

Report calculated on Test Bench Results

Motor type: **NOVA 4-50-B8 P20**

Date: 12.04.2024

Bearing type: regular

Controller: Common ESC

Measuring Parameter

Voltage: **20.0 [V]**

Throttle setting: 100%

Calculated Motor Constants

nl: 3,307.4 [RPM] lo: 3.2 [A] kv: 167.3 [RPM/V] kn: -11.92 [RPM/A] kT: 6.43 [Ncm/A]

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency ¹ [%]
20.0	10.0	3,240.2	200.0	149.0	43.9	74.48
19.9	12.0	3,208.0	238.8	190.5	56.7	79.76
19.9	14.0	3,176.4	278.6	231.5	69.6	83.10
19.9	16.0	3,145.3	318.4	271.7	82.5	85.34
19.9	18.0	3,114.9	358.2	310.9	95.3	86.78
19.9	20.0	3,084.9	398.0	349.5	108.2	87.82
19.9	22.0	3,055.5	437.8	387.2	121.0	88.43
19.9	24.0	3,026.5	477.6	424.4	133.9	88.86
19.9	26.0	2,998.1	517.4	460.9	146.8	89.08
19.9	28.0	2,970.0	557.2	496.4	159.6	89.09
19.9	30.0	2,942.4	597.0	531.5	172.5	89.03
19.9	32.0	2,915.1	636.8	565.7	185.3	88.83
19.8	34.0	2,888.3	673.2	599.5	198.2	89.05
19.8	36.0	2,861.7	712.8	632.6	211.1	88.75
19.8	38.0	2,835.5	752.4	664.8	223.9	88.36
19.8	40.0	2,809.5	792.0	696.7	236.8	87.97
19.8	42.0	2,783.9	831.6	727.7	249.6	87.50
19.8	44.0	2,758.4	871.2	758.3	262.5	87.04
19.8	46.0	2,733.2	910.8	788.2	275.4	86.54
19.8	48.0	2,708.2	950.4	817.3	288.2	86.00
19.8	50.0	2,683.3	990.0	846.1	301.1	85.46
19.8	52.0	2,658.6	1,029.6	873.9	313.9	84.88
19.8	54.0	2,633.9	1,069.2	901.4	326.8	84.30
19.7	56.0	2,609.4	1,103.2	928.2	339.7	84.14
19.7	58.0	2,584.9	1,142.6	954.2	352.5	83.51
19.7	60.0	2,560.5	1,182.0	979.8	365.4	82.89

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency ¹ [%]
19.7	62.0	2,536.1	1,221.4	1,004.4	378.2	82.24
19.7	64.0	2,511.7	1,260.8	1,028.7	391.1	81.59
19.7	66.0	2,487.2	1,300.2	1,052.3	404.0	80.93
19.7	68.0	2,462.7	1,339.6	1,074.9	416.8	80.24
19.7	70.0	2,438.1	1,379.0	1,097.1	429.7	79.56
19.7	72.0	2,413.4	1,418.4	1,118.3	442.5	78.84
19.7	74.0	2,388.5	1,457.8	1,139.1	455.4	78.14
19.7	76.0	2,363.5	1,497.2	1,159.1	468.3	77.42
19.6	78.0	2,338.3	1,528.8	1,178.1	481.1	77.06
19.6	80.0	2,312.9	1,568.0	1,196.5	494.0	76.31
19.6	82.0	2,287.3	1,607.2	1,213.9	506.8	75.53
19.6	84.0	2,261.4	1,646.4	1,230.7	519.7	74.75
19.6	86.0	2,235.2	1,685.6	1,246.7	532.6	73.96
19.6	88.0	2,208.7	1,724.8	1,261.5	545.4	73.14
19.6	90.0	2,181.9	1,764.0	1,275.6	558.3	72.32
19.6	92.0	2,154.7	1,803.2	1,288.6	571.1	71.46
19.6	94.0	2,127.1	1,842.4	1,300.9	584.0	70.61
19.6	96.0	2,099.2	1,881.6	1,312.2	596.9	69.74
19.6	98.0	2,070.8	1,920.8	1,322.2	609.7	68.83
19.5	100.0	2,041.9	1,950.0	1,331.3	622.6	68.27
19.5	102.0	2,012.5	1,989.0	1,339.1	635.4	67.33
19.5	104.0	1,982.7	2,028.0	1,346.1	648.3	66.37
19.5	106.0	1,952.3	2,067.0	1,351.8	661.2	65.40

nl = rpm with no load

lo = current with no load

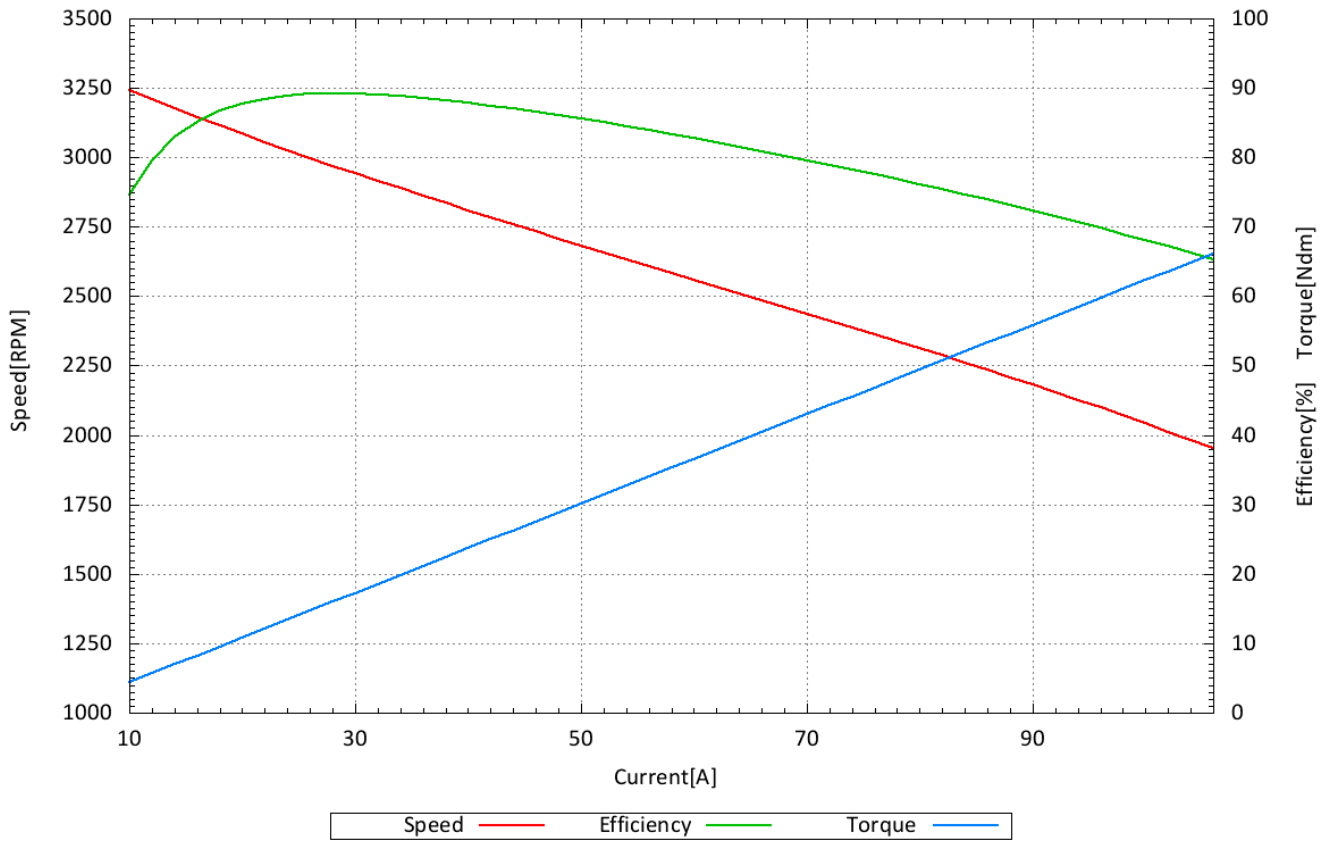
kV = specific rpm

kn = rpm drop per Amp

kT = torque constant

¹ incl. Controller

HP430_50_B8_P20_20V_12042024



Report calculated on Test Bench Results

Motor type: **NOVA 4-50-B8 P20**

Date: 25.03.2024

Bearing type: regular

Controller: Common ESC

Measuring Parameter

Voltage: **25.0 [V]**

Throttle setting: 100%

Calculated Motor Constants

nl: 4,131.0 [RPM] lo: 3.4 [A] kv: 167.3 [RPM/V] kn: -14.90 [RPM/A] kT: 6.43 [Ncm/A]

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency ¹ [%]
25.0	10.0	4,064.6	250.0	180.9	42.5	72.36
24.9	12.0	4,027.0	298.8	233.2	55.3	78.05
24.9	14.0	3,990.1	348.6	285.0	68.2	81.75
24.9	16.0	3,953.8	398.4	335.8	81.1	84.28
24.9	18.0	3,918.3	448.2	385.3	93.9	85.96
24.9	20.0	3,883.4	498.0	434.3	106.8	87.21
24.9	22.0	3,849.0	547.8	482.5	119.7	88.07
24.9	24.0	3,815.3	597.6	529.4	132.5	88.59
24.9	26.0	3,782.0	647.4	575.9	145.4	88.95
24.9	28.0	3,749.3	697.2	621.1	158.2	89.09
24.9	30.0	3,717.1	747.0	666.0	171.1	89.16
24.9	32.0	3,685.3	796.8	710.1	184.0	89.12
24.8	34.0	3,653.9	843.2	753.0	196.8	89.31
24.8	36.0	3,623.0	892.8	795.6	209.7	89.11
24.8	38.0	3,592.4	942.4	837.0	222.5	88.82
24.8	40.0	3,562.1	992.0	878.1	235.4	88.52
24.8	42.0	3,532.1	1,041.6	918.4	248.3	88.17
24.8	44.0	3,502.5	1,091.2	957.7	261.1	87.76
24.8	46.0	3,473.0	1,140.8	996.5	274.0	87.35
24.8	48.0	3,443.8	1,190.4	1,034.3	286.8	86.89
24.8	50.0	3,414.8	1,240.0	1,071.7	299.7	86.43
24.8	52.0	3,385.9	1,289.6	1,108.4	312.6	85.95
24.8	54.0	3,357.2	1,339.2	1,144.0	325.4	85.42
24.7	56.0	3,328.6	1,383.2	1,179.2	338.3	85.25
24.7	58.0	3,300.1	1,432.6	1,213.4	351.1	84.70
24.7	60.0	3,271.6	1,482.0	1,247.1	364.0	84.15

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency ¹ [%]
24.7	62.0	3,243.1	1,531.4	1,280.0	376.9	83.58
24.7	64.0	3,214.6	1,580.8	1,311.9	389.7	82.99
24.7	66.0	3,186.1	1,630.2	1,343.3	402.6	82.40
24.7	68.0	3,157.4	1,679.6	1,373.5	415.4	81.77
24.7	70.0	3,128.7	1,729.0	1,403.3	428.3	81.16
24.7	72.0	3,099.9	1,778.4	1,432.2	441.2	80.53
24.7	74.0	3,070.9	1,827.8	1,460.0	454.0	79.88
24.7	76.0	3,041.7	1,877.2	1,487.2	466.9	79.22
24.6	78.0	3,012.3	1,918.8	1,513.2	479.7	78.86
24.6	80.0	2,982.7	1,968.0	1,538.6	492.6	78.18
24.6	82.0	2,952.8	2,017.2	1,563.1	505.5	77.49
24.6	84.0	2,922.6	2,066.4	1,586.3	518.3	76.77
24.6	86.0	2,892.0	2,115.6	1,608.7	531.2	76.04
24.6	88.0	2,861.1	2,164.8	1,629.9	544.0	75.29
24.6	90.0	2,829.8	2,214.0	1,650.3	556.9	74.54
24.6	92.0	2,798.1	2,263.2	1,669.6	569.8	73.77
24.6	94.0	2,766.0	2,312.4	1,687.5	582.6	72.98
24.6	96.0	2,733.3	2,361.6	1,704.5	595.5	72.18
24.6	98.0	2,700.2	2,410.8	1,720.1	608.3	71.35
24.5	100.0	2,666.5	2,450.0	1,734.6	621.2	70.80
24.5	102.0	2,632.3	2,499.0	1,747.9	634.1	69.94
24.5	104.0	2,597.4	2,548.0	1,759.6	646.9	69.06
24.5	106.0	2,562.0	2,597.0	1,770.2	659.8	68.16

nl = rpm with no load

lo = current with no load

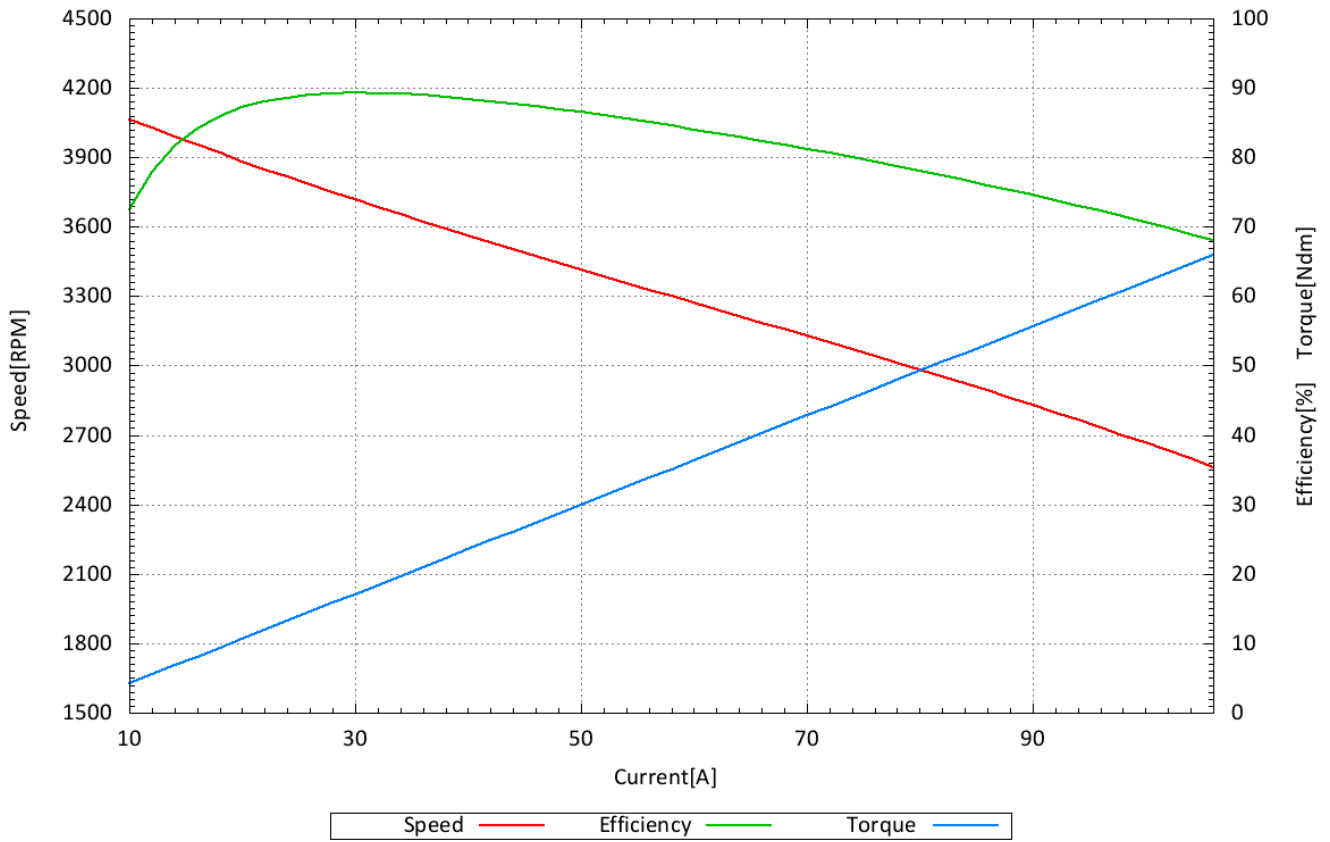
kV = specific rpm

kn = rpm drop per Amp

kT = torque constant

¹ incl. Controller

HP430_50_B8_P20_25V_25032024



Report calculated on Test Bench Results

Motor type: **NOVA 4-50-B8 P20**

Date: 25.03.2024

Bearing type: regular

Controller: Common ESC

Measuring Parameter

Voltage: **30.0 [V]**

Throttle setting: 100%

Calculated Motor Constants

nl: 4,983.7 [RPM] lo: 2.9 [A] kv: 167.8 [RPM/V] kn: -16.99 [RPM/A] kT: 6.31 [Ncm/A]

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency ¹ [%]
30.0	10.0	4,901.7	300.0	229.4	44.7	76.48
29.9	12.0	4,859.4	358.8	291.6	57.3	81.27
29.9	14.0	4,817.8	418.6	352.7	69.9	84.25
29.9	16.0	4,777.0	478.4	413.2	82.6	86.37
29.9	18.0	4,736.9	538.2	472.2	95.2	87.74
29.9	20.0	4,697.5	598.0	530.3	107.8	88.68
29.9	22.0	4,658.8	657.8	587.9	120.5	89.37
29.9	24.0	4,620.7	717.6	644.0	133.1	89.75
29.9	26.0	4,583.2	777.4	699.3	145.7	89.95
29.9	28.0	4,546.3	837.2	754.1	158.4	90.08
29.9	30.0	4,509.9	897.0	807.6	171.0	90.03
29.8	32.0	4,474.0	953.6	860.2	183.6	90.21
29.8	34.0	4,438.6	1,013.2	912.0	196.2	90.01
29.8	36.0	4,403.6	1,072.8	963.3	208.9	89.80
29.8	38.0	4,369.1	1,132.4	1,013.4	221.5	89.49
29.8	40.0	4,334.9	1,192.0	1,062.7	234.1	89.15
29.8	42.0	4,301.1	1,251.6	1,111.6	246.8	88.82
29.8	44.0	4,267.6	1,311.2	1,159.3	259.4	88.41
29.8	46.0	4,234.4	1,370.8	1,206.1	272.0	87.99
29.8	48.0	4,201.4	1,430.4	1,252.2	284.6	87.54
29.8	50.0	4,168.7	1,490.0	1,297.8	297.3	87.10
29.8	52.0	4,136.2	1,549.6	1,342.3	309.9	86.62
29.7	54.0	4,103.8	1,603.8	1,385.9	322.5	86.42
29.7	56.0	4,071.6	1,663.2	1,429.2	335.2	85.93
29.7	58.0	4,039.5	1,722.6	1,471.2	347.8	85.41
29.7	60.0	4,007.5	1,782.0	1,512.5	360.4	84.87

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency ¹ [%]
29.7	62.0	3,975.5	1,841.4	1,553.3	373.1	84.35
29.7	64.0	3,943.5	1,900.8	1,592.8	385.7	83.80
29.7	66.0	3,911.5	1,960.2	1,631.5	398.3	83.23
29.7	68.0	3,879.4	2,019.6	1,669.3	410.9	82.65
29.7	70.0	3,847.3	2,079.0	1,706.6	423.6	82.09
29.7	72.0	3,815.0	2,138.4	1,742.6	436.2	81.49
29.7	74.0	3,782.7	2,197.8	1,777.8	448.8	80.89
29.6	76.0	3,750.1	2,249.6	1,812.4	461.5	80.56
29.6	78.0	3,717.3	2,308.8	1,845.6	474.1	79.94
29.6	80.0	3,684.3	2,368.0	1,877.8	486.7	79.30
29.6	82.0	3,651.1	2,427.2	1,909.0	499.3	78.65
29.6	84.0	3,617.5	2,486.4	1,939.6	512.0	78.01
29.6	86.0	3,583.6	2,545.6	1,968.7	524.6	77.34
29.6	88.0	3,549.4	2,604.8	1,996.7	537.2	76.66
29.6	90.0	3,514.8	2,664.0	2,024.0	549.9	75.98
29.6	92.0	3,479.7	2,723.2	2,049.7	562.5	75.27
29.6	94.0	3,444.2	2,782.4	2,074.2	575.1	74.55
29.5	96.0	3,408.2	2,832.0	2,097.9	587.8	74.08
29.5	98.0	3,371.7	2,891.0	2,119.9	600.4	73.33
29.5	100.0	3,334.7	2,950.0	2,140.7	613.0	72.56
29.5	102.0	3,297.1	3,009.0	2,160.0	625.6	71.79
29.5	104.0	3,258.9	3,068.0	2,178.3	638.3	71.00
29.5	106.0	3,220.0	3,127.0	2,194.8	650.9	70.19

nl = rpm with no load

lo = current with no load

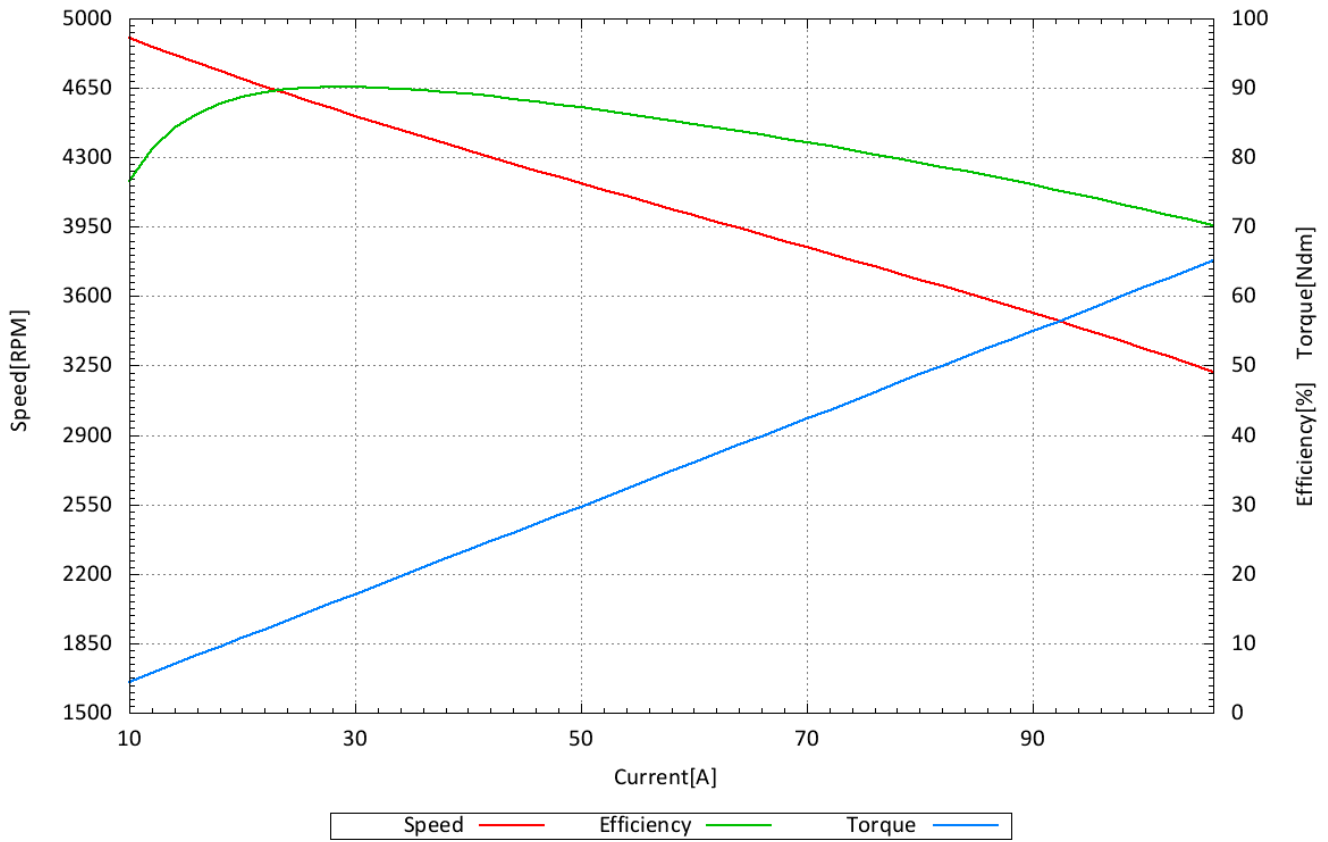
kV = specific rpm

kn = rpm drop per Amp

kT = torque constant

¹ incl. Controller

HP430_50_B8_P20_30V_25032024



Report calculated on Test Bench Results

Motor type: **NOVA 4-50-B8 P20**

Date: 25.03.2024

Bearing type: regular

Controller: Common ESC

Measuring Parameter

Voltage: **35.0 [V]**

Throttle setting: 100%

Calculated Motor Constants

nl: 5,809.6 [RPM] lo: 3.0 [A] kv: 167.6 [RPM/V] kn: -19.20 [RPM/A] kT: 6.27 [Ncm/A]

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency ¹ [%]
34.9	10.0	5,710.9	349.0	263.7	44.1	75.57
34.9	12.0	5,664.2	418.8	336.3	56.7	80.31
34.9	14.0	5,618.5	488.6	407.2	69.2	83.33
34.9	16.0	5,573.5	558.4	476.8	81.7	85.40
34.9	18.0	5,529.3	628.2	546.0	94.3	86.92
34.9	20.0	5,485.8	698.0	613.5	106.8	87.90
34.9	22.0	5,443.1	767.8	680.6	119.4	88.64
34.8	24.0	5,401.0	835.2	746.0	131.9	89.32
34.8	26.0	5,359.6	904.8	811.0	144.5	89.63
34.8	28.0	5,318.8	974.4	874.5	157.0	89.74
34.8	30.0	5,278.6	1,044.0	937.5	169.6	89.80
34.8	32.0	5,239.0	1,113.6	999.0	182.1	89.71
34.8	34.0	5,199.9	1,183.2	1,060.2	194.7	89.60
34.8	36.0	5,161.4	1,252.8	1,119.9	207.2	89.39
34.8	38.0	5,123.3	1,322.4	1,179.3	219.8	89.18
34.7	40.0	5,085.6	1,388.0	1,237.1	232.3	89.13
34.7	42.0	5,048.4	1,457.4	1,294.7	244.9	88.84
34.7	44.0	5,011.6	1,526.8	1,350.9	257.4	88.48
34.7	46.0	4,975.1	1,596.2	1,406.2	269.9	88.09
34.7	48.0	4,939.0	1,665.6	1,461.1	282.5	87.72
34.7	50.0	4,903.2	1,735.0	1,514.7	295.0	87.30
34.7	52.0	4,867.6	1,804.4	1,567.9	307.6	86.90
34.7	54.0	4,832.3	1,873.8	1,619.8	320.1	86.45
34.6	56.0	4,797.3	1,937.6	1,671.4	332.7	86.26
34.6	58.0	4,762.4	2,006.8	1,721.6	345.2	85.79
34.6	60.0	4,727.7	2,076.0	1,771.4	357.8	85.33

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency ¹ [%]
34.6	62.0	4,693.1	2,145.2	1,819.9	370.3	84.83
34.6	64.0	4,658.6	2,214.4	1,868.0	382.9	84.36
34.6	66.0	4,624.1	2,283.6	1,914.7	395.4	83.84
34.6	68.0	4,589.8	2,352.8	1,961.0	408.0	83.35
34.6	70.0	4,555.4	2,422.0	2,006.0	420.5	82.82
34.5	72.0	4,521.0	2,484.0	2,050.5	433.1	82.55
34.5	74.0	4,486.6	2,553.0	2,093.6	445.6	82.01
34.5	76.0	4,452.1	2,622.0	2,135.8	458.1	81.46
34.5	78.0	4,417.5	2,691.0	2,177.5	470.7	80.92
34.5	80.0	4,382.8	2,760.0	2,217.7	483.2	80.35
34.5	82.0	4,347.9	2,829.0	2,257.4	495.8	79.80
34.5	84.0	4,312.8	2,898.0	2,295.7	508.3	79.22
34.5	86.0	4,277.6	2,967.0	2,333.4	520.9	78.64
34.4	88.0	4,242.0	3,027.2	2,369.5	533.4	78.27
34.4	90.0	4,206.2	3,096.0	2,405.0	546.0	77.68
34.4	92.0	4,170.1	3,164.8	2,438.9	558.5	77.06
34.4	94.0	4,133.6	3,233.6	2,472.1	571.1	76.45
34.4	96.0	4,096.8	3,302.4	2,503.7	583.6	75.82
34.4	98.0	4,059.6	3,371.2	2,534.6	596.2	75.18
34.4	100.0	4,022.0	3,440.0	2,563.7	608.7	74.53
34.4	102.0	3,983.9	3,508.8	2,592.0	621.3	73.87
34.3	104.0	3,945.3	3,567.2	2,618.6	633.8	73.41
34.3	106.0	3,906.3	3,635.8	2,643.8	646.3	72.72

nl = rpm with no load

lo = current with no load

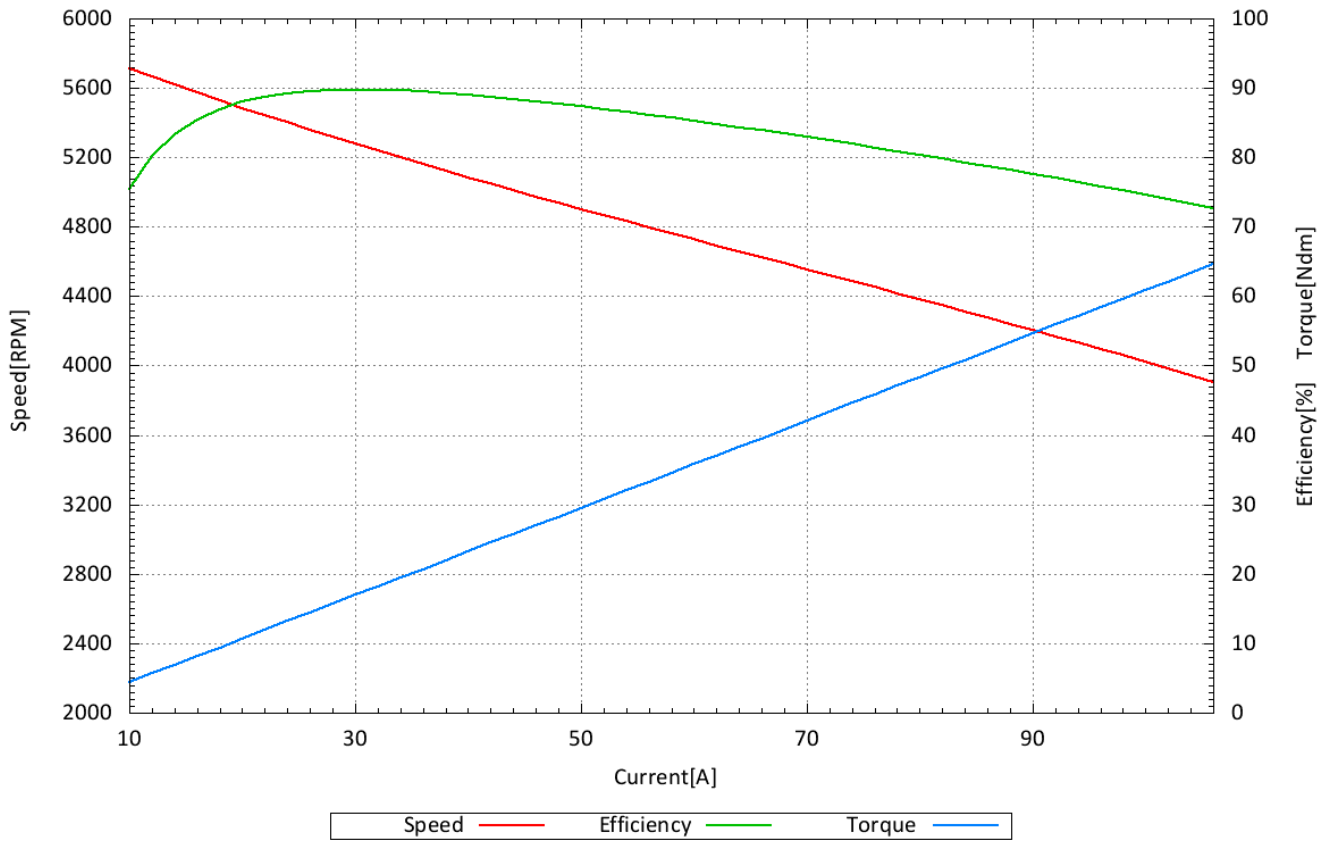
kV = specific rpm

kn = rpm drop per Amp

kT = torque constant

¹ incl. Controller

HP430_50_B8_P20_35V_25032024



Report calculated on Test Bench Results

Motor type: **NOVA 4-50-B8 P20**

Date: 25.03.2024

Bearing type: regular

Controller: Common ESC

Measuring Parameter

Voltage: **40.0 [V]**

Throttle setting: 100%

Calculated Motor Constants

nl: 6,586.3 [RPM] lo: 3.4 [A] kv: 166.3 [RPM/V] kn: -19.46 [RPM/A] kT: 6.37 [Ncm/A]

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency ¹ [%]
40.0	10.0	6,500.7	400.0	287.3	42.2	71.82
39.9	12.0	6,452.0	478.8	370.9	54.9	77.47
39.9	14.0	6,404.2	558.6	454.0	67.7	81.28
39.9	16.0	6,357.1	638.4	535.2	80.4	83.84
39.9	18.0	6,310.9	718.2	615.3	93.1	85.67
39.9	20.0	6,265.4	798.0	694.8	105.9	87.07
39.9	22.0	6,220.7	877.8	772.6	118.6	88.02
39.9	24.0	6,176.7	957.6	849.3	131.3	88.69
39.9	26.0	6,133.4	1,037.4	925.5	144.1	89.22
39.9	28.0	6,090.7	1,117.2	1,000.1	156.8	89.52
39.9	30.0	6,048.6	1,197.0	1,074.3	169.6	89.75
39.9	32.0	6,007.2	1,276.8	1,146.8	182.3	89.82
39.8	34.0	5,966.3	1,353.2	1,218.3	195.0	90.03
39.8	36.0	5,926.0	1,432.8	1,289.5	207.8	90.00
39.8	38.0	5,886.2	1,512.4	1,359.2	220.5	89.87
39.8	40.0	5,846.9	1,592.0	1,428.5	233.3	89.73
39.8	42.0	5,808.1	1,671.6	1,496.2	246.0	89.51
39.8	44.0	5,769.7	1,751.2	1,563.1	258.7	89.26
39.8	46.0	5,731.7	1,830.8	1,629.6	271.5	89.01
39.8	48.0	5,694.1	1,910.4	1,694.6	284.2	88.71
39.8	50.0	5,656.9	1,990.0	1,758.8	296.9	88.38
39.8	52.0	5,620.0	2,069.6	1,822.7	309.7	88.07
39.8	54.0	5,583.5	2,149.2	1,885.1	322.4	87.71
39.7	56.0	5,547.2	2,223.2	1,947.2	335.2	87.58
39.7	58.0	5,511.2	2,302.6	2,007.8	347.9	87.20
39.7	60.0	5,475.3	2,382.0	2,067.6	360.6	86.80

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency ¹ [%]
39.7	62.0	5,439.7	2,461.4	2,127.1	373.4	86.42
39.7	64.0	5,404.3	2,540.8	2,185.1	386.1	86.00
39.7	66.0	5,369.0	2,620.2	2,242.8	398.9	85.60
39.7	68.0	5,333.9	2,699.6	2,299.1	411.6	85.16
39.7	70.0	5,298.8	2,779.0	2,354.4	424.3	84.72
39.7	72.0	5,263.8	2,858.4	2,409.4	437.1	84.29
39.7	74.0	5,228.9	2,937.8	2,463.0	449.8	83.84
39.7	76.0	5,194.0	3,017.2	2,515.6	462.5	83.38
39.6	78.0	5,159.0	3,088.8	2,567.8	475.3	83.13
39.6	80.0	5,124.1	3,168.0	2,618.6	488.0	82.66
39.6	82.0	5,089.0	3,247.2	2,668.9	500.8	82.19
39.6	84.0	5,053.9	3,326.4	2,717.7	513.5	81.70
39.6	86.0	5,018.6	3,405.6	2,765.4	526.2	81.20
39.6	88.0	4,983.2	3,484.8	2,812.7	539.0	80.71
39.6	90.0	4,947.6	3,564.0	2,858.4	551.7	80.20
39.6	92.0	4,911.9	3,643.2	2,903.6	564.5	79.70
39.6	94.0	4,875.9	3,722.4	2,947.2	577.2	79.17
39.6	96.0	4,839.6	3,801.6	2,989.6	589.9	78.64
39.6	98.0	4,803.1	3,880.8	3,031.5	602.7	78.11
39.6	100.0	4,766.3	3,960.0	3,071.6	615.4	77.57
39.5	102.0	4,729.1	4,029.0	3,110.5	628.1	77.20
39.5	104.0	4,691.6	4,108.0	3,148.8	640.9	76.65
39.5	106.0	4,653.7	4,187.0	3,185.2	653.6	76.07

nl = rpm with no load

lo = current with no load

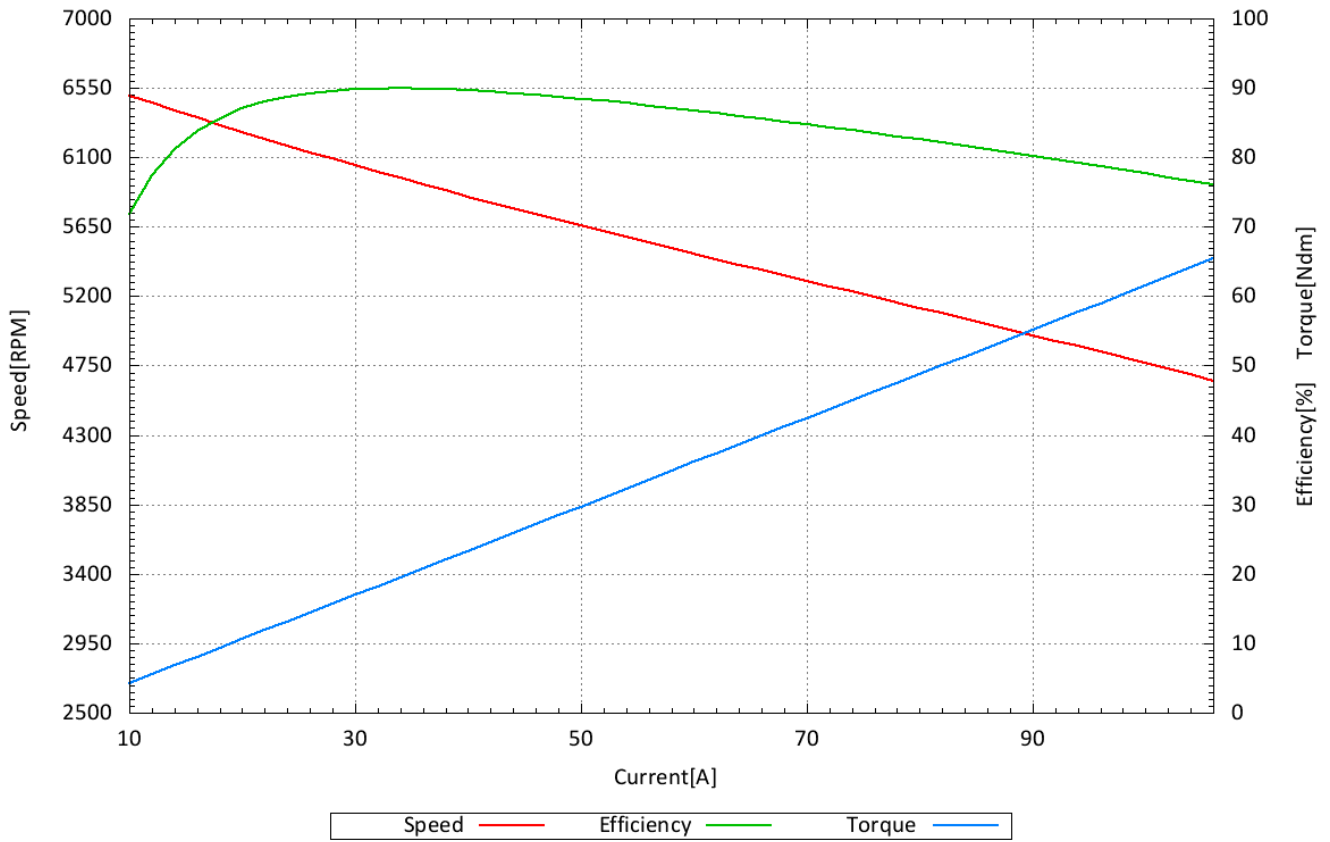
kV = specific rpm

kn = rpm drop per Amp

kT = torque constant

¹ incl. Controller

HP430_50_B8_P20_40V_25032024



Report calculated on Test Bench Results

Motor type: **NOVA 4-50-B8 P20**

Date: 25.03.2024

Bearing type: regular

Controller: Common ESC

Measuring Parameter

Voltage: **45.0 [V]**

Throttle setting: 100%

Calculated Motor Constants

nl: 7,401.1 [RPM] lo: 3.5 [A] kv: 166.1 [RPM/V] kn: -21.06 [RPM/A] kT: 6.43 [Ncm/A]

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency ¹ [%]
44.9	10.0	7,315.1	449.0	317.9	41.5	70.80
44.9	12.0	7,262.6	538.8	413.7	54.4	76.79
44.9	14.0	7,210.8	628.6	507.4	67.2	80.72
44.9	16.0	7,159.9	718.4	600.6	80.1	83.60
44.9	18.0	7,109.7	808.2	692.4	93.0	85.67
44.9	20.0	7,060.3	898.0	782.2	105.8	87.11
44.9	22.0	7,011.7	987.8	871.6	118.7	88.23
44.9	24.0	6,963.8	1,077.6	959.0	131.5	88.99
44.8	26.0	6,916.6	1,164.8	1,045.9	144.4	89.79
44.8	28.0	6,870.1	1,254.4	1,131.7	157.3	90.22
44.8	30.0	6,824.2	1,344.0	1,215.6	170.1	90.45
44.8	32.0	6,779.0	1,433.6	1,299.1	183.0	90.62
44.8	34.0	6,734.4	1,523.2	1,381.5	195.9	90.70
44.8	36.0	6,690.4	1,612.8	1,462.2	208.7	90.66
44.8	38.0	6,647.0	1,702.4	1,542.5	221.6	90.61
44.8	40.0	6,604.1	1,792.0	1,621.1	234.4	90.46
44.8	42.0	6,561.8	1,881.6	1,699.3	247.3	90.31
44.7	44.0	6,519.9	1,966.8	1,776.5	260.2	90.33
44.7	46.0	6,478.6	2,056.2	1,852.1	273.0	90.08
44.7	48.0	6,437.8	2,145.6	1,927.4	285.9	89.83
44.7	50.0	6,397.4	2,235.0	2,001.1	298.7	89.53
44.7	52.0	6,357.4	2,324.4	2,074.5	311.6	89.25
44.7	54.0	6,317.9	2,413.8	2,146.9	324.5	88.94
44.7	56.0	6,278.7	2,503.2	2,217.8	337.3	88.60
44.7	58.0	6,239.9	2,592.6	2,288.3	350.2	88.26
44.7	60.0	6,201.4	2,682.0	2,357.4	363.0	87.90

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency ¹ [%]
44.6	62.0	6,163.3	2,765.2	2,426.1	375.9	87.74
44.6	64.0	6,125.5	2,854.4	2,494.0	388.8	87.37
44.6	66.0	6,087.9	2,943.6	2,560.3	401.6	86.98
44.6	68.0	6,050.7	3,032.8	2,626.4	414.5	86.60
44.6	70.0	6,013.6	3,122.0	2,690.9	427.3	86.19
44.6	72.0	5,976.8	3,211.2	2,755.2	440.2	85.80
44.6	74.0	5,940.2	3,300.4	2,818.5	453.1	85.40
44.6	76.0	5,903.7	3,389.6	2,880.4	465.9	84.98
44.5	78.0	5,867.4	3,471.0	2,941.9	478.8	84.76
44.5	80.0	5,831.3	3,560.0	3,002.0	491.6	84.32
44.5	82.0	5,795.3	3,649.0	3,061.7	504.5	83.91
44.5	84.0	5,759.3	3,738.0	3,120.5	517.4	83.48
44.5	86.0	5,723.5	3,827.0	3,177.8	530.2	83.04
44.5	88.0	5,687.6	3,916.0	3,234.7	543.1	82.60
44.5	90.0	5,651.8	4,005.0	3,290.7	556.0	82.17
44.5	92.0	5,616.1	4,094.0	3,345.2	568.8	81.71
44.5	94.0	5,580.3	4,183.0	3,399.3	581.7	81.26
44.4	96.0	5,544.5	4,262.4	3,451.8	594.5	80.98
44.4	98.0	5,508.6	4,351.2	3,503.8	607.4	80.53
44.4	100.0	5,472.6	4,440.0	3,554.9	620.3	80.06
44.4	102.0	5,436.6	4,528.8	3,604.4	633.1	79.59
44.4	104.0	5,400.4	4,617.6	3,653.3	646.0	79.12
44.4	106.0	5,364.1	4,706.4	3,700.7	658.8	78.63

nl = rpm with no load

lo = current with no load

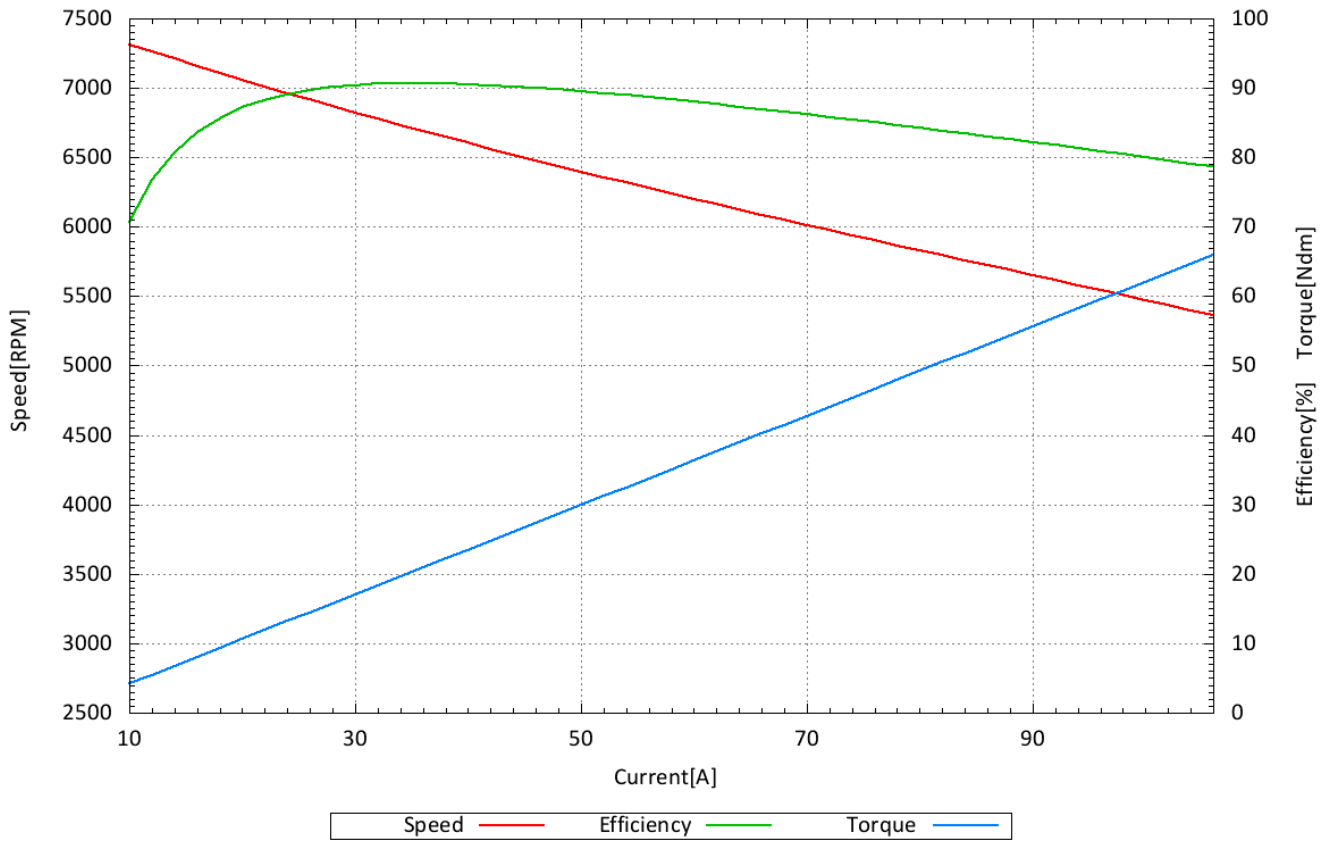
kV = specific rpm

kn = rpm drop per Amp

kT = torque constant

¹ incl. Controller

HP430_50_B8_P20_45V_25032024



Report calculated on Test Bench Results

Motor type: **NOVA 4-50-B8 P20**

Date: 25.03.2024

Bearing type: regular

Controller: Common ESC

Measuring Parameter

Voltage: **50.0 [V]**

Throttle setting: 100%

Calculated Motor Constants

nl: 8,267.2 [RPM] lo: 3.5 [A] kv: 167.0 [RPM/V] kn: -22.96 [RPM/A] kT: 6.41 [Ncm/A]

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency ¹ [%]
50.0	10.0	8,177.7	500.0	354.5	41.4	70.91
49.9	12.0	8,119.4	598.8	460.8	54.2	76.96
49.9	14.0	8,062.2	698.6	566.5	67.1	81.09
49.9	16.0	8,005.9	798.4	669.9	79.9	83.90
49.9	18.0	7,950.7	898.2	771.8	92.7	85.93
49.9	20.0	7,896.3	998.0	872.4	105.5	87.41
49.9	22.0	7,842.9	1,097.8	971.6	118.3	88.50
49.9	24.0	7,790.4	1,197.6	1,070.3	131.2	89.37
49.9	26.0	7,738.7	1,297.4	1,167.0	144.0	89.95
49.9	28.0	7,687.8	1,397.2	1,262.3	156.8	90.35
49.9	30.0	7,637.8	1,497.0	1,356.5	169.6	90.62
49.9	32.0	7,588.5	1,596.8	1,449.5	182.4	90.77
49.8	34.0	7,539.9	1,693.2	1,541.3	195.2	91.03
49.8	36.0	7,492.1	1,792.8	1,632.7	208.1	91.07
49.8	38.0	7,444.9	1,892.4	1,722.2	220.9	91.01
49.8	40.0	7,398.4	1,992.0	1,810.6	233.7	90.89
49.8	42.0	7,352.5	2,091.6	1,897.9	246.5	90.74
49.8	44.0	7,307.2	2,191.2	1,984.2	259.3	90.55
49.8	46.0	7,262.5	2,290.8	2,069.4	272.1	90.34
49.8	48.0	7,218.2	2,390.4	2,154.3	285.0	90.12
49.8	50.0	7,174.5	2,490.0	2,237.4	297.8	89.86
49.8	52.0	7,131.3	2,589.6	2,319.5	310.6	89.57
49.8	54.0	7,088.5	2,689.2	2,400.6	323.4	89.27
49.8	56.0	7,046.2	2,788.8	2,480.7	336.2	88.95
49.7	58.0	7,004.2	2,882.6	2,560.6	349.1	88.83
49.7	60.0	6,962.6	2,982.0	2,638.7	361.9	88.49

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency ¹ [%]
49.7	62.0	6,921.3	3,081.4	2,715.8	374.7	88.14
49.7	64.0	6,880.3	3,180.8	2,792.0	387.5	87.78
49.7	66.0	6,839.6	3,280.2	2,867.1	400.3	87.41
49.7	68.0	6,799.1	3,379.6	2,941.3	413.1	87.03
49.7	70.0	6,758.9	3,479.0	3,015.2	426.0	86.67
49.7	72.0	6,718.8	3,578.4	3,087.4	438.8	86.28
49.7	74.0	6,678.9	3,677.8	3,158.5	451.6	85.88
49.7	76.0	6,639.1	3,777.2	3,228.7	464.4	85.48
49.7	78.0	6,599.4	3,876.6	3,297.9	477.2	85.07
49.6	80.0	6,559.8	3,968.0	3,366.7	490.1	84.85
49.6	82.0	6,520.2	4,067.2	3,433.8	502.9	84.43
49.6	84.0	6,480.7	4,166.4	3,499.8	515.7	84.00
49.6	86.0	6,441.1	4,265.6	3,564.8	528.5	83.57
49.6	88.0	6,401.4	4,364.8	3,628.6	541.3	83.13
49.6	90.0	6,361.7	4,464.0	3,691.4	554.1	82.69
49.6	92.0	6,321.9	4,563.2	3,753.7	567.0	82.26
49.6	94.0	6,281.9	4,662.4	3,814.2	579.8	81.81
49.6	96.0	6,241.8	4,761.6	3,873.5	592.6	81.35
49.6	98.0	6,201.5	4,860.8	3,931.6	605.4	80.88
49.6	100.0	6,161.0	4,960.0	3,988.5	618.2	80.41
49.5	102.0	6,120.2	5,049.0	4,044.8	631.1	80.11
49.5	104.0	6,079.1	5,148.0	4,099.1	643.9	79.62
49.5	106.0	6,037.8	5,247.0	4,152.2	656.7	79.13

nl = rpm with no load

lo = current with no load

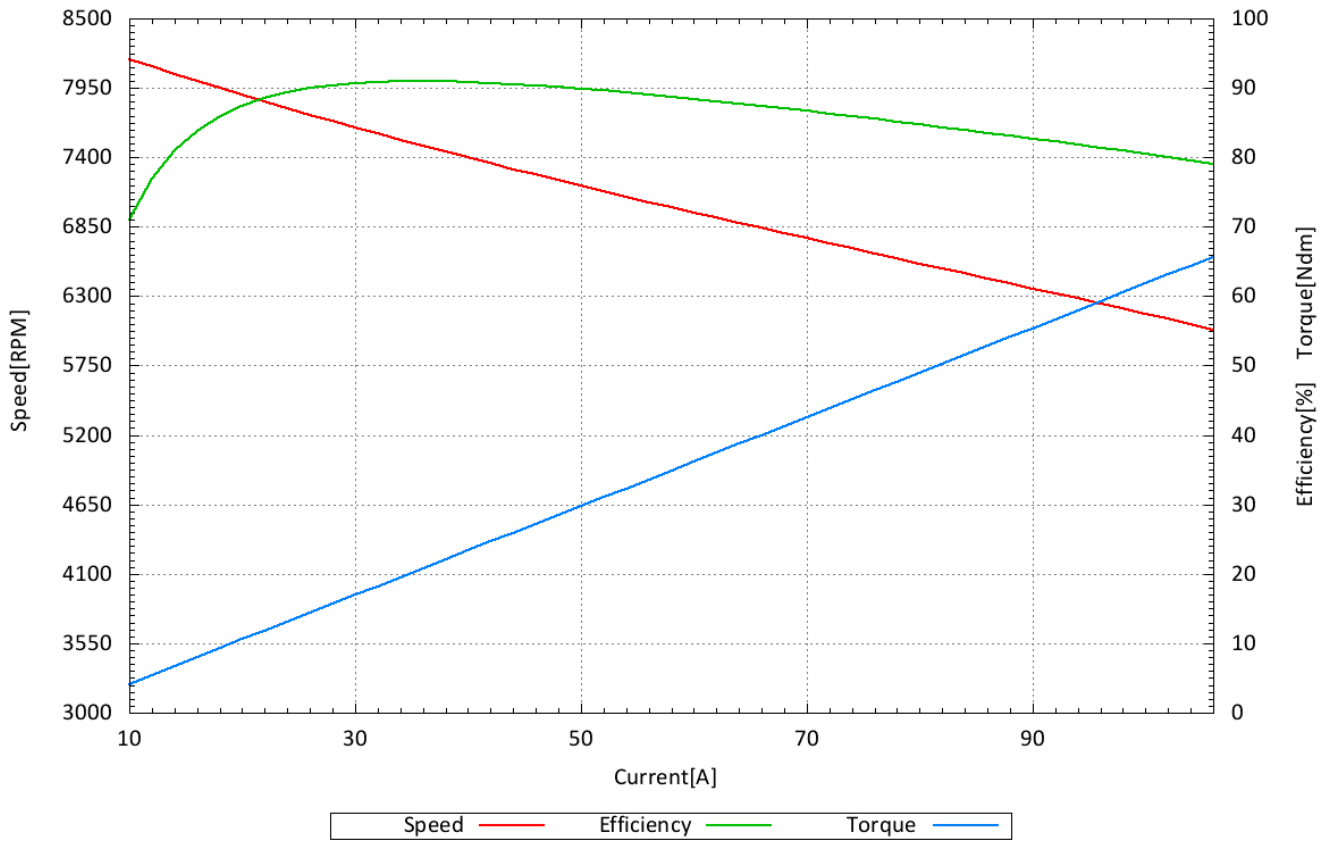
kV = specific rpm

kn = rpm drop per Amp

kT = torque constant

¹ incl. Controller

HP430_50_B8_P20_50V_25032024



Report calculated on Test Bench Results

Motor type: **NOVA 4-50-B8 P20**

Date: 25.03.2024

Bearing type: regular

Controller: Common ESC

Measuring Parameter

Voltage: **55.0 [V]**

Throttle setting: 100%

Calculated Motor Constants

nl: 9,098.5 [RPM] lo: 3.4 [A] kv: 166.9 [RPM/V] kn: -24.13 [RPM/A] kT: 6.35 [Ncm/A]

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency ¹ [%]
55.0	10.0	9,007.6	550.0	393.3	41.7	71.52
54.9	12.0	8,944.1	658.8	509.5	54.4	77.34
54.9	14.0	8,881.9	768.6	624.1	67.1	81.20
54.9	16.0	8,820.9	878.4	737.1	79.8	83.92
54.9	18.0	8,761.1	988.2	848.7	92.5	85.88
54.9	20.0	8,702.5	1,098.0	959.6	105.3	87.40
54.9	22.0	8,645.1	1,207.8	1,068.3	118.0	88.45
54.9	24.0	8,588.7	1,317.6	1,175.5	130.7	89.22
54.9	26.0	8,533.4	1,427.4	1,281.4	143.4	89.77
54.9	28.0	8,479.1	1,537.2	1,386.1	156.1	90.17
54.9	30.0	8,425.8	1,647.0	1,489.4	168.8	90.43
54.9	32.0	8,373.4	1,756.8	1,591.5	181.5	90.59
54.9	34.0	8,322.0	1,866.6	1,692.4	194.2	90.67
54.8	36.0	8,271.3	1,972.8	1,792.1	206.9	90.84
54.8	38.0	8,221.5	2,082.4	1,890.7	219.6	90.79
54.8	40.0	8,172.5	2,192.0	1,988.1	232.3	90.70
54.8	42.0	8,124.2	2,301.6	2,084.4	245.0	90.56
54.8	44.0	8,076.6	2,411.2	2,179.6	257.7	90.39
54.8	46.0	8,029.7	2,520.8	2,273.7	270.4	90.20
54.8	48.0	7,983.3	2,630.4	2,366.7	283.1	89.98
54.8	50.0	7,937.6	2,740.0	2,459.6	295.9	89.77
54.8	52.0	7,892.4	2,849.6	2,550.5	308.6	89.51
54.8	54.0	7,847.7	2,959.2	2,640.5	321.3	89.23
54.8	56.0	7,803.4	3,068.8	2,729.3	334.0	88.94
54.7	58.0	7,759.6	3,172.6	2,817.2	346.7	88.80
54.7	60.0	7,716.2	3,282.0	2,904.1	359.4	88.49

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency ¹ [%]
54.7	62.0	7,673.1	3,391.4	2,989.9	372.1	88.16
54.7	64.0	7,630.2	3,500.8	3,074.7	384.8	87.83
54.7	66.0	7,587.7	3,610.2	3,158.5	397.5	87.49
54.7	68.0	7,545.4	3,719.6	3,241.2	410.2	87.14
54.7	70.0	7,503.2	3,829.0	3,322.9	422.9	86.78
54.7	72.0	7,461.2	3,938.4	3,403.5	435.6	86.42
54.7	74.0	7,419.3	4,047.8	3,483.1	448.3	86.05
54.7	76.0	7,377.5	4,157.2	3,561.5	461.0	85.67
54.7	78.0	7,335.6	4,266.6	3,639.6	473.8	85.31
54.6	80.0	7,293.8	4,368.0	3,715.9	486.5	85.07
54.6	82.0	7,251.9	4,477.2	3,791.0	499.2	84.67
54.6	84.0	7,209.9	4,586.4	3,864.9	511.9	84.27
54.6	86.0	7,167.8	4,695.6	3,937.7	524.6	83.86
54.6	88.0	7,125.5	4,804.8	4,009.2	537.3	83.44
54.6	90.0	7,082.9	4,914.0	4,079.5	550.0	83.02
54.6	92.0	7,040.2	5,023.2	4,148.5	562.7	82.59
54.6	94.0	6,997.1	5,132.4	4,216.2	575.4	82.15
54.6	96.0	6,953.7	5,241.6	4,282.5	588.1	81.70
54.6	98.0	6,909.9	5,350.8	4,347.4	600.8	81.25
54.6	100.0	6,865.7	5,460.0	4,410.9	613.5	80.79
54.6	102.0	6,821.0	5,569.2	4,472.9	626.2	80.32
54.5	104.0	6,775.9	5,668.0	4,533.4	638.9	79.98
54.5	106.0	6,730.2	5,777.0	4,592.4	651.6	79.49

nl = rpm with no load

lo = current with no load

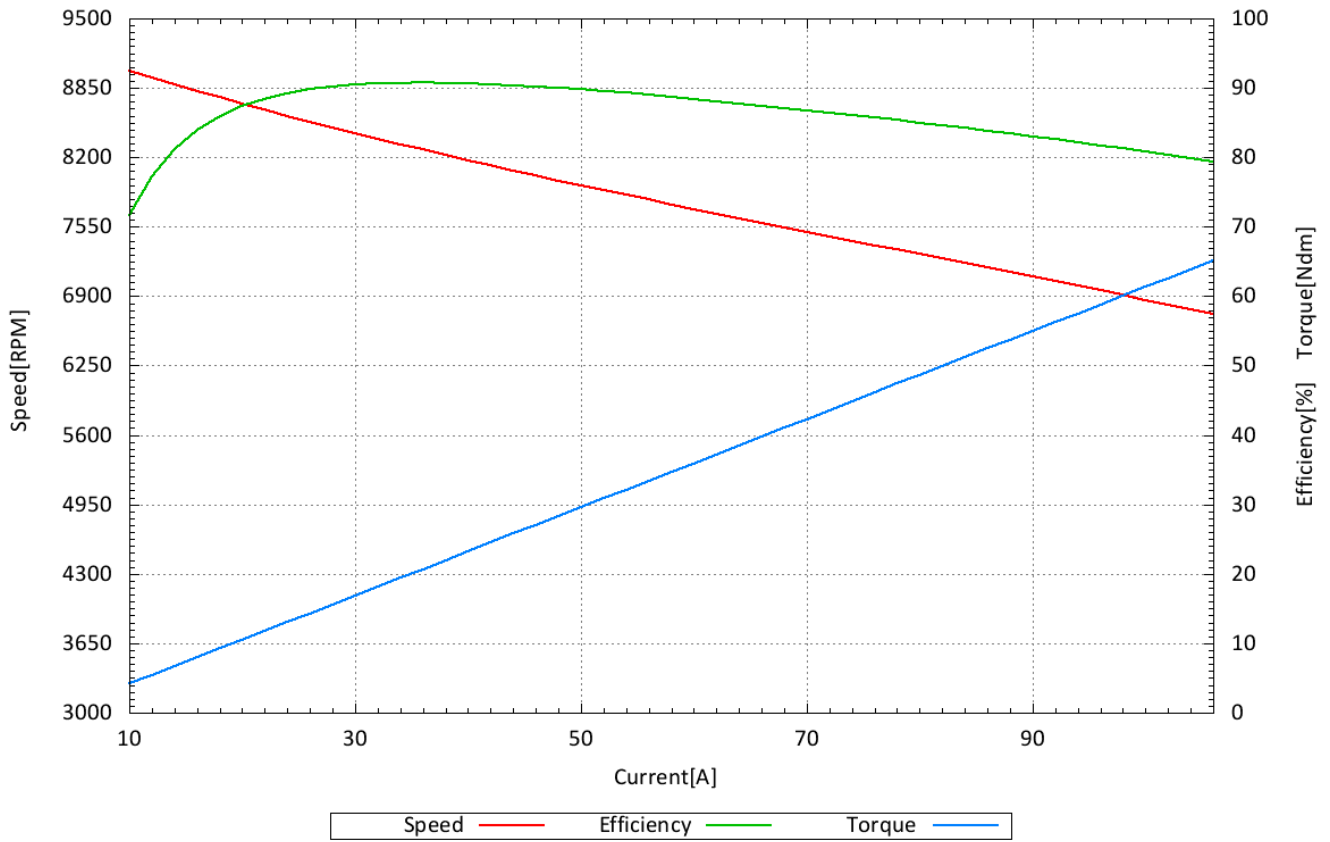
kV = specific rpm

kn = rpm drop per Amp

kT = torque constant

¹ incl. Controller

HP430_50_B8_P20_55V_25032024



Report calculated on Test Bench Results

Motor type: **NOVA 4-50-B8 P20**

Date: 25.03.2024

Bearing type: regular

Controller: Common ESC

Measuring Parameter

Voltage: **60.0 [V]**

Throttle setting: 100%

Calculated Motor Constants

nl: 9,905.5 [RPM] lo: 3.3 [A] kv: 166.5 [RPM/V] kn: -25.16 [RPM/A] kT: 6.36 [Ncm/A]

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency ¹ [%]
60.0	10.0	9,803.9	600.0	439.4	42.8	73.24
59.9	12.0	9,739.1	718.8	567.1	55.6	78.89
59.9	14.0	9,675.4	838.6	692.0	68.3	82.52
59.9	16.0	9,612.8	958.4	815.4	81.0	85.08
59.9	18.0	9,551.3	1,078.2	937.2	93.7	86.92
59.9	20.0	9,490.9	1,198.0	1,057.5	106.4	88.27
59.9	22.0	9,431.5	1,317.8	1,176.3	119.1	89.26
59.9	24.0	9,373.2	1,437.6	1,293.7	131.8	89.99
59.9	26.0	9,315.8	1,557.4	1,409.7	144.5	90.51
59.9	28.0	9,259.3	1,677.2	1,525.2	157.3	90.94
59.9	30.0	9,203.8	1,797.0	1,638.5	170.0	91.18
59.9	32.0	9,149.1	1,916.8	1,750.4	182.7	91.32
59.8	34.0	9,095.3	2,033.2	1,861.1	195.4	91.54
59.8	36.0	9,042.4	2,152.8	1,970.5	208.1	91.53
59.8	38.0	8,990.2	2,272.4	2,078.7	220.8	91.48
59.8	40.0	8,938.8	2,392.0	2,185.7	233.5	91.38
59.8	42.0	8,888.1	2,511.6	2,291.5	246.2	91.24
59.8	44.0	8,838.2	2,631.2	2,397.1	259.0	91.10
59.8	46.0	8,788.9	2,750.8	2,500.6	271.7	90.91
59.8	48.0	8,740.3	2,870.4	2,603.1	284.4	90.69
59.8	50.0	8,692.2	2,990.0	2,704.3	297.1	90.45
59.8	52.0	8,644.8	3,109.6	2,804.6	309.8	90.19
59.8	54.0	8,597.9	3,229.2	2,903.7	322.5	89.92
59.7	56.0	8,551.6	3,343.2	3,001.8	335.2	89.79
59.7	58.0	8,505.7	3,462.6	3,098.8	347.9	89.49
59.7	60.0	8,460.3	3,582.0	3,195.7	360.7	89.21

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency ¹ [%]
59.7	62.0	8,415.4	3,701.4	3,290.6	373.4	88.90
59.7	64.0	8,370.8	3,820.8	3,384.5	386.1	88.58
59.7	66.0	8,326.7	3,940.2	3,477.4	398.8	88.25
59.7	68.0	8,282.8	4,059.6	3,569.2	411.5	87.92
59.7	70.0	8,239.3	4,179.0	3,660.1	424.2	87.58
59.7	72.0	8,196.1	4,298.4	3,749.9	436.9	87.24
59.7	74.0	8,153.2	4,417.8	3,838.7	449.6	86.89
59.7	76.0	8,110.5	4,537.2	3,927.3	462.4	86.56
59.6	78.0	8,067.9	4,648.8	4,014.0	475.1	86.34
59.6	80.0	8,025.6	4,768.0	4,099.7	487.8	85.98
59.6	82.0	7,983.3	4,887.2	4,184.2	500.5	85.62
59.6	84.0	7,941.2	5,006.4	4,267.8	513.2	85.25
59.6	86.0	7,899.2	5,125.6	4,350.3	525.9	84.87
59.6	88.0	7,857.2	5,244.8	4,431.6	538.6	84.50
59.6	90.0	7,815.2	5,364.0	4,511.9	551.3	84.11
59.6	92.0	7,773.3	5,483.2	4,591.9	564.1	83.74
59.6	94.0	7,731.3	5,602.4	4,669.9	576.8	83.36
59.6	96.0	7,689.2	5,721.6	4,746.7	589.5	82.96
59.5	98.0	7,647.0	5,831.0	4,822.4	602.2	82.70
59.5	100.0	7,604.7	5,950.0	4,896.8	614.9	82.30
59.5	102.0	7,562.2	6,069.0	4,970.0	627.6	81.89
59.5	104.0	7,519.5	6,188.0	5,042.0	640.3	81.48
59.5	106.0	7,476.6	6,307.0	5,112.6	653.0	81.06

nl = rpm with no load

lo = current with no load

kV = specific rpm

kn = rpm drop per Amp

kT = torque constant

¹ incl. Controller

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