Test Bench Measurement

Motor type: **HP 2120-50-B8 LS P50 RS**

Date: 12.10.2021

Bearing type: RS

Controller: MST 400-160SiC

Measuring Parameter

Voltage: **150.0 [V]**

Throttle setting: 100%

Calculated Motor Constants

nl: 2,040.2 [RPM] Io: 6.7 [A] kV: 13.7 [RPM/V] kn: -2.97 [RPM/A] kT: 81.62 [Ncm/A]

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency[1] [%]
150.0	20.0	2,024.4	3,000.0	2,644.6	1,247.5	88.15
150.0	22.0	2,016.0	3,300.0	2,938.7	1,392.0	89.05
150.0	24.0	2,007.6	3,600.0	3,232.2	1,537.4	89.78
150.0	26.0	1,999.4	3,900.0	3,525.3	1,683.7	90.39
150.0	28.0	1,991.3	4,200.0	3,817.7	1,830.8	90.90
150.0	30.0	1,983.3	4,500.0	4,109.8	1,978.8	91.33
150.0	32.0	1,975.4	4,800.0	4,401.2	2,127.6	91.69
150.0	34.0	1,967.5	5,100.0	4,691.9	2,277.2	92.00
150.0	36.0	1,959.8	5,400.0	4,982.2	2,427.6	92.26
149.9	38.0	1,952.2	5,696.2	5,271.9	2,578.8	92.55
149.9	40.0	1,944.6	5,996.0	5,560.7	2,730.7	92.74
149.9	42.0	1,937.2	6,295.8	5,849.4	2,883.4	92.91
149.9	44.0	1,929.8	6,595.6	6,137.2	3,036.9	93.05
149.9	46.0	1,922.6	6,895.4	6,424.6	3,191.0	93.17
149.9	48.0	1,915.4	7,195.2	6,711.2	3,345.9	93.27
149.9	50.0	1,908.3	7,495.0	6,997.1	3,501.4	93.36
149.9	52.0	1,901.3	7,794.8	7,282.4	3,657.6	93.43
149.9	54.0	1,894.3	8,094.6	7,566.8	3,814.5	93.48
149.9	56.0	1,887.5	8,394.4	7,851.0	3,972.0	93.53
149.9	58.0	1,880.7	8,694.2	8,134.1	4,130.1	93.56
149.9	60.0	1,874.1	8,994.0	8,417.0	4,288.8	93.58
149.9	62.0	1,867.5	9,293.8	8,698.9	4,448.1	93.60
149.8	64.0	1,860.9	9,587.2	8,979.7	4,608.0	93.66
149.8	66.0	1,854.5	9,886.8	9,260.4	4,768.4	93.66
149.8	68.0	1,848.1	10,186.4	9,540.0	4,929.4	93.65
149.8	70.0	1,841.8	10,486.0	9,819.0	5,090.9	93.64

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency[1] [%]
149.8	74.0	1,829.4	11,085.2	10,374.5	5,415.4	93.59
149.8	76.0	1,823.3	11,384.8	10,651.1	5,578.4	93.56
149.8	78.0	1,817.3	11,684.4	10,927.1	5,741.8	93.52
149.8	80.0	1,811.3	11,984.0	11,201.9	5,905.7	93.47
149.8	82.0	1,805.4	12,283.6	11,476.0	6,070.0	93.43
149.8	84.0	1,799.6	12,583.2	11,749.5	6,234.7	93.37
149.8	86.0	1,793.8	12,882.8	12,021.8	6,399.8	93.32
149.8	88.0	1,788.1	13,182.4	12,293.5	6,565.3	93.26
149.8	90.0	1,782.4	13,482.0	12,564.0	6,731.2	93.19
149.7	92.0	1,776.9	13,772.4	12,834.4	6,897.4	93.19
149.7	94.0	1,771.3	14,071.8	13,103.0	7,064.0	93.12
149.7	96.0	1,765.8	14,371.2	13,370.8	7,230.8	93.04
149.7	98.0	1,760.4	14,670.6	13,638.1	7,398.0	92.96
149.7	100.0	1,755.0	14,970.0	13,903.9	7,565.4	92.88
149.7	102.0	1,749.7	15,269.4	14,169.2	7,733.1	92.79
149.7	104.0	1,744.4	15,568.8	14,433.2	7,901.1	92.71
149.7	106.0	1,739.2	15,868.2	14,696.5	8,069.3	92.62
149.7	108.0	1,734.0	16,167.6	14,958.3	8,237.7	92.52
149.7	110.0	1,728.9	16,467.0	15,219.6	8,406.3	92.42
149.7	112.0	1,723.8	16,766.4	15,479.4	8,575.1	92.32
149.7	114.0	1,718.8	17,065.8	15,738.7	8,744.1	92.22
149.7	116.0	1,713.8	17,365.2	15,996.6	8,913.3	92.12
149.7	118.0	1,708.8	17,664.6	16,252.7	9,082.5	92.01
149.6	120.0	1,703.9	17,952.0	16,508.3	9,251.9	91.96
149.6	122.0	1,699.0	18,251.2	16,762.4	9,421.4	91.84
149.6	124.0	1,694.1	18,550.4	17,015.0	9,591.0	91.72
149.6	126.0	1,689.3	18,849.6	17,267.0	9,760.7	91.60
149.6	128.0	1,684.6	19,148.8	17,518.3	9,930.4	91.49
149.6	130.0	1,679.8	19,448.0	17,767.1	10,100.2	91.36
149.6	132.0	1,675.1	19,747.2	18,015.2	10,270.0	91.23
149.6	134.0	1,670.4	20,046.4	18,261.7	10,439.8	91.10
149.6	136.0	1,665.7	20,345.6	18,506.7	10,609.7	90.96
149.6	138.0	1,661.1	20,644.8	18,750.8	10,779.4	90.83
149.6	140.0	1,656.5	20,944.0	18,993.4	10,949.2	90.69
149.6	142.0	1,651.9	21,243.2	19,234.2	11,118.9	90.54
149.6	144.0	1,647.3	21,542.4	19,473.2	11,288.5	90.39
149.5	146.0	1,642.8	21,827.0	19,711.8	11,458.1	90.31
149.5	148.0	1,638.3	22,126.0	19,948.4	11,627.5	90.16
149.5	150.0	1,633.8	22,425.0	20,183.5	11,796.9	90.00

nl = rpm with no load

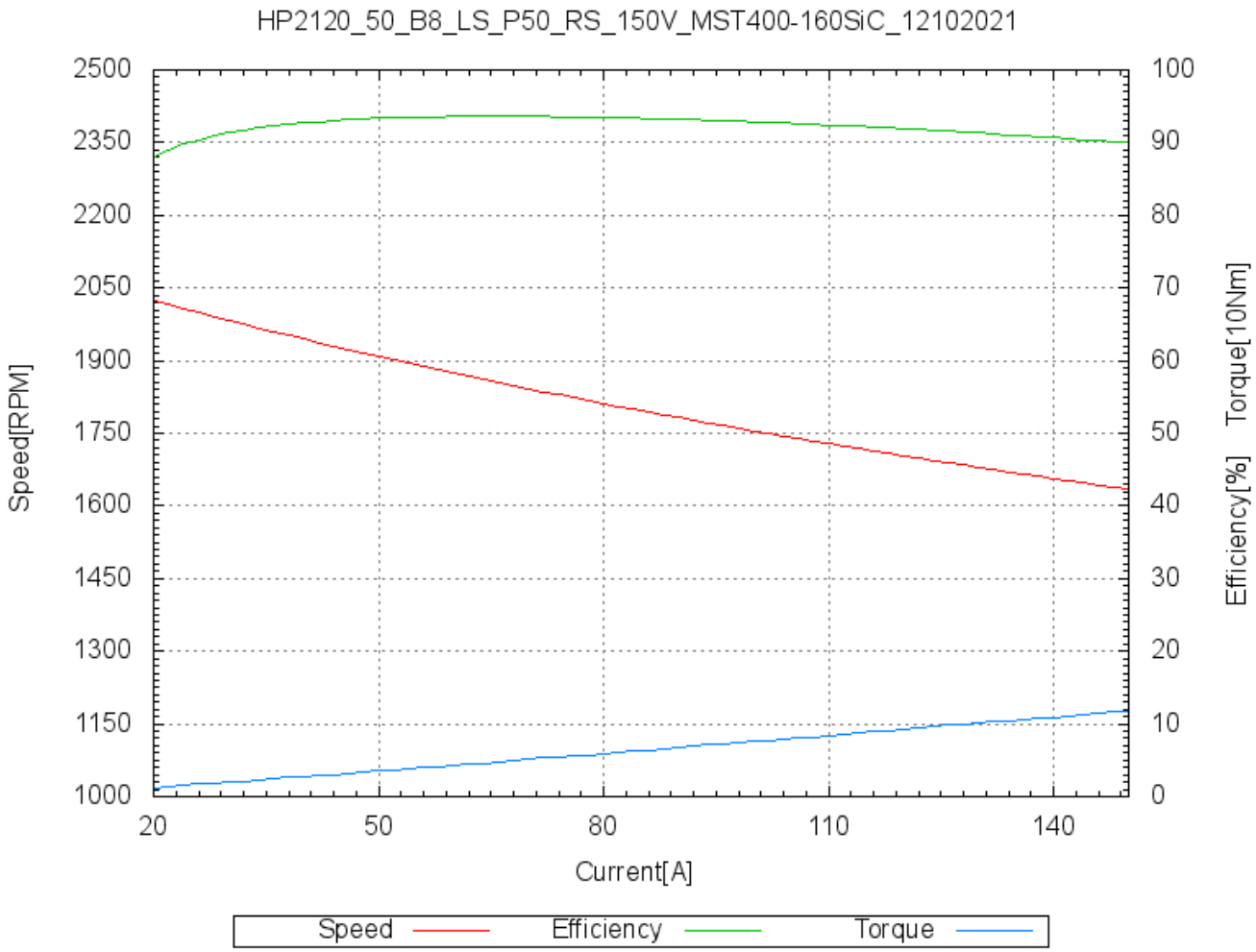
Io = current with no load

kV = specific rpm

kn = rpm drop per Amp

kT = torque constant

[1] incl. Controller


HP2120_50_B8_LS_P50_RS_150V_MST400-160SiC_12102021
Speed[RPM]
Efficiency[%] Torque[10Nm]
Current[A]
2500
2350
2200
2050
1900
1750
1600
1450
1300
1150
1000
100
90
80
70
60
50
40
30
20
10
0
20
50
80
110
140
Speed
Efficiency
Torque

Test Bench Measurement

Motor type: **HP 2120-50-B8 LS P50 RS**

Date: 12.10.2021

Bearing type: RS

Controller: MST 400-160SiC

Measuring Parameter

Voltage: **200.0 [V]**

Throttle setting: 100%

Calculated Motor Constants

nl: 2,710.3 [RPM] Io: 7.1 [A] kV: 13.7 [RPM/V] kn: -3.69 [RPM/A] kT: 81.69 [Ncm/A]

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency[1] [%]
199.7	20.0	2,692.8	3,994.0	3,483.7	1,235.4	87.22
199.7	22.0	2,682.3	4,393.4	3,872.6	1,378.7	88.15
199.7	24.0	2,671.9	4,792.8	4,261.4	1,523.0	88.91
199.7	26.0	2,661.7	5,192.2	4,649.8	1,668.2	89.55
199.7	28.0	2,651.5	5,591.6	5,037.7	1,814.3	90.09
199.7	30.0	2,641.5	5,991.0	5,425.3	1,961.3	90.56
199.7	32.0	2,631.6	6,390.4	5,812.3	2,109.1	90.95
199.7	34.0	2,621.8	6,789.8	6,199.2	2,257.9	91.30
199.7	36.0	2,612.2	7,189.2	6,585.4	2,407.4	91.60
199.6	38.0	2,602.7	7,584.8	6,971.4	2,557.8	91.91
199.6	40.0	2,593.2	7,984.0	7,356.8	2,709.1	92.14
199.6	42.0	2,583.9	8,383.2	7,741.7	2,861.1	92.35
199.6	44.0	2,574.7	8,782.4	8,126.1	3,013.9	92.53
199.6	46.0	2,565.6	9,181.6	8,509.8	3,167.4	92.68
199.6	48.0	2,556.7	9,580.8	8,893.4	3,321.7	92.83
199.6	50.0	2,547.8	9,980.0	9,276.3	3,476.8	92.95
199.6	52.0	2,539.0	10,379.2	9,658.2	3,632.5	93.05
199.6	54.0	2,530.4	10,778.4	10,039.9	3,788.9	93.15
199.6	56.0	2,521.8	11,177.6	10,421.0	3,946.1	93.23
199.6	58.0	2,513.4	11,576.8	10,801.3	4,103.8	93.30
199.6	60.0	2,505.0	11,976.0	11,181.0	4,262.3	93.36
199.6	62.0	2,496.8	12,375.2	11,560.1	4,421.3	93.41
199.6	64.0	2,488.6	12,774.4	11,938.3	4,581.0	93.46
199.6	66.0	2,480.6	13,173.6	12,316.1	4,741.2	93.49
199.5	68.0	2,472.6	13,566.0	12,693.0	4,902.1	93.56
199.5	70.0	2,464.7	13,965.0	13,069.0	5,063.5	93.58

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency[1] [%]
199.5	74.0	2,449.2	14,763.0	13,818.9	5,387.9	93.60
199.5	76.0	2,441.6	15,162.0	14,192.7	5,550.9	93.61
199.5	78.0	2,434.1	15,561.0	14,565.9	5,714.4	93.61
199.5	80.0	2,426.7	15,960.0	14,938.1	5,878.3	93.60
199.5	82.0	2,419.3	16,359.0	15,309.3	6,042.8	93.58
199.5	84.0	2,412.1	16,758.0	15,680.1	6,207.6	93.57
199.5	86.0	2,404.9	17,157.0	16,049.5	6,372.9	93.55
199.5	88.0	2,397.8	17,556.0	16,418.2	6,538.6	93.52
199.5	90.0	2,390.7	17,955.0	16,785.7	6,704.8	93.49
199.5	92.0	2,383.8	18,354.0	17,152.6	6,871.2	93.45
199.5	94.0	2,376.9	18,753.0	17,518.4	7,038.1	93.42
199.5	96.0	2,370.1	19,152.0	17,883.3	7,205.3	93.38
199.4	98.0	2,363.4	19,541.2	18,247.3	7,372.8	93.38
199.4	100.0	2,356.7	19,940.0	18,609.9	7,540.7	93.33
199.4	102.0	2,350.1	20,338.8	18,971.5	7,708.8	93.28
199.4	104.0	2,343.6	20,737.6	19,332.3	7,877.2	93.22
199.4	106.0	2,337.1	21,136.4	19,691.6	8,045.9	93.16
199.4	108.0	2,330.7	21,535.2	20,049.9	8,214.8	93.10
199.4	110.0	2,324.4	21,934.0	20,407.5	8,384.0	93.04
199.4	112.0	2,318.1	22,332.8	20,763.5	8,553.4	92.97
199.4	114.0	2,311.9	22,731.6	21,118.5	8,723.0	92.90
199.4	116.0	2,305.7	23,130.4	21,471.6	8,892.7	92.83
199.4	118.0	2,299.6	23,529.2	21,824.0	9,062.6	92.75
199.4	120.0	2,293.6	23,928.0	22,175.6	9,232.7	92.68
199.4	122.0	2,287.6	24,326.8	22,525.3	9,402.9	92.59
199.4	124.0	2,281.6	24,725.6	22,873.1	9,573.2	92.51
199.4	126.0	2,275.7	25,124.4	23,220.0	9,743.6	92.42
199.3	128.0	2,269.9	25,510.4	23,566.2	9,914.1	92.38
199.3	130.0	2,264.1	25,909.0	23,910.2	10,084.6	92.29
199.3	132.0	2,258.4	26,307.6	24,253.5	10,255.2	92.19
199.3	134.0	2,252.7	26,706.2	24,594.7	10,425.8	92.09
199.3	136.0	2,247.0	27,104.8	24,934.1	10,596.5	91.99
199.3	138.0	2,241.4	27,503.4	25,272.4	10,767.1	91.89
199.3	140.0	2,235.8	27,902.0	25,608.7	10,937.7	91.78
199.3	142.0	2,230.3	28,300.6	25,944.2	11,108.3	91.67
199.3	144.0	2,224.8	28,699.2	26,277.6	11,278.9	91.56
199.3	146.0	2,219.3	29,097.8	26,608.7	11,449.3	91.45
199.3	148.0	2,213.9	29,496.4	26,939.0	11,619.7	91.33
199.3	150.0	2,208.5	29,895.0	27,267.2	11,790.0	91.21

nl = rpm with no load

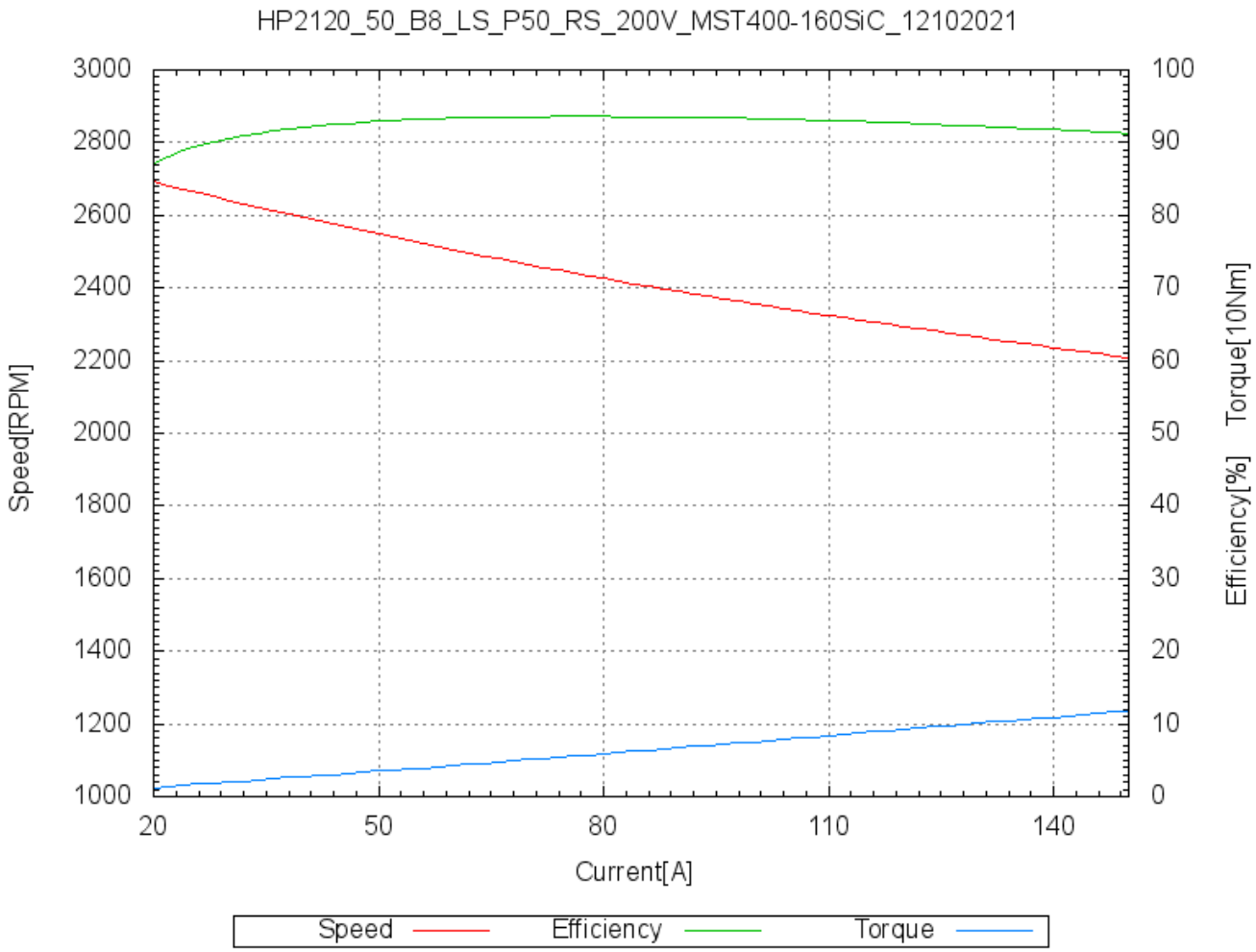
Io = current with no load

kV = specific rpm

kn = rpm drop per Amp

kT = torque constant

[1] incl. Controller


HP2120_50_B8_LS_P50_RS_200V_MST400-160SiC_12102021
Speed[RPM]
Efficiency[%] Torque[10Nm]
Current[A]
3000
2800
2600
2400
2200
2000
1800
1600
1400
1200
1000
100
90
80
70
60
50
40
30
20
10
0
20
50
80
110
140
Speed
Efficiency
Torque

Test Bench Measurement

Motor type: **HP 2120-50-B8 LS P50 RS**

Date: 12.10.2021

Bearing type: RS

Controller: MST 400-160SiC

Measuring Parameter

Voltage: **250.0 [V]**

Throttle setting: 100%

Calculated Motor Constants

nl: 3,354.2 [RPM] Io: 8.0 [A] kV: 13.6 [RPM/V] kn: -4.09 [RPM/A] kT: 82.26 [Ncm/A]

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency[1] [%]
249.5	20.0	3,351.9	4,990.0	4,211.1	1,199.7	84.39
249.5	22.0	3,339.6	5,489.0	4,688.4	1,340.6	85.41
249.5	24.0	3,327.4	5,988.0	5,165.7	1,482.5	86.27
249.5	26.0	3,315.4	6,487.0	5,643.9	1,625.6	87.00
249.4	28.0	3,303.5	6,983.2	6,122.5	1,769.8	87.67
249.4	30.0	3,291.7	7,482.0	6,601.1	1,915.0	88.23
249.4	32.0	3,280.1	7,980.8	7,080.4	2,061.3	88.72
249.4	34.0	3,268.6	8,479.6	7,560.1	2,208.7	89.16
249.4	36.0	3,257.2	8,978.4	8,039.6	2,357.0	89.54
249.4	38.0	3,246.0	9,477.2	8,519.8	2,506.4	89.90
249.4	40.0	3,234.9	9,976.0	8,999.4	2,656.6	90.21
249.4	42.0	3,224.0	10,474.8	9,479.9	2,807.9	90.50
249.4	44.0	3,213.1	10,973.6	9,959.7	2,960.0	90.76
249.3	46.0	3,202.4	11,467.8	10,439.6	3,113.0	91.03
249.3	48.0	3,191.8	11,966.4	10,919.4	3,266.9	91.25
249.3	50.0	3,181.4	12,465.0	11,399.6	3,421.7	91.45
249.3	52.0	3,171.0	12,963.6	11,878.7	3,577.2	91.63
249.3	54.0	3,160.8	13,462.2	12,358.1	3,733.6	91.80
249.3	56.0	3,150.7	13,960.8	12,837.3	3,890.8	91.95
249.3	58.0	3,140.8	14,459.4	13,316.3	4,048.7	92.09
249.3	60.0	3,130.9	14,958.0	13,794.4	4,207.3	92.22
249.3	62.0	3,121.2	15,456.6	14,272.3	4,366.6	92.34
249.2	64.0	3,111.5	15,948.8	14,749.3	4,526.6	92.48
249.2	66.0	3,102.0	16,447.2	15,226.3	4,687.3	92.58
249.2	68.0	3,092.6	16,945.6	15,702.5	4,848.6	92.66
249.2	70.0	3,083.3	17,444.0	16,178.3	5,010.6	92.74

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency[1] [%]
249.2	74.0	3,065.0	18,440.8	17,127.4	5,336.2	92.88
249.2	76.0	3,056.1	18,939.2	17,601.6	5,499.9	92.94
249.2	78.0	3,047.2	19,437.6	18,073.9	5,664.0	92.98
249.2	80.0	3,038.4	19,936.0	18,545.8	5,828.7	93.03
249.1	82.0	3,029.7	20,426.2	19,016.8	5,993.9	93.10
249.1	84.0	3,021.2	20,924.4	19,487.4	6,159.5	93.13
249.1	86.0	3,012.7	21,422.6	19,956.3	6,325.5	93.16
249.1	88.0	3,004.3	21,920.8	20,424.1	6,491.9	93.17
249.1	90.0	2,996.0	22,419.0	20,891.3	6,658.8	93.19
249.1	92.0	2,987.8	22,917.2	21,357.3	6,826.0	93.19
249.1	94.0	2,979.7	23,415.4	21,822.1	6,993.5	93.20
249.1	96.0	2,971.7	23,913.6	22,286.0	7,161.4	93.19
249.1	98.0	2,963.8	24,411.8	22,748.5	7,329.5	93.19
249.0	100.0	2,955.9	24,900.0	23,209.1	7,497.9	93.21
249.0	102.0	2,948.2	25,398.0	23,669.5	7,666.6	93.19
249.0	104.0	2,940.5	25,896.0	24,127.7	7,835.5	93.17
249.0	106.0	2,932.9	26,394.0	24,584.7	8,004.6	93.15
249.0	108.0	2,925.4	26,892.0	25,040.2	8,173.8	93.11
249.0	110.0	2,917.9	27,390.0	25,493.9	8,343.3	93.08
249.0	112.0	2,910.6	27,888.0	25,946.8	8,512.8	93.04
249.0	114.0	2,903.3	28,386.0	26,397.7	8,682.5	93.00
249.0	116.0	2,896.1	28,884.0	26,847.2	8,852.3	92.95
248.9	118.0	2,889.0	29,370.2	27,295.0	9,022.1	92.93
248.9	120.0	2,881.9	29,868.0	27,740.4	9,191.9	92.88
248.9	122.0	2,874.9	30,365.8	28,184.5	9,361.8	92.82
248.9	124.0	2,868.0	30,863.6	28,627.2	9,531.7	92.75
248.9	126.0	2,861.1	31,361.4	29,067.3	9,701.6	92.69
248.9	128.0	2,854.3	31,859.2	29,505.8	9,871.4	92.61
248.9	130.0	2,847.6	32,357.0	29,942.6	10,041.1	92.54
248.9	132.0	2,840.9	32,854.8	30,376.7	10,210.7	92.46
248.9	134.0	2,834.3	33,352.6	30,809.2	10,380.2	92.37
248.8	136.0	2,827.8	33,836.8	31,240.2	10,549.6	92.33
248.8	138.0	2,821.3	34,334.4	31,668.2	10,718.8	92.23
248.8	140.0	2,814.9	34,832.0	32,094.6	10,887.8	92.14
248.8	142.0	2,808.5	35,329.6	32,518.1	11,056.6	92.04
248.8	144.0	2,802.2	35,827.2	32,939.9	11,225.2	91.94
248.8	146.0	2,795.9	36,324.8	33,358.6	11,393.5	91.83
248.8	148.0	2,789.7	36,822.4	33,775.4	11,561.5	91.73
248.8	150.0	2,783.5	37,320.0	34,189.1	11,729.2	91.61

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency[1] [%]
248.8	154.0	2,771.3	38,315.2	35,010.0	12,063.7	91.37
248.7	156.0	2,765.3	38,797.2	35,417.0	12,230.4	91.29
248.7	158.0	2,759.3	39,294.6	35,820.4	12,396.6	91.16
248.7	160.0	2,753.3	39,792.0	36,220.8	12,562.5	91.03
248.7	162.0	2,747.4	40,289.4	36,619.1	12,727.9	90.89
248.7	164.0	2,741.5	40,786.8	37,014.1	12,892.9	90.75
248.7	166.0	2,735.7	41,284.2	37,406.8	13,057.3	90.61
248.7	168.0	2,729.9	41,781.6	37,796.3	13,221.3	90.46
248.7	170.0	2,724.1	42,279.0	38,182.1	13,384.7	90.31
248.7	172.0	2,718.4	42,776.4	38,566.0	13,547.6	90.16
248.6	174.0	2,712.7	43,256.4	38,946.2	13,709.9	90.04
248.6	176.0	2,707.0	43,753.6	39,322.7	13,871.6	89.87
248.6	178.0	2,701.3	44,250.8	39,695.3	14,032.6	89.71
248.6	180.0	2,695.7	44,748.0	40,065.9	14,193.0	89.54

nl = rpm with no load

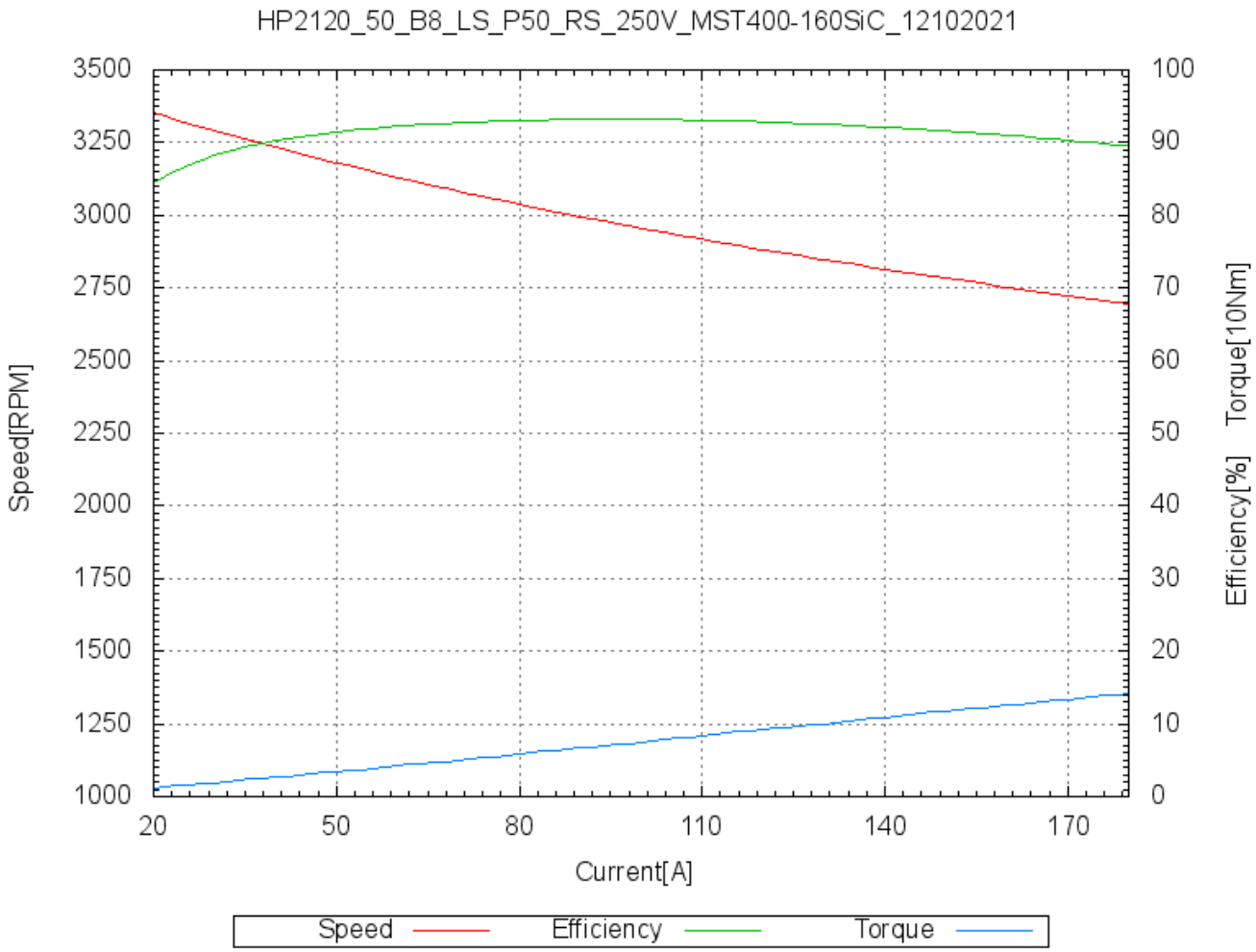
Io = current with no load

kV = specific rpm

kn = rpm drop per Amp

kT = torque constant

[1] incl. Controller


HP2120_50_B8_LS_P50_RS_250V_MST400-160SiC_12102021
Speed[RPM]
Efficiency[%] Torque[10Nm]
Current[A]
3500
3250
3000
2750
2500
2250
2000
1750
1500
1250
1000
100
90
80
70
60
50
40
30
20
10
0
20
50
80
110
140
170
Speed
Efficiency
Torque

Test Bench Measurement

Motor type: **HP 2120-50-B8 LS P50 RS**

Date: 12.10.2021

Bearing type: RS

Controller: MST 400-160SiC

Measuring Parameter

Voltage: **300.0 [V]**

Throttle setting: 100%

Calculated Motor Constants

nl: 4,051.5 [RPM] Io: 8.2 [A] kV: 13.7 [RPM/V] kn: -5.12 [RPM/A] kT: 81.11 [Ncm/A]

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency[1] [%]
299.2	20.0	4,035.7	5,984.0	4,846.6	1,146.8	80.99
299.2	22.0	4,020.7	6,582.4	5,420.1	1,287.3	82.34
299.2	24.0	4,005.9	7,180.8	5,993.8	1,428.8	83.47
299.2	26.0	3,991.3	7,779.2	6,567.5	1,571.3	84.42
299.2	28.0	3,976.8	8,377.6	7,142.1	1,715.0	85.25
299.2	30.0	3,962.6	8,976.0	7,716.6	1,859.6	85.97
299.1	32.0	3,948.6	9,571.2	8,291.4	2,005.2	86.63
299.1	34.0	3,934.8	10,169.4	8,866.5	2,151.8	87.19
299.1	36.0	3,921.1	10,767.6	9,441.7	2,299.4	87.69
299.1	38.0	3,907.6	11,365.8	10,016.9	2,447.9	88.13
299.1	40.0	3,894.3	11,964.0	10,592.5	2,597.4	88.54
299.1	42.0	3,881.2	12,562.2	11,167.7	2,747.7	88.90
299.1	44.0	3,868.3	13,160.4	11,743.1	2,898.9	89.23
299.1	46.0	3,855.5	13,758.6	12,318.3	3,051.0	89.53
299.1	48.0	3,842.9	14,356.8	12,893.4	3,203.9	89.81
299.1	50.0	3,830.5	14,955.0	13,468.3	3,357.6	90.06
299.1	52.0	3,818.2	15,553.2	14,042.8	3,512.1	90.29
299.1	54.0	3,806.1	16,151.4	14,617.3	3,667.4	90.50
299.1	56.0	3,794.2	16,749.6	15,191.4	3,823.4	90.70
299.1	58.0	3,782.4	17,347.8	15,765.3	3,980.2	90.88
299.1	60.0	3,770.7	17,946.0	16,338.0	4,137.6	91.04
299.0	62.0	3,759.3	18,538.0	16,911.4	4,295.8	91.23
299.0	64.0	3,747.9	19,136.0	17,483.4	4,454.6	91.36
299.0	66.0	3,736.7	19,734.0	18,055.3	4,614.1	91.49
299.0	68.0	3,725.7	20,332.0	18,626.8	4,774.2	91.61
299.0	70.0	3,714.8	20,930.0	19,197.8	4,935.0	91.72

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency[1] [%]
299.0	74.0	3,693.5	22,126.0	20,337.4	5,258.1	91.92
299.0	76.0	3,683.0	22,724.0	20,906.3	5,420.6	92.00
299.0	78.0	3,672.6	23,322.0	21,473.8	5,583.5	92.08
299.0	80.0	3,662.4	23,920.0	22,041.2	5,747.0	92.15
299.0	82.0	3,652.3	24,518.0	22,607.3	5,910.9	92.21
299.0	84.0	3,642.4	25,116.0	23,173.1	6,075.3	92.26
299.0	86.0	3,632.5	25,714.0	23,737.0	6,240.1	92.31
299.0	88.0	3,622.8	26,312.0	24,300.7	6,405.4	92.36
298.9	90.0	3,613.2	26,901.0	24,863.3	6,571.1	92.43
298.9	92.0	3,603.7	27,498.8	25,424.4	6,737.1	92.46
298.9	94.0	3,594.3	28,096.6	25,984.4	6,903.5	92.48
298.9	96.0	3,585.1	28,694.4	26,544.1	7,070.3	92.51
298.9	98.0	3,575.9	29,292.2	27,101.3	7,237.3	92.52
298.9	100.0	3,566.9	29,890.0	27,658.4	7,404.7	92.53
298.9	102.0	3,557.9	30,487.8	28,213.1	7,572.3	92.54
298.9	104.0	3,549.1	31,085.6	28,767.3	7,740.2	92.54
298.9	106.0	3,540.3	31,683.4	29,319.2	7,908.3	92.54
298.9	108.0	3,531.7	32,281.2	29,870.8	8,076.7	92.53
298.9	110.0	3,523.1	32,879.0	30,419.7	8,245.2	92.52
298.9	112.0	3,514.7	33,476.8	30,968.1	8,413.9	92.51
298.9	114.0	3,506.3	34,074.6	31,514.2	8,582.8	92.49
298.9	116.0	3,498.0	34,672.4	32,058.7	8,751.8	92.46
298.8	118.0	3,489.8	35,258.4	32,601.5	8,920.9	92.46
298.8	120.0	3,481.7	35,856.0	33,142.8	9,090.1	92.43
298.8	122.0	3,473.6	36,453.6	33,681.1	9,259.3	92.39
298.8	124.0	3,465.7	37,051.2	34,219.3	9,428.7	92.36
298.8	126.0	3,457.8	37,648.8	34,754.4	9,598.0	92.31
298.8	128.0	3,449.9	38,246.4	35,286.9	9,767.4	92.26
298.8	130.0	3,442.2	38,844.0	35,818.5	9,936.7	92.21
298.8	132.0	3,434.5	39,441.6	36,347.2	10,106.0	92.15
298.8	134.0	3,426.9	40,039.2	36,874.4	10,275.3	92.10
298.8	136.0	3,419.3	40,636.8	37,398.1	10,444.4	92.03
298.8	138.0	3,411.8	41,234.4	37,920.2	10,613.5	91.96
298.8	140.0	3,404.4	41,832.0	38,440.5	10,782.5	91.89
298.8	142.0	3,397.0	42,429.6	38,957.4	10,951.3	91.82
298.8	144.0	3,389.6	43,027.2	39,471.3	11,120.0	91.74
298.7	146.0	3,382.3	43,610.2	39,983.1	11,288.5	91.68
298.7	148.0	3,375.1	44,207.6	40,492.9	11,456.8	91.60
298.7	150.0	3,367.9	44,805.0	40,999.4	11,624.9	91.51

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency[1] [%]
298.7	154.0	3,353.6	45,999.8	42,003.2	11,960.3	91.31
298.7	156.0	3,346.5	46,597.2	42,500.5	12,127.6	91.21
298.7	158.0	3,339.4	47,194.6	42,994.4	12,294.6	91.10
298.7	160.0	3,332.4	47,792.0	43,486.0	12,461.3	90.99
298.7	162.0	3,325.4	48,389.4	43,973.7	12,627.6	90.87
298.7	164.0	3,318.5	48,986.8	44,459.4	12,793.6	90.76
298.7	166.0	3,311.5	49,584.2	44,939.8	12,959.2	90.63
298.7	168.0	3,304.6	50,181.6	45,417.5	13,124.3	90.51
298.7	170.0	3,297.7	50,779.0	45,891.8	13,289.1	90.38
298.7	172.0	3,290.8	51,376.4	46,362.0	13,453.4	90.24
298.6	174.0	3,284.0	51,956.4	46,829.5	13,617.2	90.13
298.6	176.0	3,277.1	52,553.6	47,291.9	13,780.6	89.99
298.6	178.0	3,270.2	53,150.8	47,749.8	13,943.4	89.84
298.6	180.0	3,263.4	53,748.0	48,205.2	14,105.7	89.69

nl = rpm with no load

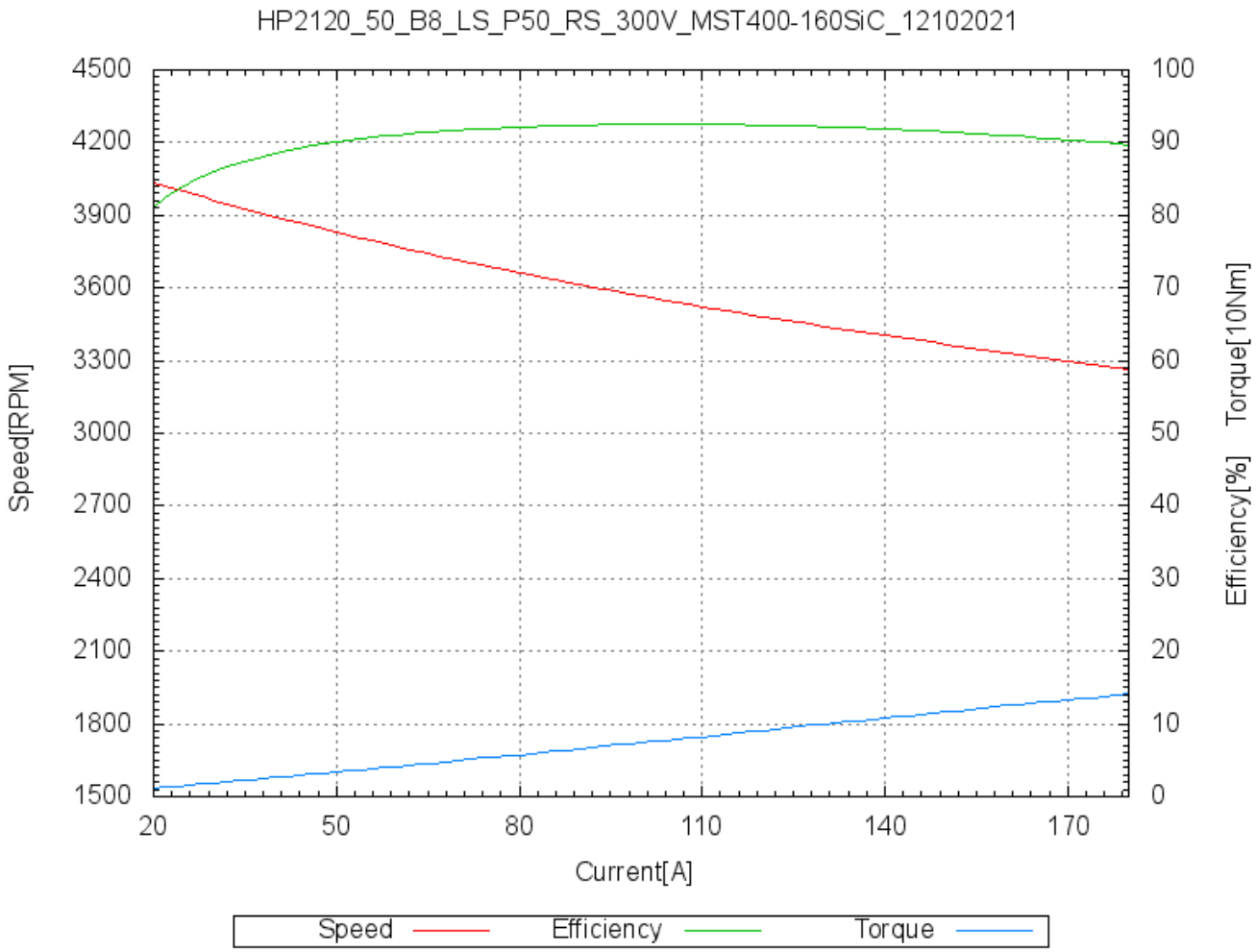
Io = current with no load

kV = specific rpm

kn = rpm drop per Amp

kT = torque constant

[1] incl. Controller


HP2120_50_B8_LS_P50_RS_300V_MST400-160SiC_12102021
Speed[RPM]
Efficiency[%] Torque[10Nm]
Current[A]
4500
4200
3900
3600
3300
3000
2700
2400
2100
1800
1500
100
90
80
70
60
50
40
30
20
10
0
20
50
80
110
140
170
Speed
Efficiency
Torque

Test Bench Measurement

Motor type: **HP 2120-50-B8 LS P50 RS**

Date: 29.04.2021

Bearing type: RS

Controller: MST 400-160SiC

Measuring Parameter

Voltage: **320.0 [V]**

Throttle setting: 100%

Calculated Motor Constants

nl: 4,242.1 [RPM] Io: 7.9 [A] kV: 13.4 [RPM/V] kn: -5.01 [RPM/A] kT: 81.09 [Ncm/A]

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency[1] [%]
320.2	10.0	4,291.5	3,202.0	2,067.3	460.0	64.56
320.2	12.0	4,276.5	3,842.4	2,666.0	595.3	69.38
320.2	14.0	4,261.7	4,482.8	3,265.9	731.8	72.85
320.2	16.0	4,247.0	5,123.2	3,866.6	869.4	75.47
320.2	18.0	4,232.5	5,763.6	4,469.1	1,008.3	77.54
320.2	20.0	4,218.2	6,404.0	5,072.4	1,148.3	79.21
320.2	22.0	4,204.1	7,044.4	5,677.1	1,289.5	80.59
320.2	24.0	4,190.2	7,684.8	6,282.3	1,431.7	81.75
320.2	26.0	4,176.4	8,325.2	6,888.7	1,575.1	82.75
320.2	28.0	4,162.8	8,965.6	7,495.8	1,719.5	83.61
320.2	30.0	4,149.4	9,606.0	8,103.9	1,865.0	84.36
320.2	32.0	4,136.2	10,246.4	8,712.6	2,011.5	85.03
320.2	34.0	4,123.1	10,886.8	9,321.9	2,159.0	85.63
320.2	36.0	4,110.2	11,527.2	9,931.9	2,307.5	86.16
320.2	38.0	4,097.4	12,167.6	10,542.5	2,457.0	86.64
320.2	40.0	4,084.8	12,808.0	11,153.0	2,607.3	87.08
320.2	42.0	4,072.4	13,448.4	11,764.3	2,758.6	87.48
320.2	44.0	4,060.1	14,088.8	12,375.9	2,910.8	87.84
320.2	46.0	4,048.0	14,729.2	12,987.6	3,063.8	88.18
320.2	48.0	4,036.0	15,369.6	13,599.6	3,217.7	88.48
320.2	50.0	4,024.2	16,010.0	14,211.7	3,372.4	88.77
320.2	52.0	4,012.5	16,650.4	14,823.4	3,527.8	89.03
320.2	54.0	4,001.0	17,290.8	15,435.8	3,684.1	89.27
320.2	56.0	3,989.6	17,931.2	16,047.7	3,841.1	89.50
320.2	58.0	3,978.3	18,571.6	16,659.3	3,998.8	89.70
320.2	60.0	3,967.2	19,212.0	17,270.8	4,157.2	89.90

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency[1] [%]
320.2	64.0	3,945.4	20,492.8	18,493.5	4,476.1	90.24
320.2	66.0	3,934.7	21,133.2	19,104.3	4,636.5	90.40
320.2	68.0	3,924.1	21,773.6	19,714.4	4,797.5	90.54
320.2	70.0	3,913.6	22,414.0	20,323.9	4,959.1	90.68
320.2	72.0	3,903.3	23,054.4	20,933.0	5,121.2	90.80
320.2	74.0	3,893.1	23,694.8	21,541.6	5,283.9	90.91
320.2	76.0	3,883.0	24,335.2	22,149.8	5,447.2	91.02
320.2	78.0	3,873.0	24,975.6	22,756.7	5,610.9	91.12
320.2	80.0	3,863.2	25,616.0	23,363.0	5,775.0	91.20
320.2	82.0	3,853.4	26,256.4	23,968.3	5,939.7	91.29
320.2	84.0	3,843.8	26,896.8	24,572.7	6,104.7	91.36
320.2	86.0	3,834.3	27,537.2	25,176.5	6,270.2	91.43
320.2	88.0	3,824.9	28,177.6	25,778.9	6,436.0	91.49
320.2	90.0	3,815.6	28,818.0	26,380.3	6,602.2	91.54
320.2	92.0	3,806.4	29,458.4	26,980.8	6,768.8	91.59
320.2	94.0	3,797.3	30,098.8	27,579.6	6,935.6	91.63
320.2	96.0	3,788.3	30,739.2	28,177.5	7,102.8	91.67
320.2	98.0	3,779.4	31,379.6	28,773.8	7,270.2	91.70
320.2	100.0	3,770.5	32,020.0	29,367.8	7,437.8	91.72
320.2	102.0	3,761.8	32,660.4	29,961.5	7,605.7	91.74
320.2	104.0	3,753.2	33,300.8	30,553.3	7,773.7	91.75
320.2	106.0	3,744.6	33,941.2	31,142.9	7,941.9	91.76
320.2	108.0	3,736.2	34,581.6	31,731.9	8,110.3	91.76
320.2	110.0	3,727.8	35,222.0	32,318.3	8,278.8	91.76
320.2	112.0	3,719.5	35,862.4	32,903.4	8,447.5	91.75
320.2	114.0	3,711.3	36,502.8	33,486.2	8,616.1	91.74
320.2	116.0	3,703.2	37,143.2	34,067.7	8,784.9	91.72
320.2	118.0	3,695.1	37,783.6	34,646.3	8,953.7	91.70
320.2	120.0	3,687.1	38,424.0	35,223.1	9,122.5	91.67
320.2	122.0	3,679.2	39,064.4	35,798.0	9,291.3	91.64
320.2	124.0	3,671.3	39,704.8	36,370.1	9,460.1	91.60
320.2	126.0	3,663.5	40,345.2	36,940.0	9,628.8	91.56
320.2	128.0	3,655.8	40,985.6	37,507.8	9,797.4	91.51
320.2	130.0	3,648.1	41,626.0	38,072.5	9,965.9	91.46
320.2	132.0	3,640.5	42,266.4	38,635.2	10,134.3	91.41
320.2	134.0	3,633.0	42,906.8	39,195.5	10,302.5	91.35
320.2	136.0	3,625.5	43,547.2	39,752.8	10,470.6	91.29
320.2	138.0	3,618.1	44,187.6	40,307.8	10,638.5	91.22
320.2	140.0	3,610.7	44,828.0	40,859.5	10,806.2	91.15

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency[1] [%]
320.2	144.0	3,596.0	46,108.8	41,953.2	11,140.8	90.99
320.2	146.0	3,588.8	46,749.2	42,496.0	11,307.6	90.90
320.2	148.0	3,581.6	47,389.6	43,035.6	11,474.2	90.81
320.2	150.0	3,574.4	48,030.0	43,571.6	11,640.5	90.72
320.2	152.0	3,567.3	48,670.4	44,104.4	11,806.3	90.62
320.2	154.0	3,560.2	49,310.8	44,633.7	11,971.8	90.51
320.2	156.0	3,553.1	49,951.2	45,159.3	12,137.0	90.41
320.2	158.0	3,546.1	50,591.6	45,681.6	12,301.6	90.29
320.2	160.0	3,539.1	51,232.0	46,200.3	12,465.9	90.18
320.2	162.0	3,532.1	51,872.4	46,714.4	12,629.6	90.06
320.2	164.0	3,525.1	52,512.8	47,224.7	12,792.9	89.93
320.2	166.0	3,518.2	53,153.2	47,732.0	12,955.7	89.80
320.2	168.0	3,511.3	53,793.6	48,234.8	13,117.9	89.67
320.2	170.0	3,504.4	54,434.0	48,733.1	13,279.5	89.53
320.2	172.0	3,497.5	55,074.4	49,227.2	13,440.6	89.38
320.2	174.0	3,490.6	55,714.8	49,716.8	13,601.1	89.23
320.2	176.0	3,483.8	56,355.2	50,202.9	13,760.9	89.08
320.2	178.0	3,476.9	56,995.6	50,683.1	13,920.1	88.92
320.2	180.0	3,470.1	57,636.0	51,159.9	14,078.6	88.76

nl = rpm with no load

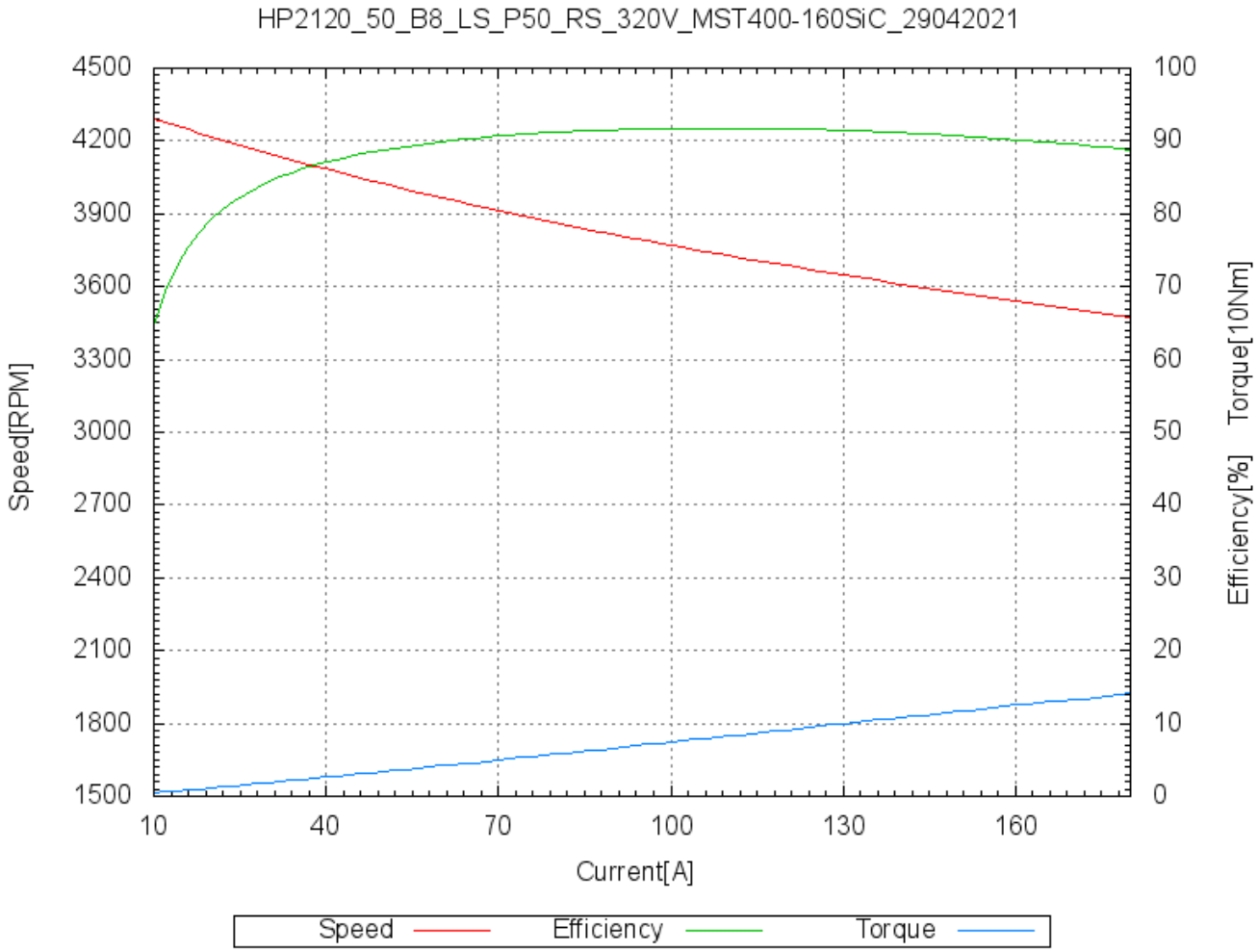
Io = current with no load

kV = specific rpm

kn = rpm drop per Amp

kT = torque constant

[1] incl. Controller


HP2120_50_B8_LS_P50_RS_320V_MST400-160SiC_29042021
Speed[RPM]
Efficiency[%] Torque[10Nm]
Current[A]
4500
4200
3900
3600
3300
3000
2700
2400
2100
1800
1500
100
90
80
70
60
50
40
30
20
10
0
10
40
70
100
130
160
Speed
Efficiency
Torque