

Table 1: Technical Data

| | | | | |
|---|---------------------------|---|--------------------------|-------------|
| Manufacturer | | HERMLE Labortechnik GmbH | | |
| Type | | Z 446 K | | |
| Dimensions | | | | |
| Width | | 73 cm | | |
| Depth | | 67 cm | | |
| Height | | 39 cm | | |
| Weight without rotor | | 111 kg | | |
| max. speed | | 16000 min ⁻¹ | | |
| max. volume | | 4 x 750 ml | | |
| max. RCF | | 26331 x g | | |
| allowable density | | kg/dm ³ | | |
| allowable kinetic energy | | 54458 Nm | | |
| Mains power connection AC | 230 V / 50-60 Hz | 120 V 50-60 Hz | 120 V / 50-60 Hz | |
| Voltage fluctuation | ± 10 % | ± 10 % | ± 10 % | |
| Current consumption | 7,2 A | 15 A | 20 A | |
| Power consumption | 1630 W | 1550 W | 1750 W | |
| Radio interference | | IEC 61326-1 | | |
| Audit requirement (BGR 500) | | yes | | |
| Ambient conditions (EN/IEC 61010-1) | | | | |
| - Environmentment | | for indoor use only | | |
| - High | | Use up to an altitude of 2000 m above MSL | | |
| - Ambient temperature | | 2°C up to 35 °C | | |
| - Max. relative humidity | | Max. relative humidity 80 % for temperatures up to 31°C, decreasing linearly to 50 % relative humidity up to 35°C. | | |
| - Overvoltage category (IEC 60364-4-443) | | II | | |
| - Degree of contamination | | 2 | | |
| Class of protection | | I | | |
| Not suitable for use in hazardous environments. | | | | |
| EMV | EN / IEC | FCC Class B | EN / IEC | FCC Class B |
| Interference emission , noise | 61326-1 | | 61326-1 | |
| | Category B | | Category B | |
| Noise level (depending on the rotor) | | ≤ 65 dB(A) | | |
| Write from operator | | | | |
| Inventory-No.: | | | | |
| Monitoring-No.: | | | | |
| Environment: | | | | |
| Maintenance contract: | | | | |
| responsible service office | HERMLE Labortechnik GmbH | | or dealer service office | |
| | Siemensstrasse 25 | | | |
| | 78564 Wehingen | | | |
| | Tel.: (49)7426 / 96 22-17 | | | |
| | Fax: (49)7426 / 96 22-49 | | | |
| responsible dealer | | | | |

Table 2: Permissible net weight

| rotor number | max. speed | permissible weight |
|--------------|-------------|--------------------|
| 220.86 V02 | 5000 min-1 | 1420 g |
| 221.08 V04 | 4500 min-1 | 2832 g |
| 221.16 V03 | 4500 min-1 | 620 g |
| 221.17 V03 | 15000 min-1 | 106 g |
| 221.18 V02 | 11000 min-1 | 840 g |
| 221.20 V02 | 16000 min-1 | 560 g |
| 221.21 V02 | 8000 min-1 | 2130 g |
| 221.22 V02 | 13000 min-1 | 492 g |
| 221.28 V02 | 12000 min-1 | 160 g |
| 221.36 V02 | 4500 min-1 | 3980 g |
| 221.51 V02 | 8000 min-1 | 2832 g |
| 221.52 V02 | 10500 min-1 | 760 g |
| 221.38 V01 | 15000 min-1 | 14 g |
| 220.87 V09 | 16000 min-1 | 85 g |
| 220.87 V10 | 16000 min-1 | 85 g |

Table 3: Lowest temperatures at max. speed

| rotor number | max. speed | n-max |
|--------------|-------------|-------|
| 220.86 V02 | 5000 min-1 | 4 |
| 221.08 V04 | 4500 min-1 | 0 |
| 221.16 V03 | 4500 min-1 | -8 |
| 221.17 V03 | 15000 min-1 | 3 |
| 221.18 V02 | 11000 min-1 | -1 |
| 221.20 V02 | 16000 min-1 | 7 |
| 221.21 V02 | 8000 min-1 | -1 |
| 221.22 V02 | 13000 min-1 | -4 |
| 221.28 V02 | 12000 min-1 | -2 |
| 221.36 V02 | 4500 min-1 | 4 |
| 221.51 V02 | 8000 min-1 | 0 |
| 221.52 V02 | 10500 min-1 | 2 |
| 221.38 V01 | 15000 min-1 | -2 |
| 220.87 V09 | 16000 min-1 | 1 |
| 220.87 V10 | 16000 min-1 | 1 |

All temperature indications refer to a room temperature of 23°C. By exceeding this value or direct solar radiation to the centrifuge, these values can't be kept up.

Table 4: Max. speed and RCF-values for permissible rotors

| rotor number | max. speed | RCF value |
|--------------|-------------------------|-----------|
| 220.86 V02 | 5000 min ⁻¹ | 4807xg |
| 221.08 V04 | 4500 min ⁻¹ | 4211xg |
| 221.16 V03 | 4500 min ⁻¹ | 2716xg |
| 221.17 V03 | 15000 min ⁻¹ | 23645xg |
| 221.18 V02 | 11000 min ⁻¹ | 15552xg |
| 221.20 V02 | 16000 min ⁻¹ | 26331xg |
| 221.21 V02 | 8000 min ⁻¹ | 10017xg |
| 221.22 V02 | 13000 min ⁻¹ | 15871xg |
| 221.28 V02 | 12000 min ⁻¹ | 15777xg |
| 221.36 V02 | 4500 min ⁻¹ | 4347xg |
| 221.51 V02 | 8000 min ⁻¹ | 10375xg |
| 221.52 V02 | 10500 min ⁻¹ | 16019xg |
| 221.38 V01 | 15000 min ⁻¹ | 15342xg |
| 220.87 V09 | 16000 min ⁻¹ | 24328xg |
| 220.87 V10 | 16000 min ⁻¹ | 24328xg |

Table 5: Accelerations and deceleration times

| rotor-number | Acceleration values | | Deceleration values | |
|---|---------------------|---------|---|---------|
| | level 0 | level 9 | level 0 | level 9 |
| 220.86 V02 | 273 | 30 | 626 | 31 |
| 221.08 V04 | 320 | 35 | 751 | 34 |
| 221.16 V03 | 249 | 27 | 488 | 23 |
| 221.17 V03 | 221 | 23 | 561 | 30 |
| 221.18 V02 | 463 | 48 | 1654 | 46 |
| 221.20 V02 | 480 | 61 | 1220 | 47 |
| 221.21 V02 | 573 | 66 | 1903 | 84 |
| 221.22 V02 | 264 | 28 | 921 | 32 |
| 221.28 V02 | 305 | 32 | 988 | 37 |
| 221.36 V02 | 551 | 55 | 1501 | 54 |
| 221.51 V02 | 575 | 73 | 2317 | 82 |
| 221.52 V02 | 458 | 56 | 1700 | 64 |
| 221.38 V01 | 100 | 12 | 201 | 12 |
| 220.87 V09 | 204 | 21 | 421 | 30 |
| 220.87 V10 | 205 | 21 | 421 | 29 |
| in seconds | | | | |
| Acceleration time from 0 min ⁻¹ -> U _{max} | | | Deceleration time from U _{max} -> 0 min ⁻¹ | |