PLETTENBERG

Test Bench Measurement

Motor type: **HP 875-50-A8 S P30**

Date: 17.02.2021

Bearing type: RS

Controller: MST 400-133

Measuring Parameter

Voltage: **130.0 [V]**

Throttle setting: 100%

Calculated Motor Constants

nl: 4,103.2 [RPM] Io: 2.9 [A] kV: 32.0 [RPM/V] kn: -20.64 [RPM/A] kT: 36.37 [Ncm/A]

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency[1] [%]
130.2	5.0	4,121.1	651.0	506.7	117.4	77.83
130.2	6.0	4,092.4	781.2	632.5	147.6	80.97
130.2	7.0	4,064.0	911.4	758.4	178.2	83.21
130.2	8.0	4,036.1	1,041.6	884.2	209.2	84.89
130.2	9.0	4,008.6	1,171.8	1,010.0	240.6	86.19
130.2	10.0	3,981.4	1,302.0	1,135.3	272.3	87.20
130.1	11.0	3,954.6	1,431.1	1,260.6	304.4	88.09
130.1	12.0	3,928.2	1,561.2	1,385.5	336.8	88.74
130.1	13.0	3,902.2	1,691.3	1,510.3	369.6	89.30
130.1	14.0	3,876.6	1,821.4	1,634.8	402.7	89.75
130.1	15.0	3,851.3	1,951.5	1,758.8	436.1	90.13
130.1	16.0	3,826.4	2,081.6	1,882.5	469.8	90.43
130.1	17.0	3,801.8	2,211.7	2,005.7	503.8	90.69
130.1	18.0	3,777.6	2,341.8	2,128.7	538.1	90.90
130.1	19.0	3,753.7	2,471.9	2,251.2	572.7	91.07
130.1	20.0	3,730.2	2,602.0	2,373.1	607.5	91.20
130.1	21.0	3,707.0	2,732.1	2,494.5	642.6	91.31
130.1	22.0	3,684.2	2,862.2	2,615.8	678.0	91.39
130.1	23.0	3,661.7	2,992.3	2,736.3	713.6	91.45
130.1	24.0	3,639.6	3,122.4	2,856.2	749.4	91.48
130.1	25.0	3,617.7	3,252.5	2,975.8	785.5	91.49
130.1	26.0	3,596.2	3,382.6	3,094.8	821.8	91.49
130.1	27.0	3,575.0	3,512.7	3,212.9	858.2	91.46
130.1	28.0	3,554.2	3,642.8	3,330.8	894.9	91.43
130.0	29.0	3,533.6	3,770.0	3,448.0	931.8	91.46
130.0	30.0	3,513.4	3,900.0	3,564.4	968.8	91.40

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency[1] [%]
130.0	32.0	3,473.8	4,160.0	3,795.3	1,043.3	91.23
130.0	33.0	3,454.5	4,290.0	3,909.8	1,080.8	91.14
130.0	34.0	3,435.4	4,420.0	4,023.9	1,118.5	91.04
130.0	35.0	3,416.7	4,550.0	4,136.8	1,156.2	90.92
130.0	36.0	3,398.2	4,680.0	4,249.3	1,194.1	90.80
130.0	37.0	3,380.1	4,810.0	4,361.2	1,232.1	90.67
130.0	38.0	3,362.2	4,940.0	4,472.2	1,270.2	90.53
130.0	39.0	3,344.6	5,070.0	4,582.3	1,308.3	90.38
130.0	40.0	3,327.2	5,200.0	4,691.9	1,346.6	90.23
130.0	41.0	3,310.2	5,330.0	4,800.7	1,384.9	90.07
130.0	42.0	3,293.4	5,460.0	4,908.7	1,423.3	89.90
130.0	43.0	3,276.8	5,590.0	5,015.8	1,461.7	89.73
130.0	44.0	3,260.5	5,720.0	5,122.3	1,500.2	89.55
130.0	45.0	3,244.5	5,850.0	5,227.9	1,538.7	89.37
130.0	46.0	3,228.7	5,980.0	5,333.0	1,577.3	89.18
130.0	47.0	3,213.2	6,110.0	5,436.9	1,615.8	88.98
129.9	48.0	3,197.9	6,235.2	5,540.3	1,654.4	88.86
129.9	49.0	3,182.9	6,365.1	5,642.6	1,692.9	88.65
129.9	50.0	3,168.1	6,495.0	5,744.1	1,731.4	88.44
129.9	51.0	3,153.5	6,624.9	5,845.1	1,770.0	88.23
129.9	52.0	3,139.2	6,754.8	5,944.9	1,808.4	88.01
129.9	53.0	3,125.0	6,884.7	6,044.0	1,846.9	87.79
129.9	54.0	3,111.2	7,014.6	6,142.1	1,885.2	87.56
129.9	55.0	3,097.5	7,144.5	6,239.6	1,923.6	87.33
129.9	56.0	3,084.0	7,274.4	6,335.7	1,961.8	87.10
129.9	57.0	3,070.8	7,404.3	6,431.5	2,000.0	86.86
129.9	58.0	3,057.7	7,534.2	6,525.7	2,038.0	86.61
129.9	59.0	3,044.9	7,664.1	6,619.6	2,076.0	86.37
129.9	60.0	3,032.2	7,794.0	6,712.3	2,113.9	86.12
129.9	61.0	3,019.8	7,923.9	6,804.1	2,151.6	85.87
129.9	62.0	3,007.5	8,053.8	6,894.8	2,189.2	85.61
129.9	63.0	2,995.5	8,183.7	6,984.9	2,226.7	85.35
129.9	64.0	2,983.6	8,313.6	7,073.7	2,264.0	85.09
129.9	65.0	2,971.9	8,443.5	7,161.7	2,301.2	84.82
129.8	66.0	2,960.4	8,566.8	7,248.7	2,338.2	84.61
129.8	67.0	2,949.0	8,696.6	7,334.4	2,375.0	84.34
129.8	68.0	2,937.8	8,826.4	7,419.5	2,411.7	84.06
129.8	69.0	2,926.8	8,956.2	7,503.3	2,448.1	83.78
129.8	70.0	2,916.0	9,086.0	7,586.4	2,484.4	83.50

Voltage [V]	Current [A]	Speed [RPM]	Input Power [W]	Output Power [W]	Torque [Ncm]	Efficiency[1] [%]
129.8	72.0	2,894.8	9,345.6	7,748.9	2,556.2	82.92
129.8	73.0	2,884.4	9,475.4	7,828.6	2,591.8	82.62
129.8	74.0	2,874.2	9,605.2	7,907.2	2,627.1	82.32
129.8	75.0	2,864.1	9,735.0	7,984.7	2,662.2	82.02

nl = rpm with no load

Io = current with no load

kV = specific rpm

kn = rpm drop per Amp

kT = torque constant

[1] incl. Controller