

HP 620/50/B12 P20

Spannung: 11 V

$n_l=783.6\text{U/min}$
 $n_s=69.2\text{U/min/V}$

$I_o=1.1\text{A}$
 $k_n=-5.76\text{U/min/A}$

$k_M=14.07\text{Ncm/A}$

Spannung [V]	Strom [A]	Drehzahl [U/min]	Pin [W]	Pout [W]	Drehmoment [Ncm]	Wirkungsgrad [%]
11.4	10.0	741.8	114.2	88.7	114.2	77.69
11.4	12.0	728.2	137.0	108.7	142.5	79.34
11.4	14.0	714.7	159.8	128.1	171.1	80.17
11.4	16.0	701.5	182.5	146.8	199.9	80.46
11.4	18.0	688.4	205.2	165.0	228.9	80.40
11.4	20.0	675.5	227.9	182.5	258.0	80.07
11.4	22.0	662.7	250.6	199.4	287.3	79.55
11.4	24.0	650.2	273.3	215.6	316.6	78.88
11.4	26.0	637.8	295.9	231.1	346.0	78.09
11.4	28.0	625.6	318.6	245.9	375.4	77.20
11.4	30.0	613.5	341.2	260.1	404.9	76.23
11.4	32.0	601.6	363.8	273.6	434.3	75.20
11.4	34.0	589.8	386.4	286.3	463.6	74.11
11.4	36.0	578.2	408.9	298.4	492.8	72.97
11.4	38.0	566.7	431.5	309.7	521.9	71.78
11.3	40.0	555.3	454.0	320.3	550.8	70.56
11.3	42.0	544.1	476.5	330.2	579.6	69.31
11.3	44.0	533.1	499.0	339.4	608.1	68.03
11.3	46.0	522.1	521.4	347.9	636.3	66.72
11.3	48.0	511.3	543.9	355.6	664.3	65.39
11.3	50.0	500.5	566.3	362.7	691.9	64.04
11.3	52.0	489.9	588.7	369.0	719.2	62.68
11.3	54.0	479.4	611.1	374.6	746.1	61.30
11.3	56.0	469.0	633.5	379.5	772.6	59.90
11.3	58.0	458.7	655.8	383.6	798.6	58.50
11.3	60.0	448.5	678.2	387.1	824.2	57.08
11.3	62.0	438.4	700.5	389.9	849.2	55.66
11.3	64.0	428.4	722.8	391.9	873.7	54.23
11.3	66.0	418.4	745.0	393.3	897.6	52.79
11.3	68.0	408.6	767.3	394.0	920.9	51.35
11.3	70.0	398.8	789.5	394.1	943.6	49.91
11.3	72.0	389.1	811.8	393.4	965.6	48.46
11.3	74.0	379.4	834.0	392.1	986.9	47.02

11.3	76.0	369.8	856.1	390.2	1007.5	45.57
11.3	78.0	360.3	878.3	387.6	1027.3	44.13
11.3	80.0	350.8	900.4	384.3	1046.3	42.68
11.3	82.0	341.3	922.6	380.5	1064.5	41.24
11.2	84.0	331.9	944.7	376.0	1081.8	39.81
11.2	86.0	322.6	966.8	371.0	1098.2	38.37
11.2	88.0	313.3	988.8	365.4	1113.7	36.95
11.2	90.0	304.0	1010.9	359.2	1128.2	35.53
11.2	92.0	294.7	1032.9	352.4	1141.8	34.12
11.2	94.0	285.5	1054.9	345.1	1154.3	32.71
11.2	96.0	276.3	1076.9	337.3	1165.8	31.32
11.2	98.0	267.1	1098.9	329.0	1176.2	29.94
11.2	100.0	257.9	1120.9	320.2	1185.5	28.56

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Spannung: 15 V

nl=1039.2U/min
ns=68.7U/min/V

Io=1.1A
kn=-6.22U/min/A

kM=13.71Ncm/A

Spannung [V]	Strom [A]	Drehzahl [U/min]	Pin [W]	Pout [W]	Drehmoment [Ncm]	Wirkungsgrad [%]
15.1	10.0	990.5	151.0	120.8	116.5	79.98
15.1	12.0	975.4	181.2	147.9	144.8	81.61
15.1	14.0	960.6	211.3	174.3	173.3	82.50
15.1	16.0	946.0	241.4	200.1	202.0	82.91
15.1	18.0	931.5	271.5	225.3	231.0	83.01
15.1	20.0	917.3	301.5	249.9	260.1	82.87
15.1	22.0	903.2	331.6	273.7	289.4	82.56
15.1	24.0	889.3	361.6	296.9	318.8	82.12
15.1	26.0	875.5	391.5	319.4	348.3	81.57
15.1	28.0	862.0	421.5	341.1	377.9	80.93
15.0	30.0	848.5	451.5	362.2	407.6	80.23
15.0	32.0	835.2	481.4	382.5	437.3	79.46
15.0	34.0	822.1	511.3	402.0	467.0	78.63
15.0	36.0	809.1	541.2	420.8	496.7	77.76
15.0	38.0	796.2	571.0	438.8	526.3	76.85
15.0	40.0	783.4	600.8	456.1	555.9	75.91
15.0	42.0	770.8	630.7	472.6	585.4	74.93
15.0	44.0	758.3	660.4	488.2	614.8	73.92
15.0	46.0	745.9	690.2	503.1	644.1	72.89
15.0	48.0	733.5	720.0	517.1	673.2	71.83
15.0	50.0	721.3	749.7	530.4	702.1	70.74
15.0	52.0	709.2	779.4	542.8	730.9	69.64
15.0	54.0	697.1	809.1	554.3	759.4	68.52
15.0	56.0	685.1	838.7	565.1	787.6	67.37
15.0	58.0	673.2	868.4	575.0	815.6	66.21
15.0	60.0	661.3	898.0	584.0	843.3	65.04
15.0	62.0	649.5	927.6	592.2	870.7	63.85
15.0	64.0	637.8	957.1	599.6	897.7	62.64
14.9	66.0	626.1	986.7	606.0	924.4	61.42
14.9	68.0	614.4	1016.2	611.7	950.6	60.19
14.9	70.0	602.8	1045.7	616.4	976.5	58.95
14.9	72.0	591.2	1075.2	620.3	1001.9	57.69
14.9	74.0	579.6	1104.6	623.3	1026.8	56.42

14.9	76.0	568.1	1134.1	625.4	1051.3	55.15
14.9	78.0	556.5	1163.5	626.6	1075.2	53.86
14.9	80.0	545.0	1192.9	627.0	1098.7	52.56
14.9	82.0	533.4	1222.3	626.5	1121.5	51.26
14.9	84.0	521.9	1251.6	625.1	1143.8	49.94
14.9	86.0	510.3	1280.9	622.8	1165.5	48.62
14.9	88.0	498.7	1310.2	619.7	1186.5	47.29
14.9	90.0	487.1	1339.5	615.6	1206.9	45.96
14.9	92.0	475.5	1368.8	610.7	1226.7	44.62
14.9	94.0	463.8	1398.0	605.0	1245.7	43.27
14.9	96.0	452.0	1427.3	598.3	1264.0	41.92
14.9	98.0	440.3	1456.4	590.9	1281.6	40.57
14.9	100.0	428.4	1485.6	582.5	1298.3	39.21

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Spannung: 20 V

nl=1378.7U/min
ns=68.9U/min/VIo=1.2A
kn=-7.00U/min/A

kM=13.83Ncm/A

Spannung [V]	Strom [A]	Drehzahl [U/min]	Pin [W]	Pout [W]	Drehmoment [Ncm]	Wirkungsgrad [%]
20.0	10.0	1326.0	199.8	165.9	119.5	83.04
20.0	12.0	1308.4	239.7	202.7	148.0	84.56
20.0	14.0	1291.2	279.6	238.8	176.6	85.41
20.0	16.0	1274.2	319.5	274.2	205.5	85.84
20.0	18.0	1257.5	359.3	308.9	234.6	85.97
20.0	20.0	1241.0	399.2	342.9	263.9	85.91
20.0	22.0	1224.8	439.0	376.1	293.3	85.69
19.9	24.0	1208.9	478.7	408.6	322.8	85.35
19.9	26.0	1193.2	518.5	440.3	352.4	84.92
19.9	28.0	1177.6	558.2	471.3	382.1	84.42
19.9	30.0	1162.4	598.0	501.4	411.9	83.85
19.9	32.0	1147.3	637.7	530.7	441.7	83.23
19.9	34.0	1132.4	677.3	559.2	471.6	82.56
19.9	36.0	1117.7	717.0	586.9	501.4	81.85
19.9	38.0	1103.1	756.6	613.7	531.2	81.11
19.9	40.0	1088.8	796.2	639.6	561.0	80.33
19.9	42.0	1074.5	835.8	664.7	590.7	79.53
19.9	44.0	1060.5	875.4	688.9	620.4	78.70
19.9	46.0	1046.6	915.0	712.2	649.9	77.84
19.9	48.0	1032.8	954.5	734.6	679.3	76.96
19.9	50.0	1019.1	994.0	756.1	708.5	76.06
19.9	52.0	1005.5	1033.5	776.6	737.6	75.15
19.9	54.0	992.1	1073.0	796.2	766.4	74.21
19.9	56.0	978.7	1112.4	814.9	795.1	73.25
19.9	58.0	965.4	1151.9	832.5	823.5	72.28
19.9	60.0	952.2	1191.3	849.2	851.6	71.29
19.8	62.0	939.1	1230.7	864.9	879.5	70.28
19.8	64.0	926.0	1270.0	879.6	907.1	69.26
19.8	66.0	913.0	1309.4	893.3	934.3	68.22
19.8	68.0	900.0	1348.7	905.9	961.2	67.17
19.8	70.0	887.0	1388.0	917.5	987.8	66.10
19.8	72.0	874.1	1427.3	928.1	1013.9	65.02
19.8	74.0	861.1	1466.6	937.5	1039.7	63.93

19.8	76.0	848.2	1505.8	945.9	1065.0	62.82
19.8	78.0	835.2	1545.0	953.2	1089.9	61.70
19.8	80.0	822.3	1584.3	959.4	1114.2	60.56
19.8	82.0	809.3	1623.4	964.5	1138.1	59.41
19.8	84.0	796.2	1662.6	968.5	1161.5	58.25
19.8	86.0	783.2	1701.7	971.3	1184.4	57.08
19.8	88.0	770.0	1740.9	973.0	1206.7	55.89
19.8	90.0	756.9	1780.0	973.6	1228.4	54.70
19.8	92.0	743.6	1819.0	972.9	1249.5	53.49
19.8	94.0	730.3	1858.1	971.1	1269.9	52.27
19.8	96.0	716.8	1897.1	968.2	1289.8	51.03
19.8	98.0	703.3	1936.2	964.0	1308.9	49.79
19.8	100.0	689.6	1975.2	958.7	1327.4	48.54

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Spannung: 25 V

$n_l=1719.2\text{U/min}$
 $n_s=68.9\text{U/min/V}$

$I_o=1.3\text{A}$
 $k_n=-7.79\text{U/min/A}$

$k_M=14.09\text{Ncm/A}$

Spannung [V]	Strom [A]	Drehzahl [U/min]	Pin [W]	Pout [W]	Drehmoment [Ncm]	Wirkungsgrad [%]
25.0	10.0	1667.1	249.8	201.6	115.5	80.68
25.0	12.0	1647.1	299.8	248.5	144.1	82.91
25.0	14.0	1627.5	349.6	294.7	172.9	84.30
25.0	16.0	1608.3	399.5	340.2	202.0	85.17
25.0	18.0	1589.4	449.3	385.0	231.3	85.68
25.0	20.0	1570.8	499.2	428.9	260.8	85.93
25.0	22.0	1552.5	549.0	472.1	290.4	86.00
24.9	24.0	1534.6	598.7	514.5	320.2	85.93
24.9	26.0	1516.9	648.5	556.0	350.0	85.75
24.9	28.0	1499.5	698.2	596.8	380.0	85.47
24.9	30.0	1482.4	747.9	636.6	410.1	85.12
24.9	32.0	1465.6	797.6	675.6	440.2	84.70
24.9	34.0	1448.9	847.3	713.7	470.4	84.23
24.9	36.0	1432.6	896.9	750.9	500.5	83.72
24.9	38.0	1416.4	946.5	787.1	530.7	83.16
24.9	40.0	1400.5	996.1	822.4	560.8	82.56
24.9	42.0	1384.7	1045.7	856.8	590.9	81.93
24.9	44.0	1369.1	1095.3	890.2	620.9	81.28
24.9	46.0	1353.7	1144.8	922.6	650.8	80.59
24.9	48.0	1338.5	1194.3	954.0	680.6	79.88
24.9	50.0	1323.3	1243.8	984.3	710.3	79.14
24.9	52.0	1308.4	1293.3	1013.7	739.8	78.38
24.9	54.0	1293.5	1342.8	1041.9	769.2	77.59
24.9	56.0	1278.8	1392.2	1069.1	798.3	76.79
24.9	58.0	1264.1	1441.6	1095.1	827.3	75.97
24.8	60.0	1249.6	1491.0	1120.1	856.0	75.12
24.8	62.0	1235.1	1540.3	1143.9	884.4	74.26
24.8	64.0	1220.6	1589.7	1166.5	912.6	73.38
24.8	66.0	1206.2	1639.0	1187.9	940.5	72.48
24.8	68.0	1191.9	1688.3	1208.2	968.0	71.56
24.8	70.0	1177.5	1737.6	1227.2	995.2	70.63
24.8	72.0	1163.2	1786.8	1244.9	1022.0	69.67
24.8	74.0	1148.9	1836.1	1261.4	1048.5	68.70

24.8	76.0	1134.5	1885.3	1276.6	1074.5	67.71
24.8	78.0	1120.1	1934.5	1290.5	1100.2	66.71
24.8	80.0	1105.7	1983.6	1303.0	1125.3	65.69
24.8	82.0	1091.2	2032.8	1314.2	1150.1	64.65
24.8	84.0	1076.7	2081.9	1324.0	1174.3	63.60
24.8	86.0	1062.1	2131.0	1332.4	1198.0	62.52
24.8	88.0	1047.4	2180.1	1339.4	1221.2	61.44
24.8	90.0	1032.6	2229.2	1344.9	1243.8	60.33
24.8	92.0	1017.6	2278.2	1349.0	1265.9	59.21
24.8	94.0	1002.6	2327.2	1351.6	1287.3	58.08
24.8	96.0	987.4	2376.2	1352.7	1308.2	56.92
24.7	98.0	972.0	2425.2	1352.2	1328.4	55.76
24.7	100.0	956.5	2474.2	1350.2	1348.0	54.57

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Spannung: 30 V

$n_l=2076.0\text{U/min}$
 $n_s=68.8\text{U/min/V}$

$I_o=1.4\text{A}$
 $k_n=-8.47\text{U/min/A}$

$k_M=14.31\text{Ncm/A}$

Spannung [V]	Strom [A]	Drehzahl [U/min]	Pin [W]	Pout [W]	Drehmoment [Ncm]	Wirkungsgrad [%]
30.2	10.0	2018.4	302.1	258.1	122.1	85.45
30.2	12.0	1996.7	362.5	314.6	150.5	86.81
30.2	14.0	1975.4	422.8	370.6	179.2	87.65
30.2	16.0	1954.4	483.1	426.0	208.1	88.17
30.2	18.0	1933.9	543.4	480.7	237.4	88.46
30.2	20.0	1913.6	603.7	534.8	266.9	88.59
30.2	22.0	1893.7	663.9	588.2	296.6	88.59
30.2	24.0	1874.1	724.1	640.8	326.5	88.49
30.2	26.0	1854.9	784.4	692.7	356.6	88.31
30.2	28.0	1835.9	844.5	743.8	386.9	88.07
30.2	30.0	1817.3	904.7	794.0	417.2	87.76
30.2	32.0	1798.9	964.8	843.4	447.7	87.41
30.1	34.0	1780.7	1025.0	891.9	478.3	87.01
30.1	36.0	1762.9	1085.1	939.4	508.9	86.58
30.1	38.0	1745.2	1145.2	986.0	539.5	86.11
30.1	40.0	1727.8	1205.2	1031.7	570.2	85.60
30.1	42.0	1710.6	1265.2	1076.3	600.8	85.06
30.1	44.0	1693.6	1325.3	1119.8	631.4	84.50
30.1	46.0	1676.8	1385.3	1162.3	661.9	83.91
30.1	48.0	1660.1	1445.2	1203.7	692.4	83.29
30.1	50.0	1643.7	1505.2	1243.9	722.7	82.64
30.1	52.0	1627.3	1565.1	1283.0	752.9	81.97
30.1	54.0	1611.1	1625.0	1320.8	782.9	81.28
30.1	56.0	1595.1	1684.9	1357.5	812.7	80.57
30.1	58.0	1579.1	1744.8	1392.9	842.3	79.83
30.1	60.0	1563.2	1804.6	1426.9	871.7	79.07
30.1	62.0	1547.5	1864.4	1459.7	900.8	78.29
30.1	64.0	1531.7	1924.2	1491.1	929.6	77.49
30.1	66.0	1516.1	1984.0	1521.2	958.1	76.67
30.1	68.0	1500.5	2043.8	1549.8	986.3	75.83
30.1	70.0	1484.9	2103.5	1577.0	1014.1	74.97
30.0	72.0	1469.4	2163.2	1602.7	1041.6	74.09
30.0	74.0	1453.9	2222.9	1626.9	1068.6	73.19

30.0	76.0	1438.3	2282.6	1649.6	1095.2	72.27
30.0	78.0	1422.8	2342.3	1670.7	1121.4	71.33
30.0	80.0	1407.2	2401.9	1690.2	1147.0	70.37
30.0	82.0	1391.6	2461.5	1708.1	1172.2	69.39
30.0	84.0	1375.9	2521.1	1724.4	1196.8	68.40
30.0	86.0	1360.1	2580.7	1738.9	1220.9	67.38
30.0	88.0	1344.3	2640.2	1751.8	1244.4	66.35
30.0	90.0	1328.4	2699.7	1762.9	1267.3	65.30
30.0	92.0	1312.4	2759.2	1772.2	1289.5	64.23
30.0	94.0	1296.2	2818.7	1779.8	1311.2	63.14
30.0	96.0	1279.9	2878.2	1785.5	1332.1	62.04
30.0	98.0	1263.5	2937.6	1789.4	1352.3	60.91
30.0	100.0	1247.0	2997.0	1791.4	1371.9	59.77

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Spannung: 35 V

$n_l=2415.3\text{U/min}$
 $n_s=69.0\text{U/min/V}$

$I_o=1.5\text{A}$
 $k_n=-9.27\text{U/min/A}$

$k_M=14.36\text{Ncm/A}$

Spannung [V]	Strom [A]	Drehzahl [U/min]	Pin [W]	Pout [W]	Drehmoment [Ncm]	Wirkungsgrad [%]
35.1	10.0	2356.7	351.0	298.8	121.1	85.14
35.1	12.0	2332.4	421.1	364.3	149.2	86.51
35.1	14.0	2308.6	491.2	429.3	177.6	87.40
35.1	16.0	2285.2	561.3	493.8	206.4	87.98
35.1	18.0	2262.3	631.4	557.8	235.4	88.34
35.1	20.0	2239.8	701.4	621.1	264.8	88.54
35.1	22.0	2217.7	771.4	683.7	294.4	88.63
35.1	24.0	2196.0	841.4	745.6	324.2	88.61
35.1	26.0	2174.6	911.4	806.8	354.3	88.52
35.0	28.0	2153.7	981.4	867.2	384.5	88.37
35.0	30.0	2133.0	1051.3	926.8	414.9	88.15
35.0	32.0	2112.7	1121.2	985.4	445.4	87.89
35.0	34.0	2092.7	1191.1	1043.2	476.0	87.58
35.0	36.0	2073.0	1261.0	1100.0	506.7	87.23
35.0	38.0	2053.6	1330.8	1155.8	537.5	86.85
35.0	40.0	2034.4	1400.6	1210.5	568.2	86.43
35.0	42.0	2015.5	1470.4	1264.2	599.0	85.98
35.0	44.0	1996.8	1540.2	1316.8	629.7	85.49
35.0	46.0	1978.4	1609.9	1368.2	660.4	84.98
35.0	48.0	1960.2	1679.7	1418.4	691.0	84.45
35.0	50.0	1942.1	1749.4	1467.4	721.5	83.88
35.0	52.0	1924.3	1819.1	1515.1	751.9	83.29
35.0	54.0	1906.6	1888.7	1561.5	782.1	82.67
35.0	56.0	1889.1	1958.4	1606.5	812.1	82.03
35.0	58.0	1871.7	2028.0	1650.2	841.9	81.37
35.0	60.0	1854.4	2097.6	1692.4	871.5	80.68
35.0	62.0	1837.2	2167.1	1733.2	900.8	79.97
34.9	64.0	1820.1	2236.7	1772.4	929.9	79.24
34.9	66.0	1803.1	2306.2	1810.1	958.6	78.49
34.9	68.0	1786.2	2375.7	1846.2	987.0	77.71
34.9	70.0	1769.3	2445.2	1880.7	1015.1	76.91
34.9	72.0	1752.4	2514.7	1913.5	1042.7	76.09
34.9	74.0	1735.6	2584.1	1944.6	1069.9	75.25

34.9	76.0	1718.7	2653.5	1973.9	1096.7	74.39
34.9	78.0	1701.9	2722.9	2001.5	1123.0	73.51
34.9	80.0	1685.0	2792.3	2027.2	1148.9	72.60
34.9	82.0	1668.1	2861.6	2051.1	1174.2	71.68
34.9	84.0	1651.1	2931.0	2073.0	1199.0	70.73
34.9	86.0	1634.1	3000.3	2093.1	1223.2	69.76
34.9	88.0	1616.9	3069.5	2111.1	1246.8	68.78
34.9	90.0	1599.7	3138.8	2127.1	1269.8	67.77
34.9	92.0	1582.3	3208.0	2141.0	1292.1	66.74
34.9	94.0	1564.9	3277.2	2152.9	1313.8	65.69
34.9	96.0	1547.2	3346.4	2162.6	1334.7	64.62
34.9	98.0	1529.5	3415.6	2170.2	1355.0	63.54
34.8	100.0	1511.5	3484.8	2175.6	1374.5	62.43

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Spannung: 40 V

$n_l=2759.2\text{U/min}$
 $n_s=69.2\text{U/min/V}$

$I_o=1.5\text{A}$
 $k_n=-10.11\text{U/min/A}$

$k_M=14.36\text{Ncm/A}$

Spannung [V]	Strom [A]	Drehzahl [U/min]	Pin [W]	Pout [W]	Drehmoment [Ncm]	Wirkungsgrad [%]
40.0	10.0	2702.9	400.4	325.8	115.1	81.38
40.0	12.0	2675.7	480.4	401.3	143.2	83.54
40.0	14.0	2649.1	560.4	476.3	171.7	85.00
40.0	16.0	2623.1	640.3	550.7	200.5	86.01
40.0	18.0	2597.5	720.3	624.6	229.6	86.71
40.0	20.0	2572.5	800.2	697.7	259.0	87.19
40.0	22.0	2548.0	880.1	770.1	288.6	87.51
40.0	24.0	2523.9	959.9	841.8	318.5	87.69
40.0	26.0	2500.3	1039.8	912.6	348.6	87.77
40.0	28.0	2477.1	1119.6	982.6	378.8	87.77
40.0	30.0	2454.3	1199.4	1051.7	409.2	87.69
40.0	32.0	2431.9	1279.2	1119.9	439.7	87.55
40.0	34.0	2409.9	1358.9	1187.0	470.4	87.35
40.0	36.0	2388.3	1438.7	1253.1	501.1	87.10
40.0	38.0	2367.0	1518.4	1318.2	531.8	86.81
40.0	40.0	2346.0	1598.1	1382.1	562.6	86.48
39.9	42.0	2325.3	1677.7	1444.8	593.3	86.12
39.9	44.0	2305.0	1757.4	1506.3	624.1	85.72
39.9	46.0	2284.9	1837.0	1566.6	654.7	85.28
39.9	48.0	2265.0	1916.6	1625.6	685.3	84.82
39.9	50.0	2245.4	1996.2	1683.2	715.8	84.32
39.9	52.0	2226.1	2075.7	1739.5	746.2	83.80
39.9	54.0	2206.9	2155.2	1794.3	776.4	83.25
39.9	56.0	2187.9	2234.7	1847.6	806.4	82.68
39.9	58.0	2169.1	2314.2	1899.4	836.2	82.08
39.9	60.0	2150.4	2393.7	1949.7	865.8	81.45
39.9	62.0	2131.8	2473.1	1998.3	895.1	80.80
39.9	64.0	2113.4	2552.5	2045.3	924.1	80.13
39.9	66.0	2095.0	2631.9	2090.5	952.9	79.43
39.9	68.0	2076.8	2711.3	2134.0	981.2	78.71
39.9	70.0	2058.6	2790.6	2175.7	1009.3	77.96
39.9	72.0	2040.4	2869.9	2215.5	1036.9	77.20
39.9	74.0	2022.3	2949.2	2253.4	1064.1	76.41

39.8	76.0	2004.1	3028.5	2289.4	1090.9	75.59
39.8	78.0	1986.0	3107.8	2323.4	1117.2	74.76
39.8	80.0	1967.8	3187.0	2355.3	1143.0	73.90
39.8	82.0	1949.6	3266.2	2385.1	1168.3	73.02
39.8	84.0	1931.3	3345.4	2412.8	1193.0	72.12
39.8	86.0	1912.9	3424.5	2438.3	1217.2	71.20
39.8	88.0	1894.5	3503.7	2461.5	1240.8	70.26
39.8	90.0	1875.9	3582.8	2482.5	1263.7	69.29
39.8	92.0	1857.1	3661.9	2501.1	1286.1	68.30
39.8	94.0	1838.3	3741.0	2517.3	1307.7	67.29
39.8	96.0	1819.2	3820.0	2531.2	1328.6	66.26
39.8	98.0	1800.0	3899.0	2542.5	1348.9	65.21
39.8	100.0	1780.5	3978.0	2551.3	1368.3	64.14

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Spannung: 45 V

$n_l=3102.2\text{U/min}$
 $n_s=69.0\text{U/min/V}$

$I_o=1.6\text{A}$
 $k_n=-11.68\text{U/min/A}$

$k_M=14.44\text{Ncm/A}$

Spannung [V]	Strom [A]	Drehzahl [U/min]	Pin [W]	Pout [W]	Drehmoment [Ncm]	Wirkungsgrad [%]
45.1	10.0	3043.6	451.2	362.6	113.8	80.36
45.1	12.0	3015.1	541.3	447.5	141.7	82.67
45.1	14.0	2987.2	631.5	532.1	170.1	84.27
45.1	16.0	2959.9	721.6	616.3	198.8	85.41
45.1	18.0	2933.0	811.7	700.0	227.9	86.25
45.1	20.0	2906.7	901.8	783.2	257.3	86.85
45.1	22.0	2880.9	991.8	865.8	287.0	87.29
45.1	24.0	2855.6	1081.9	947.6	316.9	87.59
45.1	26.0	2830.7	1171.9	1028.7	347.0	87.79
45.1	28.0	2806.3	1261.9	1109.1	377.4	87.89
45.1	30.0	2782.3	1351.8	1188.5	407.9	87.92
45.1	32.0	2758.7	1441.8	1267.0	438.6	87.88
45.1	34.0	2735.6	1531.7	1344.6	469.4	87.78
45.0	36.0	2712.7	1621.6	1421.1	500.2	87.63
45.0	38.0	2690.3	1711.5	1496.4	531.2	87.43
45.0	40.0	2668.1	1801.4	1570.7	562.2	87.19
45.0	42.0	2646.3	1891.2	1643.7	593.1	86.91
45.0	44.0	2624.8	1981.1	1715.5	624.1	86.59
45.0	46.0	2603.6	2070.9	1785.9	655.0	86.24
45.0	48.0	2582.6	2160.6	1854.9	685.9	85.85
45.0	50.0	2561.9	2250.4	1922.5	716.6	85.43
45.0	52.0	2541.4	2340.1	1988.6	747.2	84.98
45.0	54.0	2521.1	2429.8	2053.1	777.7	84.50
45.0	56.0	2501.0	2519.5	2116.0	808.0	83.99
45.0	58.0	2481.0	2609.2	2177.3	838.0	83.45
45.0	60.0	2461.3	2698.9	2236.8	867.9	82.88
45.0	62.0	2441.6	2788.5	2294.6	897.4	82.29
45.0	64.0	2422.1	2878.1	2350.4	926.7	81.67
45.0	66.0	2402.6	2967.7	2404.4	955.6	81.02
45.0	68.0	2383.3	3057.3	2456.4	984.2	80.35
45.0	70.0	2364.0	3146.8	2506.4	1012.5	79.65
44.9	72.0	2344.8	3236.3	2554.4	1040.3	78.93
44.9	74.0	2325.5	3325.8	2600.1	1067.7	78.18

44.9	76.0	2306.3	3415.3	2643.7	1094.6	77.41
44.9	78.0	2287.1	3504.8	2685.0	1121.1	76.61
44.9	80.0	2267.8	3594.2	2724.1	1147.0	75.79
44.9	82.0	2248.5	3683.6	2760.7	1172.4	74.95
44.9	84.0	2229.2	3773.0	2794.9	1197.3	74.08
44.9	86.0	2209.7	3862.4	2826.6	1221.5	73.18
44.9	88.0	2190.2	3951.7	2855.8	1245.1	72.27
44.9	90.0	2170.5	4041.0	2882.3	1268.1	71.33
44.9	92.0	2150.7	4130.4	2906.2	1290.4	70.36
44.9	94.0	2130.7	4219.6	2927.4	1312.0	69.38
44.9	96.0	2110.6	4308.9	2945.9	1332.9	68.37
44.9	98.0	2090.2	4398.2	2961.5	1353.0	67.33
44.9	100.0	2069.7	4487.4	2974.2	1372.3	66.28

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Spannung: 50 V

$n_l=3449.5\text{U/min}$
 $n_s=69.2\text{U/min/V}$

$I_o=1.6\text{A}$
 $k_n=-11.46\text{U/min/A}$

$k_M=14.43\text{Ncm/A}$

Spannung [V]	Strom [A]	Drehzahl [U/min]	Pin [W]	Pout [W]	Drehmoment [Ncm]	Wirkungsgrad [%]
50.1	10.0	3390.8	500.8	394.1	111.0	78.71
50.1	12.0	3359.9	600.9	488.6	138.9	81.31
50.1	14.0	3329.7	700.9	582.7	167.1	83.13
50.1	16.0	3300.1	800.9	676.5	195.7	84.46
50.1	18.0	3271.1	901.0	769.8	224.7	85.45
50.0	20.0	3242.6	1000.9	862.7	254.0	86.18
50.0	22.0	3214.7	1100.9	954.9	283.6	86.74
50.0	24.0	3187.3	1200.8	1046.5	313.5	87.14
50.0	26.0	3160.5	1300.8	1137.3	343.6	87.43
50.0	28.0	3134.1	1400.6	1227.3	373.9	87.62
50.0	30.0	3108.3	1500.5	1316.4	404.4	87.73
50.0	32.0	3082.8	1600.3	1404.6	435.1	87.77
50.0	34.0	3057.8	1700.2	1491.7	465.9	87.74
50.0	36.0	3033.2	1800.0	1577.8	496.7	87.66
50.0	38.0	3009.1	1899.7	1662.7	527.7	87.52
50.0	40.0	2985.2	1999.5	1746.4	558.6	87.34
50.0	42.0	2961.8	2099.2	1828.8	589.6	87.12
50.0	44.0	2938.7	2198.9	1909.8	620.6	86.85
50.0	46.0	2915.8	2298.6	1989.5	651.5	86.55
50.0	48.0	2893.3	2398.2	2067.6	682.4	86.21
50.0	50.0	2871.1	2497.8	2144.2	713.2	85.84
50.0	52.0	2849.1	2597.4	2219.1	743.8	85.44
49.9	54.0	2827.3	2697.0	2292.4	774.3	85.00
49.9	56.0	2805.8	2796.6	2363.9	804.6	84.53
49.9	58.0	2784.4	2896.1	2433.7	834.6	84.03
49.9	60.0	2763.3	2995.6	2501.5	864.5	83.51
49.9	62.0	2742.2	3095.1	2567.4	894.0	82.95
49.9	64.0	2721.3	3194.5	2631.2	923.3	82.37
49.9	66.0	2700.6	3294.0	2693.0	952.2	81.76
49.9	68.0	2679.9	3393.4	2752.6	980.8	81.12
49.9	70.0	2659.3	3492.7	2810.0	1009.0	80.45
49.9	72.0	2638.7	3592.1	2865.1	1036.8	79.76
49.9	74.0	2618.2	3691.4	2917.8	1064.2	79.04

49.9	76.0	2597.7	3790.8	2968.2	1091.1	78.30
49.9	78.0	2577.2	3890.0	3016.0	1117.5	77.53
49.9	80.0	2556.7	3989.3	3061.2	1143.4	76.74
49.9	82.0	2536.1	4088.5	3103.9	1168.7	75.92
49.9	84.0	2515.4	4187.8	3143.8	1193.5	75.07
49.8	86.0	2494.7	4286.9	3180.9	1217.6	74.20
49.8	88.0	2473.9	4386.1	3215.3	1241.1	73.31
49.8	90.0	2452.9	4485.3	3246.7	1264.0	72.39
49.8	92.0	2431.8	4584.4	3275.2	1286.1	71.44
49.8	94.0	2410.5	4683.5	3300.7	1307.6	70.47
49.8	96.0	2389.0	4782.5	3323.0	1328.3	69.48
49.8	98.0	2367.4	4881.6	3342.3	1348.2	68.47
49.8	100.0	2345.5	4980.6	3358.3	1367.3	67.43

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Spannung: 55 V

$n_l=3802.0\text{U/min}$
 $n_s=69.5\text{U/min/V}$

$I_o=1.7\text{A}$
 $k_n=-12.33\text{U/min/A}$

$k_M=14.36\text{Ncm/A}$

Spannung [V]	Strom [A]	Drehzahl [U/min]	Pin [W]	Pout [W]	Drehmoment [Ncm]	Wirkungsgrad [%]
55.0	10.0	3740.4	550.1	422.5	107.9	76.81
55.0	12.0	3706.7	660.1	526.2	135.6	79.71
55.0	14.0	3673.7	770.0	629.6	163.6	81.76
55.0	16.0	3641.5	879.9	732.6	192.1	83.26
55.0	18.0	3609.9	989.8	835.3	221.0	84.39
55.0	20.0	3579.0	1099.7	937.5	250.1	85.25
55.0	22.0	3548.7	1209.5	1039.1	279.6	85.91
55.0	24.0	3519.1	1319.3	1140.0	309.4	86.41
55.0	26.0	3490.0	1429.1	1240.2	339.3	86.78
55.0	28.0	3461.5	1538.9	1339.6	369.5	87.05
55.0	30.0	3433.6	1648.7	1438.0	399.9	87.22
54.9	32.0	3406.2	1758.4	1535.5	430.5	87.32
54.9	34.0	3379.3	1868.1	1631.9	461.1	87.35
54.9	36.0	3352.8	1977.8	1727.1	491.9	87.32
54.9	38.0	3326.9	2087.5	1821.2	522.7	87.24
54.9	40.0	3301.3	2197.1	1913.9	553.6	87.11
54.9	42.0	3276.2	2306.8	2005.3	584.5	86.93
54.9	44.0	3251.4	2416.4	2095.2	615.4	86.71
54.9	46.0	3227.0	2526.0	2183.7	646.2	86.45
54.9	48.0	3202.9	2635.5	2270.5	676.9	86.15
54.9	50.0	3179.2	2745.1	2355.7	707.6	85.82
54.9	52.0	3155.7	2854.6	2439.1	738.1	85.45
54.9	54.0	3132.5	2964.1	2520.7	768.4	85.04
54.9	56.0	3109.5	3073.6	2600.4	798.6	84.61
54.9	58.0	3086.8	3183.0	2678.2	828.5	84.14
54.9	60.0	3064.2	3292.4	2753.8	858.2	83.64
54.9	62.0	3041.9	3401.9	2827.4	887.6	83.11
54.9	64.0	3019.6	3511.2	2898.7	916.7	82.56
54.9	66.0	2997.5	3620.6	2967.8	945.5	81.97
54.9	68.0	2975.6	3730.0	3034.5	973.8	81.35
54.8	70.0	2953.6	3839.3	3098.7	1001.8	80.71
54.8	72.0	2931.8	3948.6	3160.5	1029.4	80.04
54.8	74.0	2910.0	4057.9	3219.6	1056.5	79.34

54.8	76.0	2888.1	4167.1	3276.0	1083.2	78.62
54.8	78.0	2866.3	4276.4	3329.6	1109.3	77.86
54.8	80.0	2844.4	4385.6	3380.5	1134.9	77.08
54.8	82.0	2822.5	4494.8	3428.3	1159.9	76.27
54.8	84.0	2800.5	4604.0	3473.2	1184.3	75.44
54.8	86.0	2778.4	4713.1	3515.0	1208.1	74.58
54.8	88.0	2756.1	4822.2	3553.6	1231.2	73.69
54.8	90.0	2733.7	4931.3	3589.0	1253.7	72.78
54.8	92.0	2711.1	5040.4	3621.1	1275.4	71.84
54.8	94.0	2688.3	5149.5	3649.7	1296.4	70.88
54.8	96.0	2665.3	5258.5	3674.9	1316.7	69.89
54.8	98.0	2642.1	5367.6	3696.6	1336.1	68.87
54.8	100.0	2618.5	5476.6	3714.7	1354.7	67.83