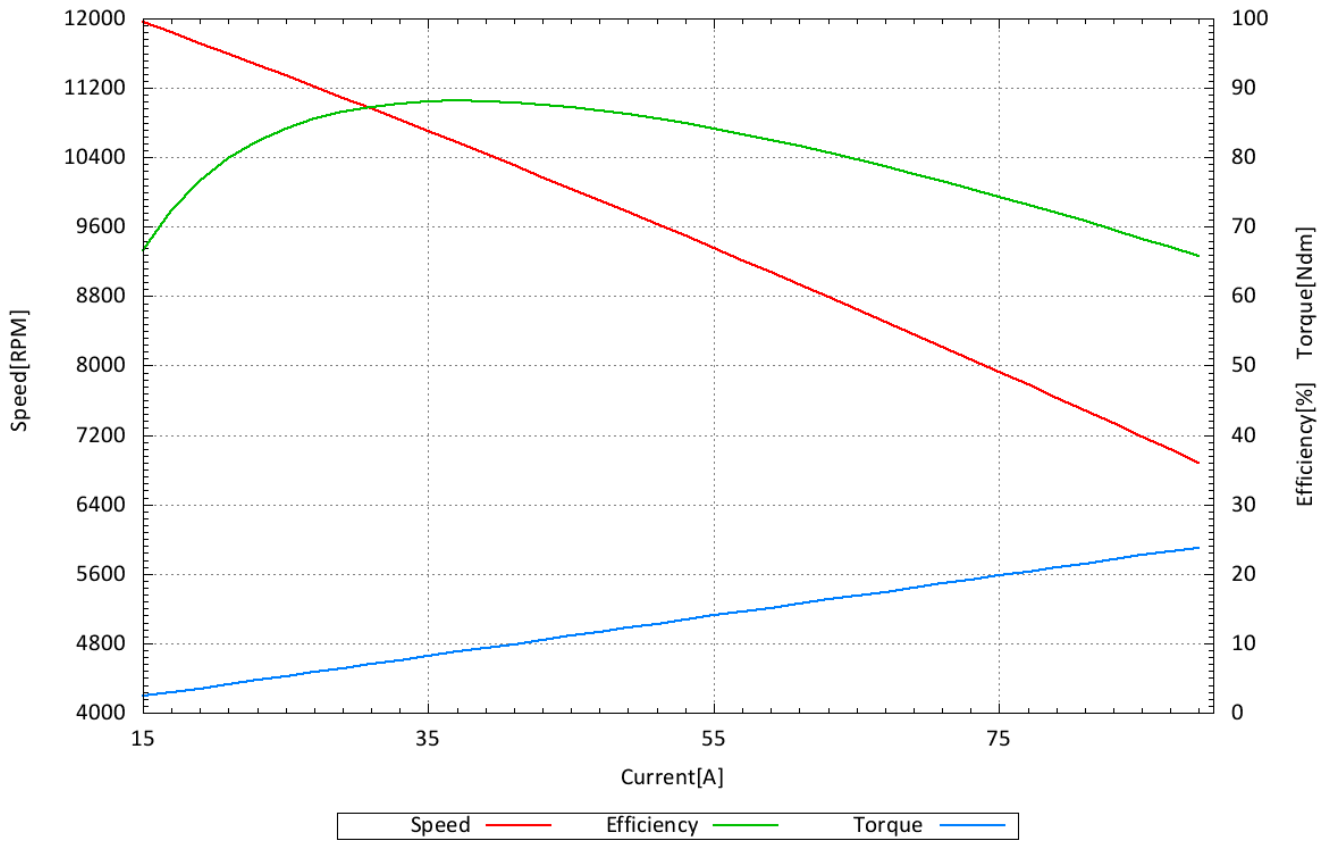
kV = specific rpm

kn = rpm drop per Amp

kT = torque constant

<sup>1</sup> incl. Controller

HP320\_30\_B12\_P14\_30V\_23092024



## Report calculated on Test Bench Results

Motor type: **ADVANCE 1-30-B12 P14**

Date: 23.09.2024

Bearing type: regular

Controller: Common ESC

### Measuring Parameter

Voltage: **35.0 [V]**

Throttle setting: 100%

### Calculated Motor Constants

nl: 14,687.8 [RPM] lo: 7.3 [A] kv: 436.1 [RPM/V] kn: -79.06 [RPM/A] kT: 2.95 [Ncm/A]

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency <sup>1</sup> [%]
34.9	15.0	14,024.9	523.5	333.4	22.7	63.69
34.9	17.0	13,877.6	593.3	415.6	28.6	70.05
34.9	19.0	13,729.8	663.1	496.0	34.5	74.81
34.9	21.0	13,581.3	732.9	574.6	40.4	78.40
34.8	23.0	13,432.3	800.4	651.3	46.3	81.37
34.8	25.0	13,282.8	870.0	726.1	52.2	83.46
34.8	27.0	13,132.6	939.6	799.0	58.1	85.04
34.8	29.0	12,981.9	1,009.2	870.1	64.0	86.21
34.8	31.0	12,830.6	1,078.8	939.2	69.9	87.06
34.8	33.0	12,678.7	1,148.4	1,006.4	75.8	87.64
34.8	35.0	12,526.2	1,218.0	1,071.7	81.7	87.99
34.8	37.0	12,373.2	1,287.6	1,135.0	87.6	88.15
34.7	39.0	12,219.6	1,353.3	1,195.2	93.4	88.32
34.7	41.0	12,065.4	1,422.7	1,254.6	99.3	88.19
34.7	43.0	11,910.6	1,492.1	1,312.1	105.2	87.94
34.7	45.0	11,755.3	1,561.5	1,367.7	111.1	87.59
34.7	47.0	11,599.4	1,630.9	1,421.2	117.0	87.14
34.7	49.0	11,442.9	1,700.3	1,472.7	122.9	86.61
34.7	51.0	11,285.8	1,769.7	1,522.2	128.8	86.02
34.6	53.0	11,128.2	1,833.8	1,569.7	134.7	85.60
34.6	55.0	10,970.0	1,903.0	1,615.2	140.6	84.88
34.6	57.0	10,811.2	1,972.2	1,658.6	146.5	84.10
34.6	59.0	10,651.8	2,041.4	1,700.0	152.4	83.27
34.6	61.0	10,491.9	2,110.6	1,739.3	158.3	82.41
34.6	63.0	10,331.4	2,179.8	1,775.4	164.1	81.45
34.6	65.0	10,170.3	2,249.0	1,810.6	170.0	80.50

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency <sup>1</sup> [%]
34.6	67.0	10,008.6	2,318.2	1,843.6	175.9	79.53
34.5	69.0	9,846.3	2,380.5	1,874.5	181.8	78.75
34.5	71.0	9,683.5	2,449.5	1,903.4	187.7	77.70
34.5	73.0	9,520.1	2,518.5	1,930.1	193.6	76.64
34.5	75.0	9,356.1	2,587.5	1,954.6	199.5	75.54
34.5	77.0	9,191.6	2,656.5	1,977.1	205.4	74.42
34.5	79.0	9,026.5	2,725.5	1,997.3	211.3	73.28
34.5	81.0	8,860.8	2,794.5	2,015.4	217.2	72.12
34.4	83.0	8,694.5	2,855.2	2,031.3	223.1	71.14
34.4	85.0	8,527.6	2,924.0	2,045.0	229.0	69.94
34.4	87.0	8,360.2	2,992.8	2,055.6	234.8	68.69
34.4	89.0	8,192.2	3,061.6	2,064.9	240.7	67.45

nl = rpm with no load

lo = current with no load

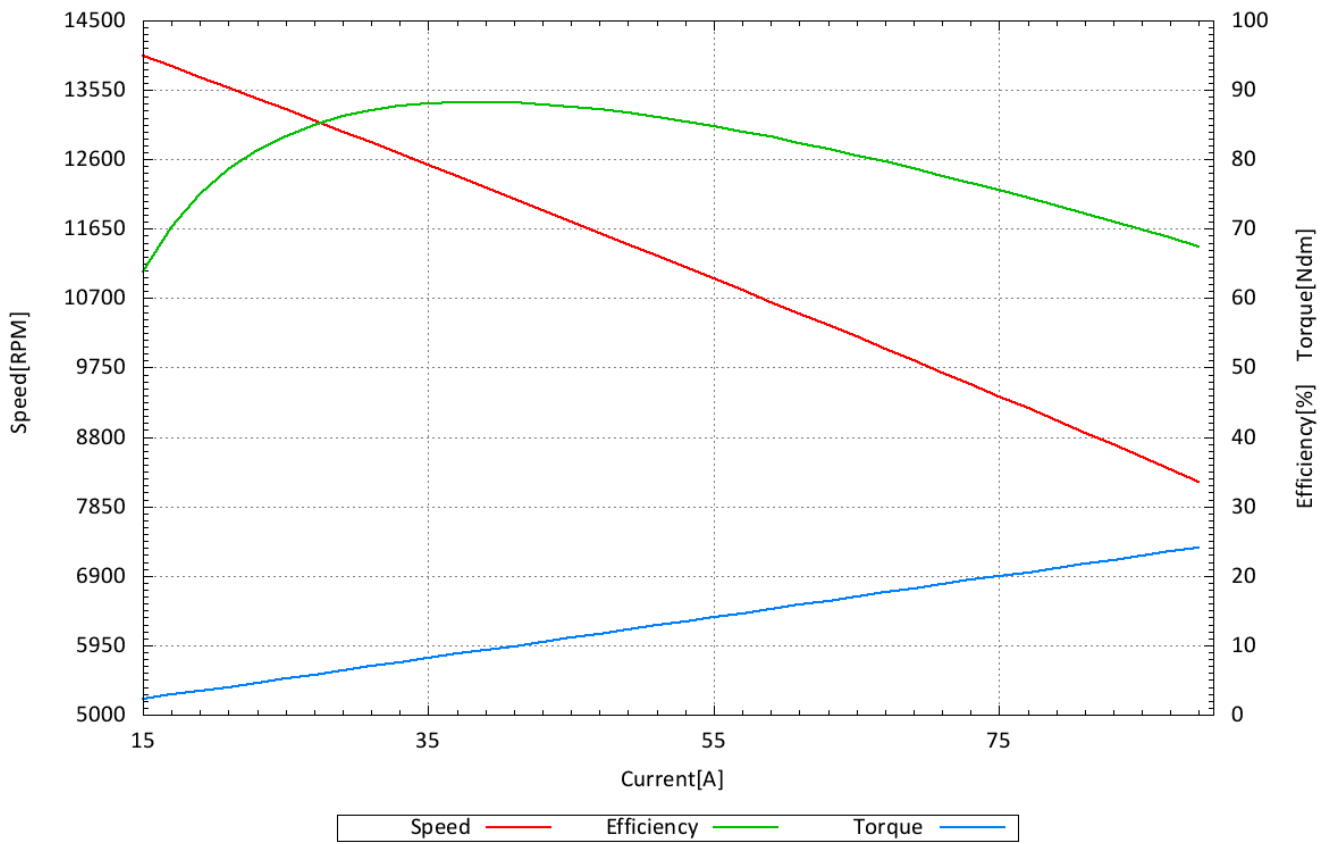
kV = specific rpm

kn = rpm drop per Amp

kT = torque constant

<sup>1</sup> incl. Controller

HP320\_30\_B12\_P14\_35V\_23092024



## Report calculated on Test Bench Results

Motor type: **ADVANCE 1-30-B12 P14**

Date: 23.09.2024

Bearing type: regular

Controller: Common ESC

### Measuring Parameter

Voltage: **40.0 [V]**

Throttle setting: 100%

### Calculated Motor Constants

nl: 16,878.6 [RPM] lo: 8.0 [A] kv: 440.7 [RPM/V] kn: -93.85 [RPM/A] kT: 3.03 [Ncm/A]

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency <sup>1</sup> [%]
39.9	15.0	15,944.9	598.5	354.0	21.2	59.15
39.9	17.0	15,807.8	678.3	451.9	27.3	66.63
39.9	19.0	15,668.0	758.1	548.0	33.4	72.29
39.8	21.0	15,525.6	835.8	640.6	39.4	76.64
39.8	23.0	15,380.4	915.4	732.8	45.5	80.06
39.8	25.0	15,232.5	995.0	821.5	51.5	82.56
39.8	27.0	15,082.0	1,074.6	909.7	57.6	84.66
39.8	29.0	14,928.7	1,154.2	995.8	63.7	86.28
39.8	31.0	14,772.8	1,233.8	1,078.3	69.7	87.39
39.7	33.0	14,614.1	1,310.1	1,160.0	75.8	88.55
39.7	35.0	14,452.8	1,389.5	1,238.0	81.8	89.10
39.7	37.0	14,288.8	1,468.9	1,315.3	87.9	89.54
39.7	39.0	14,122.1	1,548.3	1,388.7	93.9	89.69
39.7	41.0	13,952.6	1,627.7	1,461.1	100.0	89.77
39.7	43.0	13,780.5	1,707.1	1,531.1	106.1	89.69
39.7	45.0	13,605.8	1,786.5	1,597.2	112.1	89.40
39.6	47.0	13,428.3	1,861.2	1,662.1	118.2	89.30
39.6	49.0	13,248.1	1,940.4	1,723.1	124.2	88.80
39.6	51.0	13,065.2	2,019.6	1,782.7	130.3	88.27
39.6	53.0	12,879.7	2,098.8	1,839.7	136.4	87.66
39.6	55.0	12,691.4	2,178.0	1,892.6	142.4	86.89
39.6	57.0	12,500.5	2,257.2	1,943.9	148.5	86.12
39.5	59.0	12,306.8	2,330.5	1,991.1	154.5	85.44
39.5	61.0	12,110.5	2,409.5	2,036.7	160.6	84.53
39.5	63.0	11,911.5	2,488.5	2,079.4	166.7	83.56
39.5	65.0	11,709.8	2,567.5	2,117.7	172.7	82.48



Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency <sup>1</sup> [%]
39.5	67.0	11,505.3	2,646.5	2,154.2	178.8	81.40
39.5	69.0	11,298.2	2,725.5	2,186.5	184.8	80.22
39.5	71.0	11,088.5	2,804.5	2,216.7	190.9	79.04
39.4	73.0	10,876.0	2,876.2	2,243.7	197.0	78.01
39.4	75.0	10,660.8	2,955.0	2,266.3	203.0	76.69
39.4	77.0	10,442.9	3,033.8	2,286.7	209.1	75.37
39.4	79.0	10,222.4	3,112.6	2,302.6	215.1	73.98
39.4	81.0	9,999.1	3,191.4	2,316.2	221.2	72.58
39.4	83.0	9,773.2	3,270.2	2,325.3	227.2	71.10
39.3	85.0	9,544.5	3,340.5	2,331.8	233.3	69.80
39.3	87.0	9,313.2	3,419.1	2,334.8	239.4	68.29
39.3	89.0	9,079.2	3,497.7	2,333.2	245.4	66.71

nl = rpm with no load

lo = current with no load

kV = specific rpm

kn = rpm drop per Amp

kT = torque constant

<sup>1</sup> incl. Controller

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