

## Report calculated on Test Bench Results

Motor type: **ORBIT 15-30-B6 P20**

Date: 14.03.2024

Bearing type: regular

Controller: Common ESC

### Measuring Parameter

Voltage: **15.0 [V]**

Throttle setting: 100%

### Calculated Motor Constants

nl: 2,818.0 [RPM]    lo: 5.2 [A]            kv: 189.0 [RPM/V]    kn: -3.24 [RPM/A]    kT: 5.17 [Ncm/A]

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency <sup>1</sup> [%]
15.0	40.0	2,705.0	600.0	510.2	180.1	85.03
15.0	45.0	2,688.8	675.0	579.8	205.9	85.89
15.0	50.0	2,672.5	750.0	648.7	231.8	86.50
15.0	55.0	2,656.3	825.0	716.6	257.6	86.86
15.0	60.0	2,640.1	900.0	783.8	283.5	87.09
15.0	65.0	2,623.9	975.0	849.9	309.3	87.17
15.0	70.0	2,607.6	1,050.0	915.3	335.2	87.17
15.0	75.0	2,591.4	1,125.0	979.6	361.0	87.08
15.0	80.0	2,575.2	1,200.0	1,043.4	386.9	86.95
15.0	85.0	2,559.0	1,275.0	1,105.9	412.7	86.74
14.9	90.0	2,542.8	1,341.0	1,167.9	438.6	87.09
14.9	95.0	2,526.5	1,415.5	1,228.7	464.4	86.80
14.9	100.0	2,510.3	1,490.0	1,288.9	490.3	86.50
14.9	105.0	2,494.1	1,564.5	1,348.0	516.1	86.16
14.9	110.0	2,477.9	1,639.0	1,406.4	542.0	85.81
14.9	115.0	2,461.7	1,713.5	1,463.7	567.8	85.42
14.9	120.0	2,445.4	1,788.0	1,520.1	593.6	85.02
14.9	125.0	2,429.2	1,862.5	1,575.9	619.5	84.61
14.9	130.0	2,413.0	1,937.0	1,630.6	645.3	84.18
14.9	135.0	2,396.8	2,011.5	1,684.7	671.2	83.75
14.9	140.0	2,380.6	2,086.0	1,737.6	697.0	83.30
14.9	145.0	2,364.3	2,160.5	1,789.8	722.9	82.84
14.9	150.0	2,348.1	2,235.0	1,841.0	748.7	82.37
14.9	155.0	2,331.9	2,309.5	1,891.5	774.6	81.90
14.9	160.0	2,315.7	2,384.0	1,941.0	800.4	81.42
14.9	165.0	2,299.5	2,458.5	1,989.8	826.3	80.93

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency <sup>1</sup> [%]
14.9	170.0	2,283.2	2,533.0	2,037.3	852.1	80.43
14.9	175.0	2,267.0	2,607.5	2,084.4	878.0	79.94
14.9	180.0	2,250.8	2,682.0	2,130.3	903.8	79.43
14.9	185.0	2,234.6	2,756.5	2,175.6	929.7	78.92
14.9	190.0	2,218.4	2,831.0	2,219.7	955.5	78.41
14.9	195.0	2,202.1	2,905.5	2,263.1	981.4	77.89
14.9	200.0	2,185.9	2,980.0	2,305.6	1,007.2	77.37
14.9	205.0	2,169.7	3,054.5	2,347.1	1,033.0	76.84
14.9	210.0	2,153.5	3,129.0	2,388.0	1,058.9	76.32
14.9	215.0	2,137.3	3,203.5	2,427.7	1,084.7	75.78
14.9	220.0	2,121.0	3,278.0	2,466.8	1,110.6	75.25
14.9	225.0	2,104.8	3,352.5	2,504.8	1,136.4	74.71
14.9	230.0	2,088.6	3,427.0	2,542.2	1,162.3	74.18
14.9	235.0	2,072.4	3,501.5	2,578.4	1,188.1	73.64
14.9	240.0	2,056.2	3,576.0	2,614.0	1,214.0	73.10
14.9	245.0	2,039.9	3,650.5	2,648.4	1,239.8	72.55
14.9	250.0	2,023.7	3,725.0	2,682.3	1,265.7	72.01
14.9	255.0	2,007.5	3,799.5	2,715.1	1,291.5	71.46
14.9	260.0	1,991.3	3,874.0	2,747.2	1,317.4	70.91
14.8	265.0	1,975.0	3,922.0	2,778.0	1,343.2	70.83
14.8	270.0	1,958.8	3,996.0	2,808.4	1,369.1	70.28
14.8	275.0	1,942.6	4,070.0	2,837.6	1,394.9	69.72
14.8	280.0	1,926.4	4,144.0	2,866.2	1,420.8	69.17
14.8	285.0	1,910.2	4,218.0	2,893.7	1,446.6	68.60
14.8	290.0	1,893.9	4,292.0	2,920.2	1,472.4	68.04
14.8	295.0	1,877.7	4,366.0	2,946.1	1,498.3	67.48
14.8	300.0	1,861.5	4,440.0	2,971.0	1,524.1	66.91
14.8	305.0	1,845.3	4,514.0	2,995.2	1,550.0	66.35
14.8	310.0	1,829.1	4,588.0	3,018.3	1,575.8	65.79
14.8	315.0	1,812.8	4,662.0	3,040.6	1,601.7	65.22
14.8	320.0	1,796.6	4,736.0	3,062.0	1,627.5	64.65

nl = rpm with no load

lo = current with no load

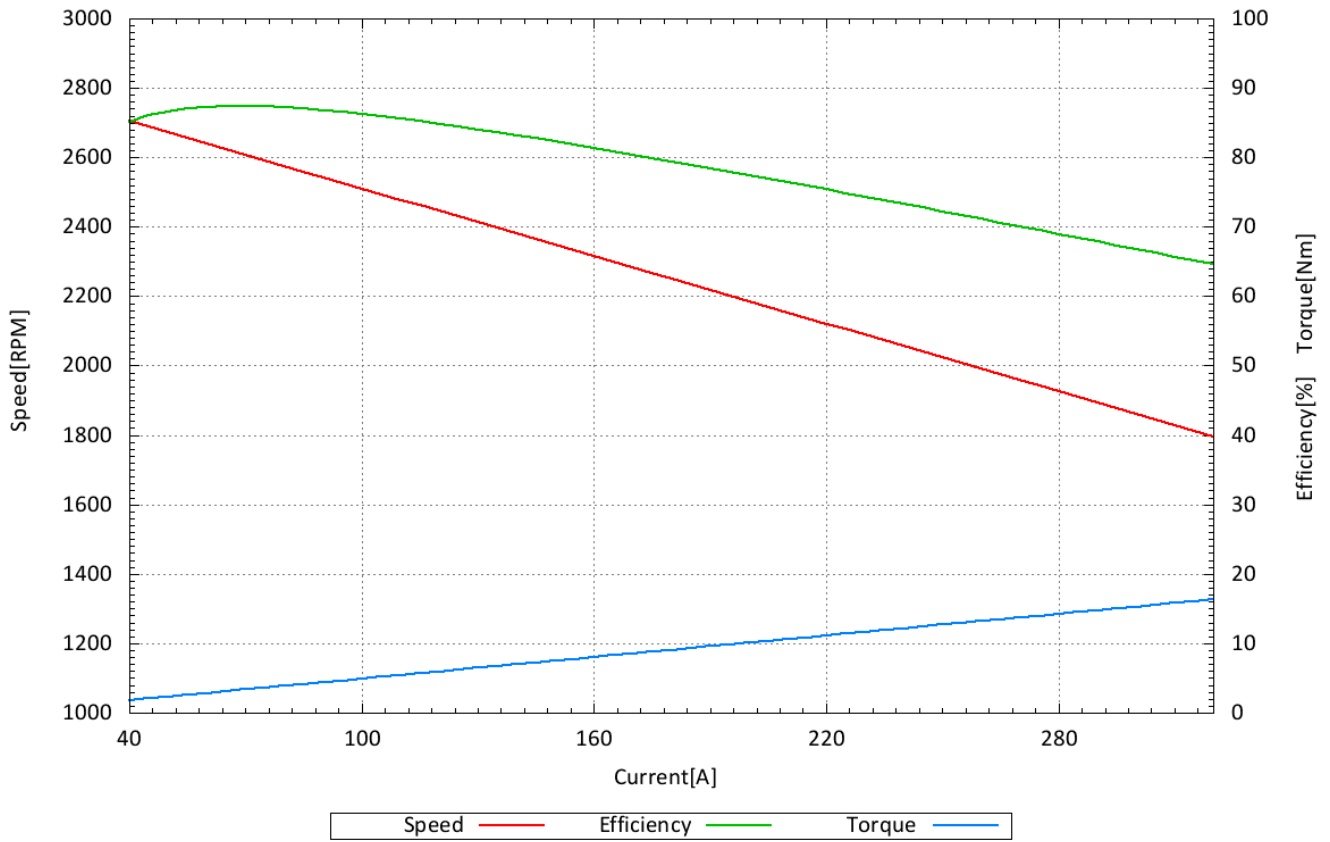
kV = specific rpm

kn = rpm drop per Amp

kT = torque constant

<sup>1</sup> incl. Controller

HP940\_30\_B6\_P20\_15V\_14032024



## Report calculated on Test Bench Results

Motor type: **ORBIT 15-30-B6 P20**

Date: 14.03.2024

Bearing type: regular

Controller: Common ESC

### Measuring Parameter

Voltage: **20.0 [V]**

Throttle setting: 100%

### Calculated Motor Constants

nl: 3,753.6 [RPM]    lo: 5.7 [A]    kv: 188.8 [RPM/V]    kn: -3.87 [RPM/A]    kT: 5.24 [Ncm/A]

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency <sup>1</sup> [%]
19.9	40.0	3,620.6	796.0	681.7	179.8	85.64
19.9	45.0	3,601.3	895.5	776.9	206.0	86.75
19.9	50.0	3,581.9	995.0	871.0	232.2	87.53
19.9	55.0	3,562.6	1,094.5	964.0	258.4	88.08
19.9	60.0	3,543.2	1,194.0	1,056.0	284.6	88.44
19.9	65.0	3,523.8	1,293.5	1,146.9	310.8	88.67
19.9	70.0	3,504.5	1,393.0	1,236.8	337.0	88.78
19.9	75.0	3,485.1	1,492.5	1,325.5	363.2	88.81
19.9	80.0	3,465.7	1,592.0	1,413.2	389.4	88.77
19.8	85.0	3,446.4	1,683.0	1,499.9	415.6	89.12
19.8	90.0	3,427.0	1,782.0	1,585.5	441.8	88.97
19.8	95.0	3,407.6	1,881.0	1,669.7	467.9	88.76
19.8	100.0	3,388.3	1,980.0	1,753.2	494.1	88.54
19.8	105.0	3,368.9	2,079.0	1,835.6	520.3	88.29
19.8	110.0	3,349.5	2,178.0	1,916.9	546.5	88.01
19.8	115.0	3,330.2	2,277.0	1,997.2	572.7	87.71
19.8	120.0	3,310.8	2,376.0	2,076.4	598.9	87.39
19.8	125.0	3,291.4	2,475.0	2,154.6	625.1	87.05
19.8	130.0	3,272.1	2,574.0	2,231.7	651.3	86.70
19.8	135.0	3,252.7	2,673.0	2,307.7	677.5	86.33
19.7	140.0	3,233.3	2,758.0	2,382.7	703.7	86.39
19.7	145.0	3,214.0	2,856.5	2,456.6	729.9	86.00
19.7	150.0	3,194.6	2,955.0	2,529.4	756.1	85.60
19.7	155.0	3,175.2	3,053.5	2,601.2	782.3	85.19
19.7	160.0	3,155.9	3,152.0	2,672.0	808.5	84.77
19.7	165.0	3,136.5	3,250.5	2,741.6	834.7	84.34

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency <sup>1</sup> [%]
19.7	170.0	3,117.1	3,349.0	2,810.2	860.9	83.91
19.7	175.0	3,097.8	3,447.5	2,877.8	887.1	83.47
19.7	180.0	3,078.4	3,546.0	2,944.2	913.3	83.03
19.7	185.0	3,059.0	3,644.5	3,009.6	939.5	82.58
19.7	190.0	3,039.7	3,743.0	3,074.0	965.7	82.13
19.6	195.0	3,020.3	3,822.0	3,137.2	991.9	82.08
19.6	200.0	3,000.9	3,920.0	3,199.4	1,018.1	81.62
19.6	205.0	2,981.6	4,018.0	3,260.6	1,044.3	81.15
19.6	210.0	2,962.2	4,116.0	3,320.7	1,070.5	80.68
19.6	215.0	2,942.8	4,214.0	3,379.7	1,096.7	80.20
19.6	220.0	2,923.5	4,312.0	3,437.7	1,122.9	79.72
19.6	225.0	2,904.1	4,410.0	3,494.6	1,149.1	79.24
19.6	230.0	2,884.7	4,508.0	3,550.4	1,175.3	78.76
19.6	235.0	2,865.4	4,606.0	3,605.3	1,201.5	78.27
19.6	240.0	2,846.0	4,704.0	3,658.9	1,227.7	77.78
19.6	245.0	2,826.6	4,802.0	3,711.6	1,253.9	77.29
19.5	250.0	2,807.3	4,875.0	3,763.2	1,280.1	77.19
19.5	255.0	2,787.9	4,972.5	3,813.7	1,306.3	76.70
19.5	260.0	2,768.5	5,070.0	3,863.1	1,332.5	76.20
19.5	265.0	2,749.2	5,167.5	3,911.3	1,358.6	75.69
19.5	270.0	2,729.8	5,265.0	3,958.6	1,384.8	75.19
19.5	275.0	2,710.4	5,362.5	4,004.9	1,411.0	74.68
19.5	280.0	2,691.1	5,460.0	4,050.2	1,437.2	74.18
19.5	285.0	2,671.7	5,557.5	4,094.3	1,463.4	73.67
19.5	290.0	2,652.3	5,655.0	4,137.3	1,489.6	73.16
19.5	295.0	2,633.0	5,752.5	4,179.5	1,515.8	72.65
19.5	300.0	2,613.6	5,850.0	4,220.4	1,542.0	72.14
19.4	305.0	2,594.2	5,917.0	4,260.2	1,568.2	72.00
19.4	310.0	2,574.9	6,014.0	4,299.2	1,594.4	71.49
19.4	315.0	2,555.5	6,111.0	4,336.9	1,620.6	70.97
19.4	320.0	2,536.1	6,208.0	4,373.6	1,646.8	70.45

nl = rpm with no load

lo = current with no load

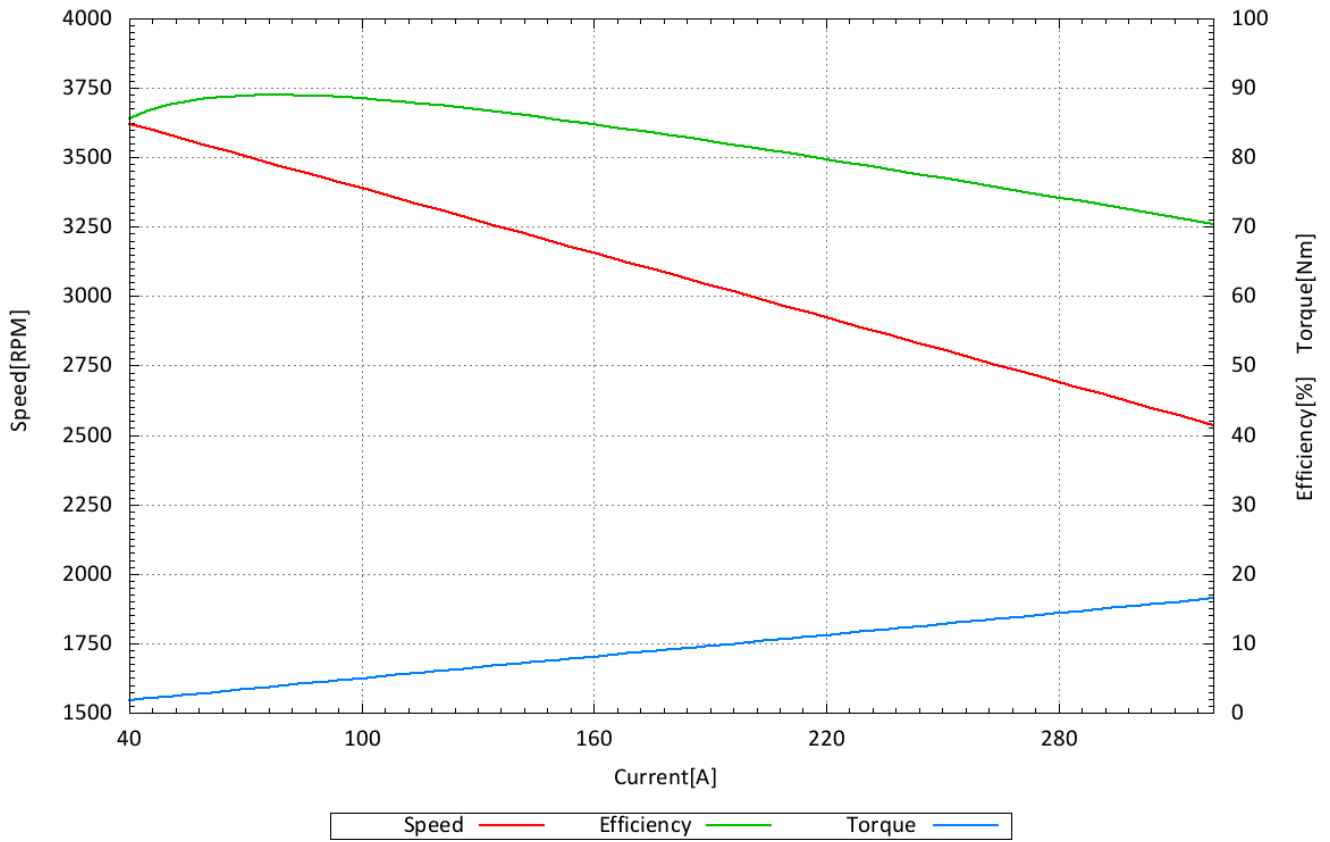
kV = specific rpm

kn = rpm drop per Amp

kT = torque constant

<sup>1</sup> incl. Controller

HP940\_30\_B6\_P20\_20V\_14032024



## Report calculated on Test Bench Results

Motor type: **ORBIT 15-30-B6 P20**

Date: 14.03.2024

Bearing type: regular

Controller: Common ESC

### Measuring Parameter

Voltage: **25.0 [V]**

Throttle setting: 100%

### Calculated Motor Constants

nl: 4,671.3 [RPM]    lo: 7.9 [A]    kv: 188.3 [RPM/V]    kn: -4.49 [RPM/A]    kT: 5.37 [Ncm/A]

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency <sup>1</sup> [%]
25.0	40.0	4,527.4	1,000.0	815.5	172.0	81.55
25.0	45.0	4,504.9	1,125.0	938.3	198.9	83.41
24.9	50.0	4,482.5	1,245.0	1,059.5	225.7	85.10
24.9	55.0	4,460.0	1,369.5	1,179.3	252.5	86.11
24.9	60.0	4,437.6	1,494.0	1,298.4	279.4	86.91
24.9	65.0	4,415.1	1,618.5	1,415.7	306.2	87.47
24.9	70.0	4,392.7	1,743.0	1,531.8	333.0	87.88
24.9	75.0	4,370.2	1,867.5	1,647.1	359.9	88.20
24.9	80.0	4,347.8	1,992.0	1,760.6	386.7	88.39
24.9	85.0	4,325.3	2,116.5	1,872.9	413.5	88.49
24.9	90.0	4,302.9	2,241.0	1,984.4	440.4	88.55
24.9	95.0	4,280.5	2,365.5	2,094.2	467.2	88.53
24.9	100.0	4,258.0	2,490.0	2,202.7	494.0	88.46
24.9	105.0	4,235.6	2,614.5	2,310.5	520.9	88.37
24.9	110.0	4,213.1	2,739.0	2,416.4	547.7	88.22
24.9	115.0	4,190.7	2,863.5	2,521.2	574.5	88.05
24.9	120.0	4,168.2	2,988.0	2,625.1	601.4	87.85
24.9	125.0	4,145.8	3,112.5	2,727.3	628.2	87.62
24.9	130.0	4,123.3	3,237.0	2,828.2	655.0	87.37
24.9	135.0	4,100.9	3,361.5	2,928.0	681.8	87.10
24.9	140.0	4,078.4	3,486.0	3,026.8	708.7	86.83
24.8	145.0	4,056.0	3,596.0	3,124.0	735.5	86.87
24.8	150.0	4,033.5	3,720.0	3,219.9	762.3	86.56
24.8	155.0	4,011.1	3,844.0	3,315.0	789.2	86.24
24.8	160.0	3,988.6	3,968.0	3,408.3	816.0	85.89
24.8	165.0	3,966.2	4,092.0	3,500.5	842.8	85.54

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency <sup>1</sup> [%]
24.8	170.0	3,943.7	4,216.0	3,591.7	869.7	85.19
24.8	175.0	3,921.3	4,340.0	3,681.4	896.5	84.82
24.8	180.0	3,898.8	4,464.0	3,769.7	923.3	84.45
24.8	185.0	3,876.4	4,588.0	3,857.2	950.2	84.07
24.8	190.0	3,853.9	4,712.0	3,943.0	977.0	83.68
24.8	195.0	3,831.5	4,836.0	4,027.6	1,003.8	83.28
24.8	200.0	3,809.0	4,960.0	4,111.2	1,030.7	82.89
24.8	205.0	3,786.6	5,084.0	4,193.3	1,057.5	82.48
24.8	210.0	3,764.2	5,208.0	4,274.2	1,084.3	82.07
24.8	215.0	3,741.7	5,332.0	4,354.0	1,111.2	81.66
24.8	220.0	3,719.3	5,456.0	4,432.3	1,138.0	81.24
24.8	225.0	3,696.8	5,580.0	4,509.3	1,164.8	80.81
24.8	230.0	3,674.4	5,704.0	4,585.5	1,191.7	80.39
24.8	235.0	3,651.9	5,828.0	4,659.9	1,218.5	79.96
24.7	240.0	3,629.5	5,928.0	4,733.1	1,245.3	79.84
24.7	245.0	3,607.0	6,051.5	4,805.4	1,272.2	79.41
24.7	250.0	3,584.6	6,175.0	4,876.2	1,299.0	78.97
24.7	255.0	3,562.1	6,298.5	4,945.5	1,325.8	78.52
24.7	260.0	3,539.7	6,422.0	5,014.1	1,352.7	78.08
24.7	265.0	3,517.2	6,545.5	5,081.0	1,379.5	77.63
24.7	270.0	3,494.8	6,669.0	5,146.7	1,406.3	77.17
24.7	275.0	3,472.3	6,792.5	5,211.0	1,433.1	76.72
24.7	280.0	3,449.9	6,916.0	5,274.6	1,460.0	76.27
24.7	285.0	3,427.4	7,039.5	5,336.4	1,486.8	75.81
24.7	290.0	3,405.0	7,163.0	5,397.1	1,513.6	75.35
24.7	295.0	3,382.5	7,286.5	5,456.7	1,540.5	74.89
24.7	300.0	3,360.1	7,410.0	5,514.8	1,567.3	74.42
24.7	305.0	3,337.6	7,533.5	5,571.6	1,594.1	73.96
24.7	310.0	3,315.2	7,657.0	5,627.6	1,621.0	73.50
24.7	315.0	3,292.8	7,780.5	5,682.0	1,647.8	73.03
24.7	320.0	3,270.3	7,904.0	5,734.9	1,674.6	72.56

nl = rpm with no load

lo = current with no load

kV = specific rpm

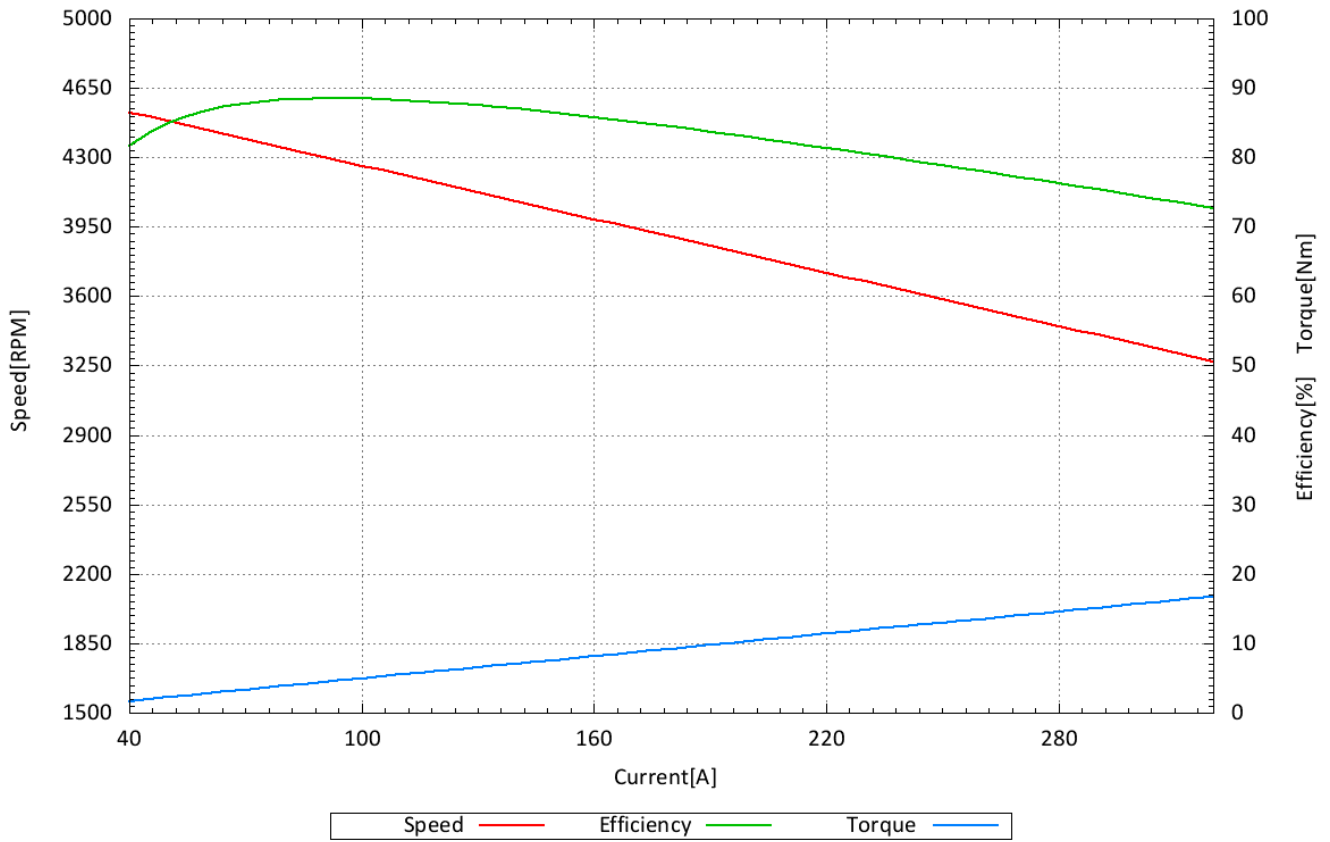
kn = rpm drop per Amp

kT = torque constant

<sup>1</sup> incl. Controller



HP940\_30\_B6\_P20\_25V\_14032024



## Report calculated on Test Bench Results

Motor type: **ORBIT 15-30-B6 P20**

Date: 14.03.2024

Bearing type: regular

Controller: Common ESC

### Measuring Parameter

Voltage: **30.0 [V]**

Throttle setting: 100%

### Calculated Motor Constants

nl: 5,587.6 [RPM]    lo: 9.0 [A]                    kv: 187.8 [RPM/V]    kn: -5.07 [RPM/A]    kT: 5.46 [Ncm/A]

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency <sup>1</sup> [%]
30.0	40.0	5,430.4	1,200.0	964.5	169.6	80.37
30.0	45.0	5,405.0	1,350.0	1,114.5	196.9	82.55
30.0	50.0	5,379.7	1,500.0	1,263.1	224.2	84.20
30.0	55.0	5,354.4	1,650.0	1,410.8	251.6	85.50
29.9	60.0	5,329.0	1,794.0	1,556.4	278.9	86.76
29.9	65.0	5,303.7	1,943.5	1,700.6	306.2	87.50
29.9	70.0	5,278.4	2,093.0	1,843.4	333.5	88.08
29.9	75.0	5,253.1	2,242.5	1,984.8	360.8	88.51
29.9	80.0	5,227.7	2,392.0	2,124.6	388.1	88.82
29.9	85.0	5,202.4	2,541.5	2,263.6	415.5	89.07
29.9	90.0	5,177.1	2,691.0	2,400.6	442.8	89.21
29.9	95.0	5,151.8	2,840.5	2,536.2	470.1	89.29
29.9	100.0	5,126.4	2,990.0	2,670.2	497.4	89.30
29.9	105.0	5,101.1	3,139.5	2,802.9	524.7	89.28
29.9	110.0	5,075.8	3,289.0	2,934.1	552.0	89.21
29.9	115.0	5,050.5	3,438.5	3,063.8	579.3	89.10
29.9	120.0	5,025.1	3,588.0	3,192.6	606.7	88.98
29.9	125.0	4,999.8	3,737.5	3,319.5	634.0	88.82
29.9	130.0	4,974.5	3,887.0	3,444.9	661.3	88.63
29.9	135.0	4,949.2	4,036.5	3,568.9	688.6	88.41
29.9	140.0	4,923.8	4,186.0	3,691.3	715.9	88.18
29.9	145.0	4,898.5	4,335.5	3,812.4	743.2	87.93
29.9	150.0	4,873.2	4,485.0	3,932.5	770.6	87.68
29.9	155.0	4,847.8	4,634.5	4,050.6	797.9	87.40
29.9	160.0	4,822.5	4,784.0	4,167.4	825.2	87.11
29.9	165.0	4,797.2	4,933.5	4,282.6	852.5	86.81

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency <sup>1</sup> [%]
29.9	170.0	4,771.9	5,083.0	4,396.5	879.8	86.49
29.9	175.0	4,746.5	5,232.5	4,508.8	907.1	86.17
29.8	180.0	4,721.2	5,364.0	4,620.2	934.5	86.13
29.8	185.0	4,695.9	5,513.0	4,729.7	961.8	85.79
29.8	190.0	4,670.6	5,662.0	4,837.7	989.1	85.44
29.8	195.0	4,645.2	5,811.0	4,944.2	1,016.4	85.08
29.8	200.0	4,619.9	5,960.0	5,049.4	1,043.7	84.72
29.8	205.0	4,594.6	6,109.0	5,153.1	1,071.0	84.35
29.8	210.0	4,569.3	6,258.0	5,255.8	1,098.4	83.99
29.8	215.0	4,543.9	6,407.0	5,356.5	1,125.7	83.60
29.8	220.0	4,518.6	6,556.0	5,455.8	1,153.0	83.22
29.8	225.0	4,493.3	6,705.0	5,553.8	1,180.3	82.83
29.8	230.0	4,468.0	6,854.0	5,650.2	1,207.6	82.44
29.8	235.0	4,442.6	7,003.0	5,745.1	1,234.9	82.04
29.8	240.0	4,417.3	7,152.0	5,839.1	1,262.3	81.64
29.8	245.0	4,392.0	7,301.0	5,931.2	1,289.6	81.24
29.8	250.0	4,366.6	7,450.0	6,021.8	1,316.9	80.83
29.8	255.0	4,341.3	7,599.0	6,111.0	1,344.2	80.42
29.8	260.0	4,316.0	7,748.0	6,198.8	1,371.5	80.00
29.8	265.0	4,290.7	7,897.0	6,285.1	1,398.8	79.59
29.8	270.0	4,265.3	8,046.0	6,369.8	1,426.1	79.17
29.8	275.0	4,240.0	8,195.0	6,453.7	1,453.5	78.75
29.8	280.0	4,214.7	8,344.0	6,535.7	1,480.8	78.33
29.8	285.0	4,189.4	8,493.0	6,616.2	1,508.1	77.90
29.8	290.0	4,164.0	8,642.0	6,695.2	1,535.4	77.47
29.7	295.0	4,138.7	8,791.5	6,772.8	1,562.7	77.30
29.7	300.0	4,113.4	8,940.0	6,849.0	1,590.0	76.87
29.7	305.0	4,088.1	9,088.5	6,924.2	1,617.4	76.44
29.7	310.0	4,062.7	9,237.0	6,997.3	1,644.7	76.00
29.7	315.0	4,037.4	9,385.5	7,069.1	1,672.0	75.56
29.7	320.0	4,012.1	9,534.0	7,139.5	1,699.3	75.12

nl = rpm with no load

lo = current with no load

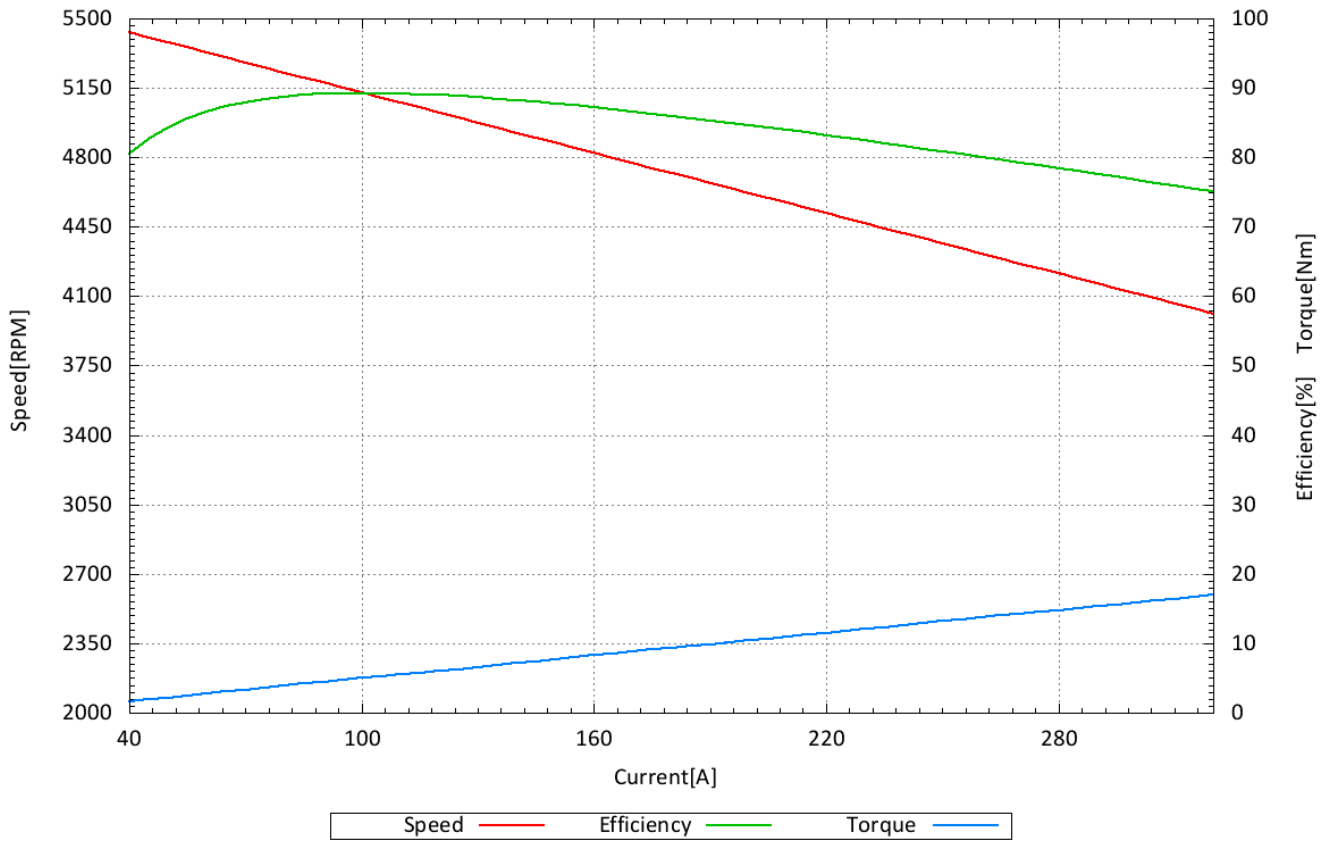
kV = specific rpm

kn = rpm drop per Amp

kT = torque constant

<sup>1</sup> incl. Controller

HP940\_30\_B6\_P20\_30V\_14032024



## Report calculated on Test Bench Results

Motor type: **ORBIT 15-30-B6 P20**

Date: 14.03.2024

Bearing type: regular

Controller: Common ESC

### Measuring Parameter

Voltage: **35.0 [V]**

Throttle setting: 100%

### Calculated Motor Constants

nl: 6,468.1 [RPM]    lo: 9.0 [A]            kv: 186.2 [RPM/V]    kn: -5.40 [RPM/A]    kT: 5.47 [Ncm/A]

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency <sup>1</sup> [%]
35.0	40.0	6,300.7	1,400.0	1,119.0	169.6	79.93
35.0	45.0	6,273.7	1,575.0	1,293.6	196.9	82.13
34.9	50.0	6,246.7	1,745.0	1,466.6	224.2	84.05
34.9	55.0	6,219.7	1,919.5	1,638.7	251.6	85.37
34.9	60.0	6,192.7	2,094.0	1,808.7	278.9	86.37
34.9	65.0	6,165.7	2,268.5	1,977.0	306.2	87.15
34.9	70.0	6,138.8	2,443.0	2,144.6	333.6	87.78
34.9	75.0	6,111.8	2,617.5	2,309.9	360.9	88.25
34.9	80.0	6,084.8	2,792.0	2,474.2	388.3	88.62
34.9	85.0	6,057.8	2,966.5	2,636.4	415.6	88.87
34.9	90.0	6,030.8	3,141.0	2,797.1	442.9	89.05
34.9	95.0	6,003.8	3,315.5	2,956.9	470.3	89.18
34.9	100.0	5,976.8	3,490.0	3,114.4	497.6	89.24
34.9	105.0	5,949.9	3,664.5	3,270.5	524.9	89.25
34.9	110.0	5,922.9	3,839.0	3,425.6	552.3	89.23
34.9	115.0	5,895.9	4,013.5	3,578.6	579.6	89.16
34.9	120.0	5,868.9	4,188.0	3,729.9	606.9	89.06
34.9	125.0	5,841.9	4,362.5	3,880.4	634.3	88.95
34.9	130.0	5,814.9	4,537.0	4,028.7	661.6	88.80
34.9	135.0	5,787.9	4,711.5	4,176.1	689.0	88.64
34.9	140.0	5,760.9	4,886.0	4,321.3	716.3	88.44
34.8	145.0	5,734.0	5,046.0	4,465.0	743.6	88.49
34.8	150.0	5,707.0	5,220.0	4,607.8	771.0	88.27
34.8	155.0	5,680.0	5,394.0	4,748.4	798.3	88.03
34.8	160.0	5,653.0	5,568.0	4,887.4	825.6	87.78
34.8	165.0	5,626.0	5,742.0	5,025.5	853.0	87.52

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency <sup>1</sup> [%]
34.8	170.0	5,599.0	5,916.0	5,161.4	880.3	87.25
34.8	175.0	5,572.0	6,090.0	5,295.8	907.6	86.96
34.8	180.0	5,545.1	6,264.0	5,429.4	935.0	86.68
34.8	185.0	5,518.1	6,438.0	5,560.7	962.3	86.37
34.8	190.0	5,491.1	6,612.0	5,691.0	989.7	86.07
34.8	195.0	5,464.1	6,786.0	5,819.3	1,017.0	85.75
34.8	200.0	5,437.1	6,960.0	5,945.9	1,044.3	85.43
34.8	205.0	5,410.1	7,134.0	6,071.7	1,071.7	85.11
34.8	210.0	5,383.1	7,308.0	6,195.2	1,099.0	84.77
34.8	215.0	5,356.1	7,482.0	6,317.3	1,126.3	84.43
34.8	220.0	5,329.2	7,656.0	6,438.5	1,153.7	84.10
34.8	225.0	5,302.2	7,830.0	6,557.4	1,181.0	83.75
34.8	230.0	5,275.2	8,004.0	6,674.9	1,208.3	83.39
34.8	235.0	5,248.2	8,178.0	6,791.3	1,235.7	83.04
34.8	240.0	5,221.2	8,352.0	6,905.6	1,263.0	82.68
34.7	245.0	5,194.2	8,501.5	7,018.9	1,290.4	82.56
34.7	250.0	5,167.2	8,675.0	7,130.2	1,317.7	82.19
34.7	255.0	5,140.3	8,848.5	7,240.0	1,345.0	81.82
34.7	260.0	5,113.3	9,022.0	7,348.7	1,372.4	81.45
34.7	265.0	5,086.3	9,195.5	7,455.3	1,399.7	81.08
34.7	270.0	5,059.3	9,369.0	7,560.4	1,427.0	80.70
34.7	275.0	5,032.3	9,542.5	7,664.4	1,454.4	80.32
34.7	280.0	5,005.3	9,716.0	7,766.4	1,481.7	79.93
34.7	285.0	4,978.3	9,889.5	7,866.8	1,509.0	79.55
34.7	290.0	4,951.3	10,063.0	7,966.2	1,536.4	79.16
34.7	295.0	4,924.4	10,236.5	8,063.7	1,563.7	78.77
34.7	300.0	4,897.4	10,410.0	8,160.0	1,591.1	78.39
34.7	305.0	4,870.4	10,583.5	8,254.3	1,618.4	77.99
34.7	310.0	4,843.4	10,757.0	8,347.0	1,645.7	77.60
34.7	315.0	4,816.4	10,930.5	8,438.7	1,673.1	77.20
34.7	320.0	4,789.4	11,104.0	8,528.3	1,700.4	76.80

nl = rpm with no load

lo = current with no load

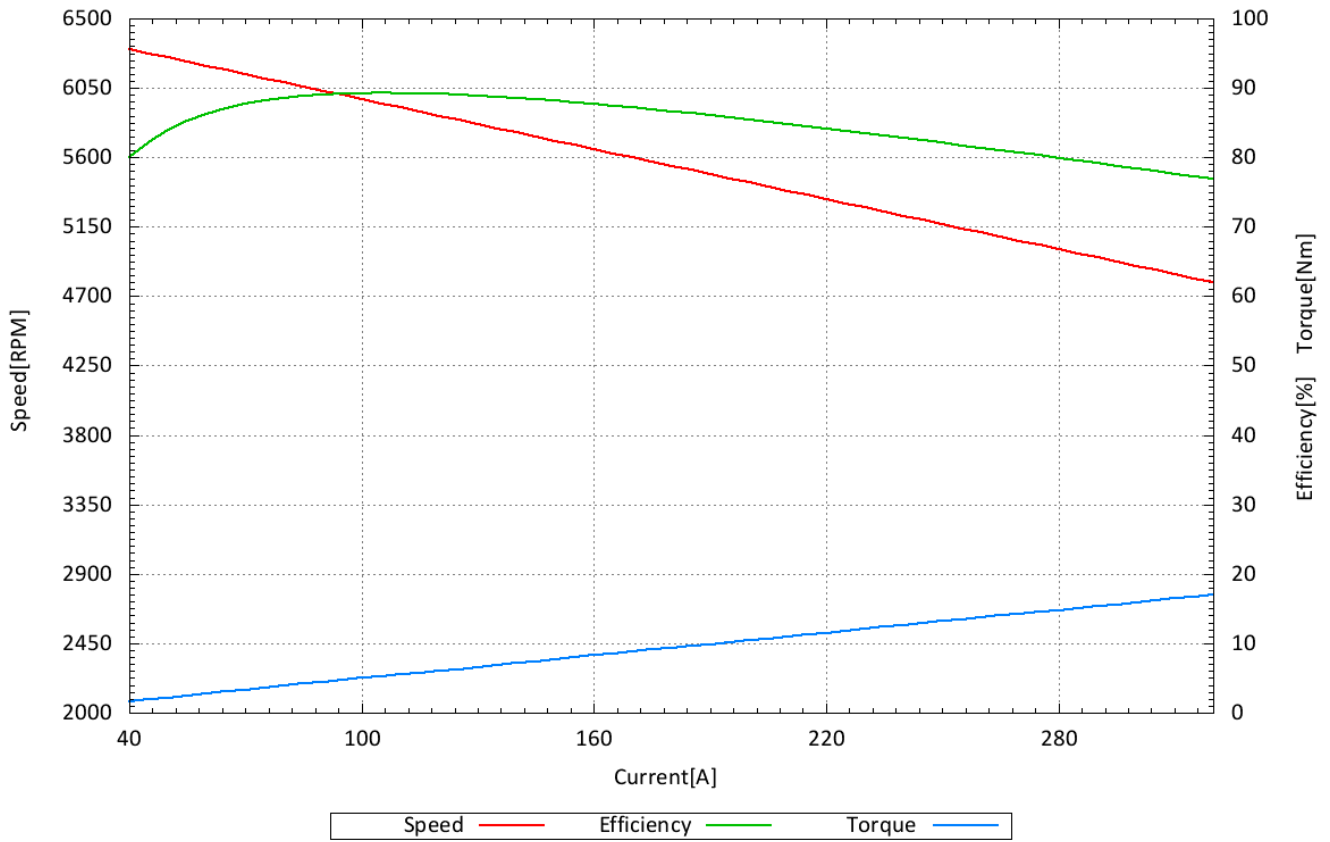
kV = specific rpm

kn = rpm drop per Amp

kT = torque constant

<sup>1</sup> incl. Controller

HP940\_30\_B6\_P20\_35V\_14032024



## Report calculated on Test Bench Results

Motor type: **ORBIT 15-30-B6 P20**

Date: 14.03.2024

Bearing type: regular

Controller: Common ESC

### Measuring Parameter

Voltage: **40.0 [V]**

Throttle setting: 100%

### Calculated Motor Constants

nl: 7,393.3 [RPM]    lo: 9.4 [A]    kv: 186.2 [RPM/V]    kn: -5.77 [RPM/A]    kT: 5.47 [Ncm/A]

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency <sup>1</sup> [%]
40.0	40.0	7,216.7	1,600.0	1,264.3	167.3	79.02
40.0	45.0	7,187.9	1,800.0	1,464.8	194.6	81.38
39.9	50.0	7,159.0	1,995.0	1,664.3	222.0	83.42
39.9	55.0	7,130.2	2,194.5	1,861.5	249.3	84.82
39.9	60.0	7,101.3	2,394.0	2,056.9	276.6	85.92
39.9	65.0	7,072.5	2,593.5	2,251.5	304.0	86.81
39.9	70.0	7,043.6	2,793.0	2,443.7	331.3	87.49
39.9	75.0	7,014.8	2,992.5	2,634.2	358.6	88.03
39.9	80.0	6,985.9	3,192.0	2,823.8	386.0	88.47
39.9	85.0	6,957.1	3,391.5	3,011.1	413.3	88.78
39.9	90.0	6,928.2	3,591.0	3,197.4	440.7	89.04
39.9	95.0	6,899.4	3,790.5	3,381.3	468.0	89.21
39.9	100.0	6,870.5	3,990.0	3,563.6	495.3	89.31
39.9	105.0	6,841.7	4,189.5	3,744.9	522.7	89.39
39.9	110.0	6,812.8	4,389.0	3,923.9	550.0	89.40
39.9	115.0	6,784.0	4,588.5	4,101.2	577.3	89.38
39.9	120.0	6,755.1	4,788.0	4,277.6	604.7	89.34
39.9	125.0	6,726.3	4,987.5	4,451.7	632.0	89.26
39.9	130.0	6,697.4	5,187.0	4,624.0	659.3	89.15
39.9	135.0	6,668.6	5,386.5	4,795.5	686.7	89.03
39.9	140.0	6,639.7	5,586.0	4,964.5	714.0	88.87
39.8	145.0	6,610.9	5,771.0	5,132.7	741.4	88.94
39.8	150.0	6,582.0	5,970.0	5,298.4	768.7	88.75
39.8	155.0	6,553.2	6,169.0	5,462.5	796.0	88.55
39.8	160.0	6,524.3	6,368.0	5,625.7	823.4	88.34
39.8	165.0	6,495.5	6,567.0	5,786.5	850.7	88.12



Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency <sup>1</sup> [%]
39.8	170.0	6,466.6	6,766.0	5,945.6	878.0	87.88
39.8	175.0	6,437.8	6,965.0	6,103.9	905.4	87.64
39.8	180.0	6,408.9	7,164.0	6,259.7	932.7	87.38
39.8	185.0	6,380.1	7,363.0	6,414.0	960.0	87.11
39.8	190.0	6,351.2	7,562.0	6,567.2	987.4	86.84
39.8	195.0	6,322.4	7,761.0	6,718.1	1,014.7	86.56
39.8	200.0	6,293.5	7,960.0	6,868.0	1,042.1	86.28
39.8	205.0	6,264.7	8,159.0	7,015.7	1,069.4	85.99
39.8	210.0	6,235.8	8,358.0	7,161.6	1,096.7	85.69
39.8	215.0	6,207.0	8,557.0	7,306.6	1,124.1	85.39
39.8	220.0	6,178.1	8,756.0	7,449.2	1,151.4	85.08
39.8	225.0	6,149.3	8,955.0	7,590.3	1,178.7	84.76
39.8	230.0	6,120.4	9,154.0	7,730.2	1,206.1	84.45
39.8	235.0	6,091.6	9,353.0	7,868.0	1,233.4	84.12
39.8	240.0	6,062.7	9,552.0	8,004.0	1,260.7	83.79
39.7	245.0	6,033.9	9,726.5	8,139.1	1,288.1	83.68
39.7	250.0	6,005.0	9,925.0	8,271.8	1,315.4	83.34
39.7	255.0	5,976.2	10,123.5	8,403.6	1,342.8	83.01
39.7	260.0	5,947.3	10,322.0	8,533.0	1,370.1	82.67
39.7	265.0	5,918.5	10,520.5	8,660.9	1,397.4	82.32
39.7	270.0	5,889.6	10,719.0	8,787.6	1,424.8	81.98
39.7	275.0	5,860.8	10,917.5	8,912.1	1,452.1	81.63
39.7	280.0	5,831.9	11,116.0	9,034.9	1,479.4	81.28
39.7	285.0	5,803.1	11,314.5	9,156.8	1,506.8	80.93
39.7	290.0	5,774.2	11,513.0	9,276.3	1,534.1	80.57
39.7	295.0	5,745.4	11,711.5	9,394.3	1,561.4	80.21
39.7	300.0	5,716.5	11,910.0	9,511.0	1,588.8	79.86
39.7	305.0	5,687.7	12,108.5	9,625.7	1,616.1	79.50
39.7	310.0	5,658.8	12,307.0	9,739.2	1,643.5	79.14
39.7	315.0	5,630.0	12,505.5	9,850.6	1,670.8	78.77
39.7	320.0	5,601.1	12,704.0	9,960.1	1,698.1	78.40

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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