



VALIADIS S.A.

HELLENIC MOTORS

Type Test Report three phase squirrel-cage motors

Winding cale card

| | | | |
|------------------|------------------|-------------------|----------------|
| Type : KHV 355-2 | Output : 200 kW | Motor No. : | Duty type : S1 |
| Voltage : 3300 V | Conn. : Y | Frequency : 50 Hz | Cosφ : 0.84 |
| Current : 44.4 A | Speed : 2985 rpm | Eff. : 93.9 % | |

Statorwinding resistance measurement (cold)

| | | | |
|---------------------|------------------------------|---------------------------|--------------------|
| Connection : Y | $R_{u1-v1} : 0.65340 \Omega$ | $R_{av} = 0.65270 \Omega$ | Asymmetry : 0.21 % |
| Winding temp: 37 °C | $R_{v1-w1} : 0.65200 \Omega$ | | |
| Room temp: 37 °C | $R_{w1-u1} : 0.65270 \Omega$ | | |

No-load test

$$R_{begin} = 0.76580 \Omega \quad R_{end} = 0.76540 \Omega$$

| Losses | | | | | | |
|--------|------|------|-------|------|------|------|
| Uo | Io | Po | cosφo | Vcu1 | Vfe | Vw |
| V | A | W | | W | W | W |
| 3905 | 21.2 | 9869 | 0.069 | 517 | 4186 | 5166 |
| 3615 | 18.5 | 8919 | 0.077 | 393 | 3360 | 5166 |
| 3300 | 16.2 | 8166 | 0.088 | 303 | 2697 | 5166 |
| 2952 | 14.2 | 7511 | 0.103 | 232 | 2113 | 5166 |
| 2556 | 12.2 | 6902 | 0.128 | 171 | 1565 | 5166 |
| 2087 | 9.9 | 6315 | 0.176 | 113 | 1036 | 5166 |
| 1476 | 7.1 | 5741 | 0.316 | 58 | 517 | 5166 |
| 1044 | 5.4 | 5459 | 0.557 | 34 | 259 | 5166 |

Sound pressure level in dB (A) (at 1 m): 90.0

Sound power level in dB(A): 103.2

Vibration level (mm/s): x=1.3 y=1.6 z=1.5

Temperature rise test

Voltage : 3300 V, Frequency : 50 Hz, Current : 44.9 A, connection : Y

| According to IEC 34-1 | Time | Room temp. °C | Rwdg Ω | Wdg. temp. °C | Wdg. temp. rise(K) | U V | I A | P W | *frame °C |
|-----------------------|-------|---------------|---------|---------------|--------------------|-------------------------------|------|----------|-----------|
| Begin | 20:30 | 37.0 | 0.65280 | 37.0 | ----- | | | | 37.0 |
| | 21:00 | 34.5 | | | | 3300 | 44.9 | 218700.0 | 70.0 |
| | 21:30 | 34.5 | | | | 3300 | 45.0 | 218700.0 | 63.5 |
| | 22:00 | 34.5 | | | | 3300 | 44.9 | 217620.0 | 61.0 |
| | 22:30 | 34.5 | | | | 3300 | 44.9 | 217260.0 | 61.0 |
| | 23:00 | 34.5 | | | | 3300 | 45.1 | 218340.0 | 61.0 |
| End | | 34.5 | 0.79770 | 97.4 | 62.9 | *bearing:DE=68.8°C, NDE= 41°C | | | |

*measured Temperature (°C) with ETD, ETD= embedded temperature detector

Experimenter:

Reader:

Agree:



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Load test

Frequency: 50 Hz

Connection: Y

Rav= 0.79745 Ω

QAV= 97.3 °C

| P2 | U | I | P1 | cosφ | n | s | Vfe | Vcu1 | Ve | Vcu2 | Vw | Vv | P2 | n |
|----------|------|------|---------|-------|-------------------|------|------|------|------|------|------|-------|---------|------|
| Approx.% | V | A | kW | | Min ⁻¹ | % | W | W | W | W | W | W | kW | % |
| 25 | 3300 | 19.0 | 58.460 | 0.539 | 2994 | 0.20 | 2697 | 431 | 64 | 113 | 5166 | 8471 | 49.989 | 85.5 |
| 50 | 3300 | 26.7 | 109.346 | 0.716 | 2991 | 0.31 | 2697 | 854 | 298 | 329 | 5166 | 9344 | 100.002 | 91.5 |
| 75 | 3300 | 34.6 | 160.588 | 0.812 | 2986 | 0.46 | 2697 | 1432 | 618 | 722 | 5166 | 10635 | 149.953 | 93.4 |
| 100 | 3300 | 43.2 | 212.439 | 0.860 | 2980 | 0.65 | 2697 | 2235 | 1062 | 1354 | 5166 | 12514 | 199.925 | 94.1 |
| 125 | 3300 | 53.2 | 265.154 | 0.872 | 2974 | 0.88 | 2697 | 3385 | 1698 | 2288 | 5166 | 15233 | 249.921 | 94.3 |
| 150 | 3300 | 65.1 | 318.987 | 0.857 | 2965 | 1.15 | 2697 | 5068 | 2629 | 3585 | 5166 | 19146 | 299.841 | 94.0 |

Locked rotor test

| U | I | P1 | cosφ | T |
|------|--------|---------|-------|-------|
| V | A | kW | | Nm |
| 3300 | 322.24 | 424.982 | 0.231 | 869.9 |
| 3000 | 286.67 | 337.385 | 0.226 | 689.9 |
| 2500 | 229.08 | 215.272 | 0.217 | 440.4 |
| 2000 | 174.12 | 122.414 | 0.203 | 251.3 |
| 1650 | 137.51 | 74.453 | 0.189 | 153.5 |
| 825 | 58.65 | 15.438 | 0.184 | 28.9 |

Total/speed and current/speed test

| n | T | I | n | T | I | n | T | I | n | T | I |
|-------------------|--------|-------|-------------------|--------|-------|-------------------|--------|-------|-------------------|--------|-------|
| Min ⁻¹ | Nm | A | Min ⁻¹ | Nm | A | Min ⁻¹ | Nm | A | Min ⁻¹ | Nm | A |
| 3000 | 0.0 | 8.1 | 2945 | 1563.5 | 102.9 | 2891 | 2123.2 | 171.9 | 2709 | 1882.4 | 258.2 |
| 2588 | 1682.8 | 259.2 | 2466 | 1493.5 | 265.6 | 2344 | 1339.4 | 269.4 | 2223 | 1224.6 | 271.7 |
| 2101 | 1143.4 | 273.3 | 1858 | 1043.7 | 277.0 | 1615 | 976.3 | 282.6 | 1371 | 914.1 | 289.8 |
| 1128 | 859.8 | 297.0 | 885 | 822.6 | 302.6 | 642 | 800.1 | 306.4 | 399 | 771.6 | 310.7 |
| 201 | 804.6 | 318.9 | 0 | 869.9 | 322.2 | | | | | | |

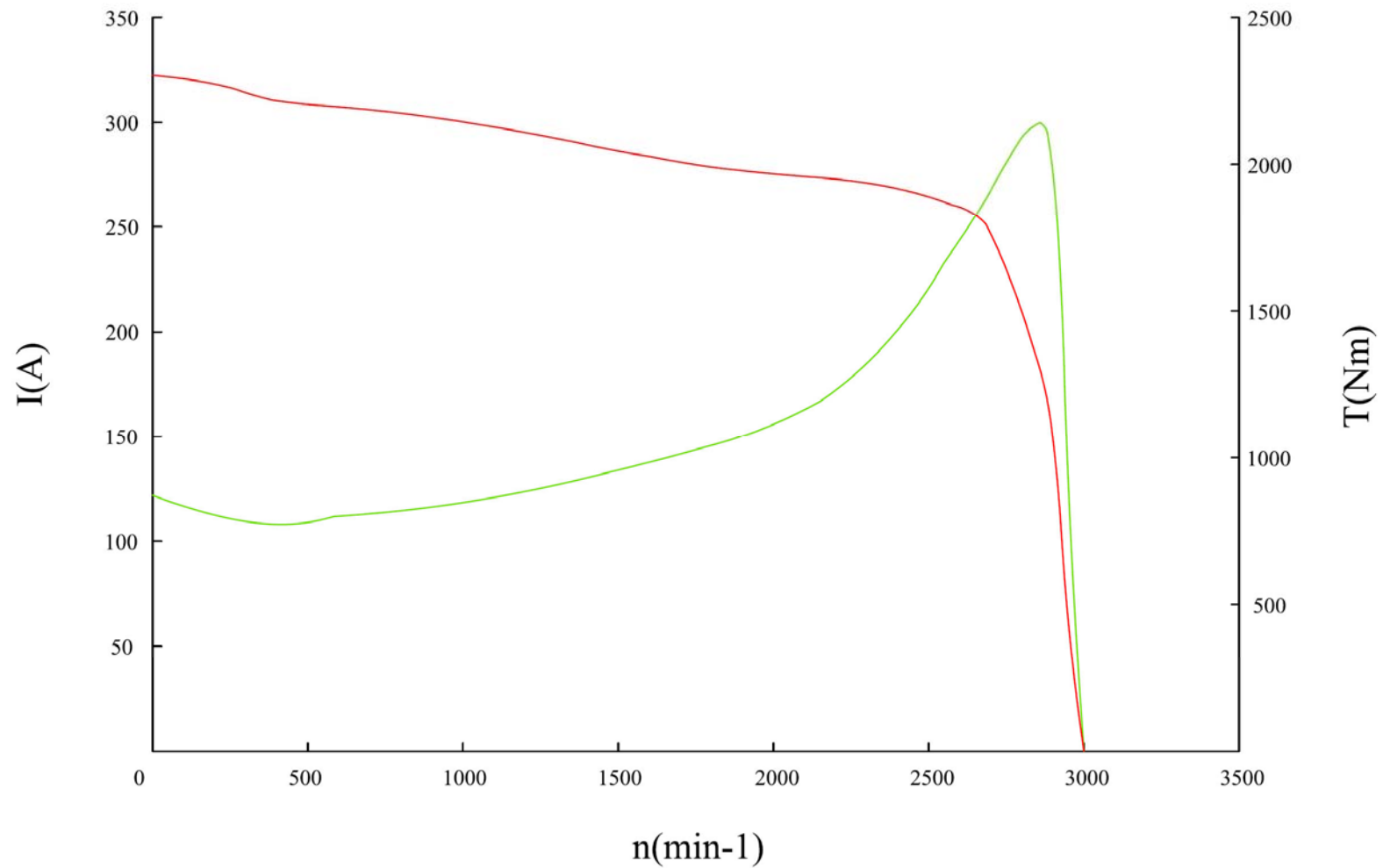


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Torque/speed and Current/speed test

Motor Type: KHV 355-2
Rated Output: 200 kW 3.3KV



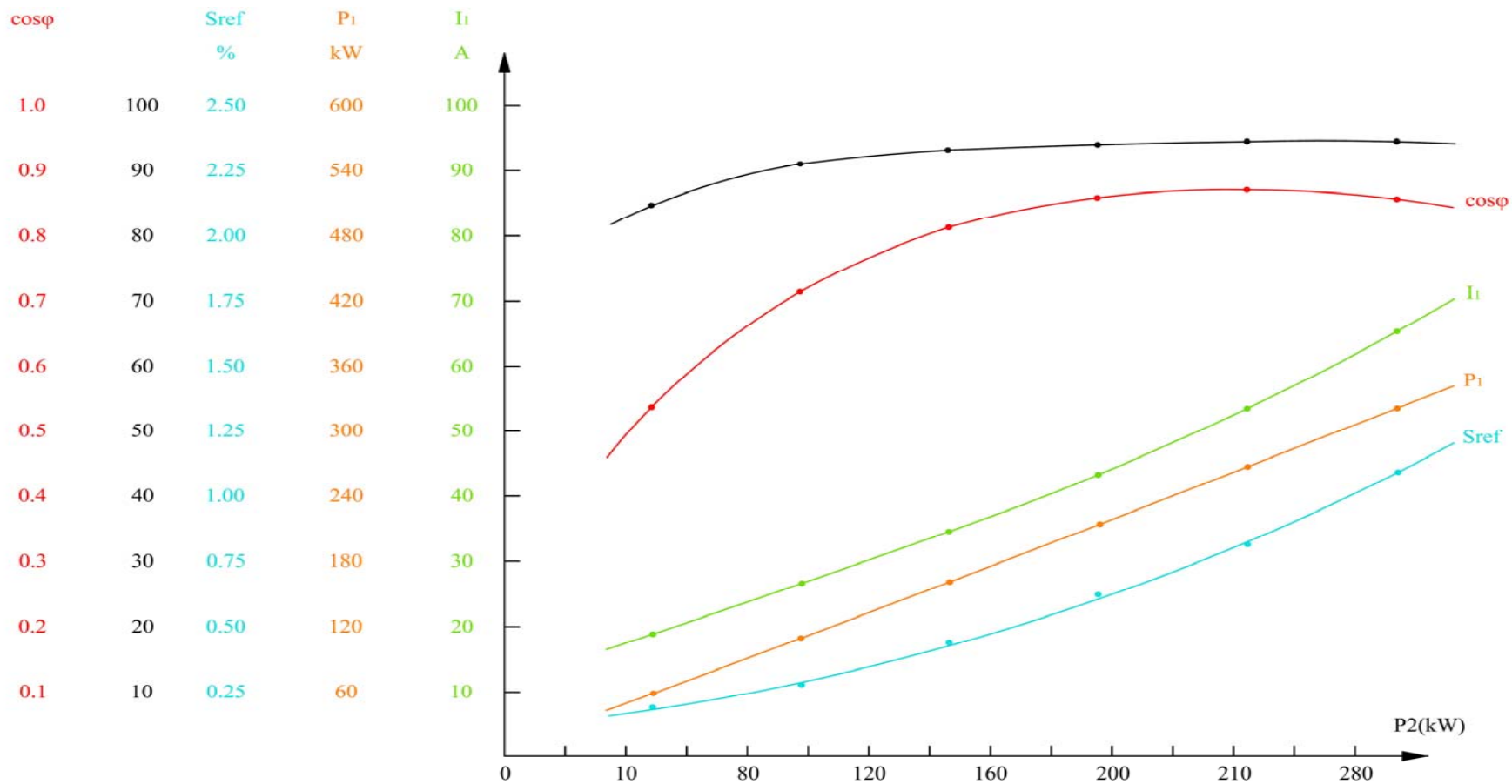


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Load Characteristic Curve

Motor Type: KHV 355-2
Rated Output: 200 kW 3.3KV



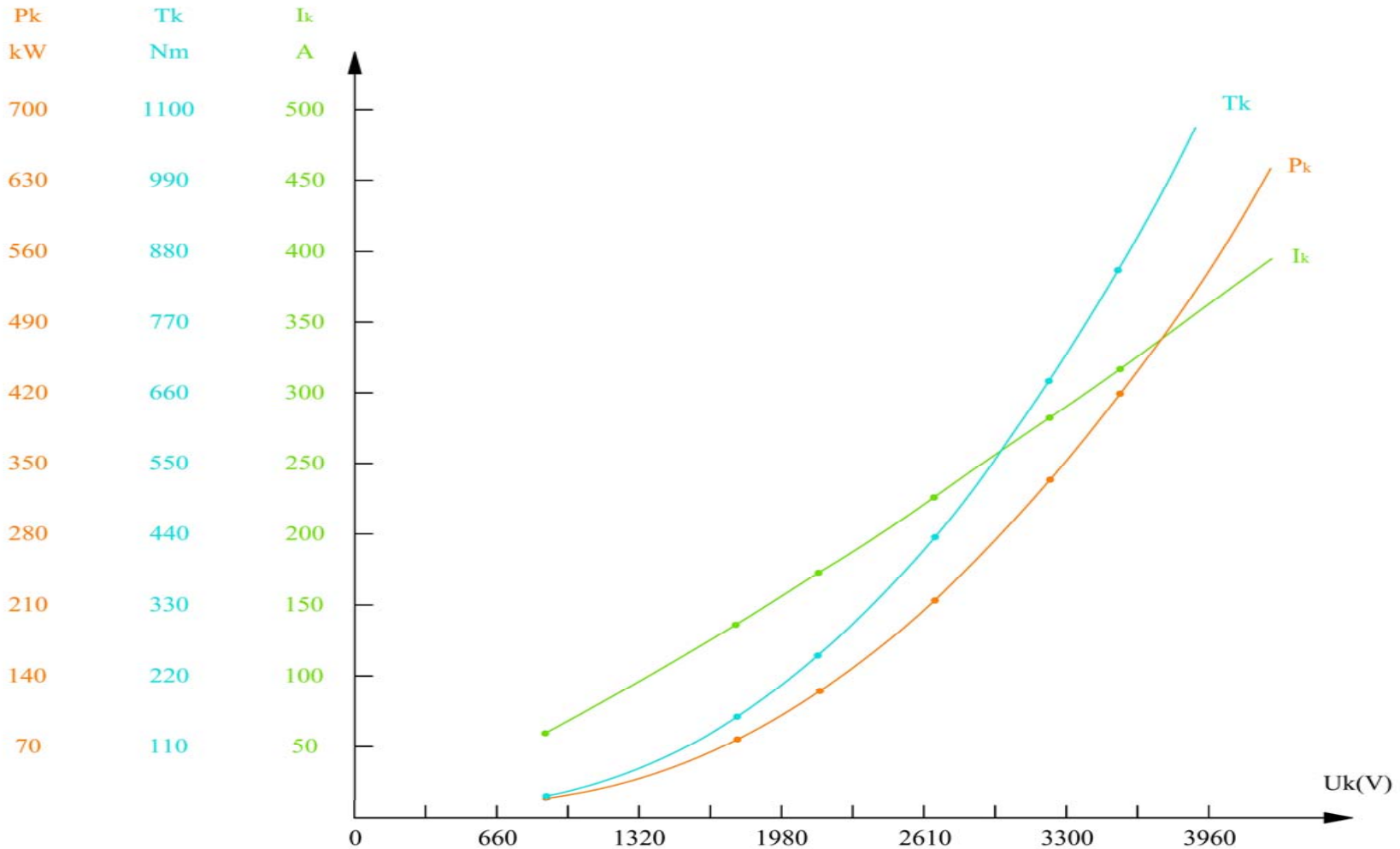


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Locked Rotor Characteristic Curve

Motor Type: KHV 355-2
Rated Output: 200 kW 3.3KV



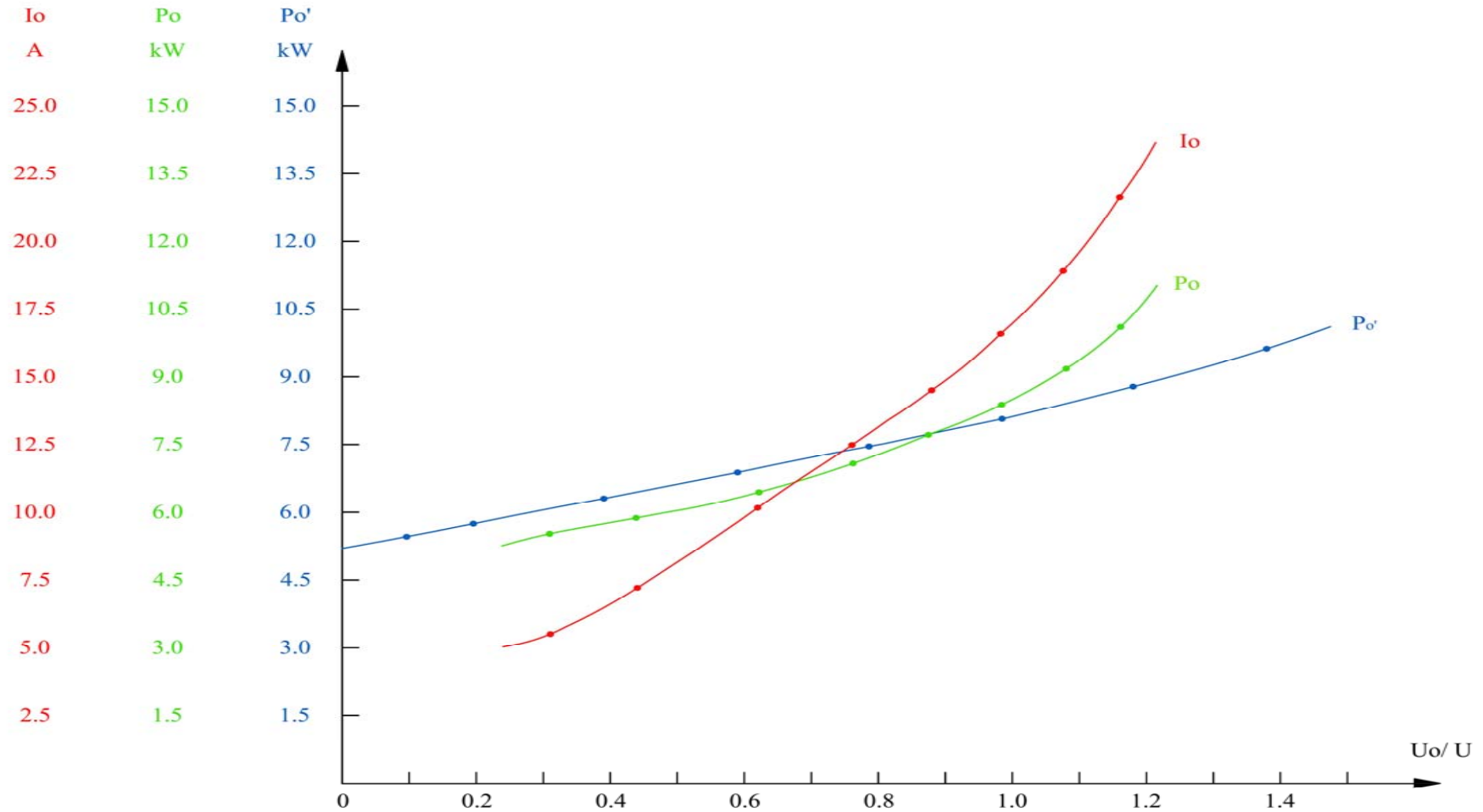


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No Load Characteristic Curve

Motor Type: KHV 355-2
Rated Output: 200 kW 3.3KV



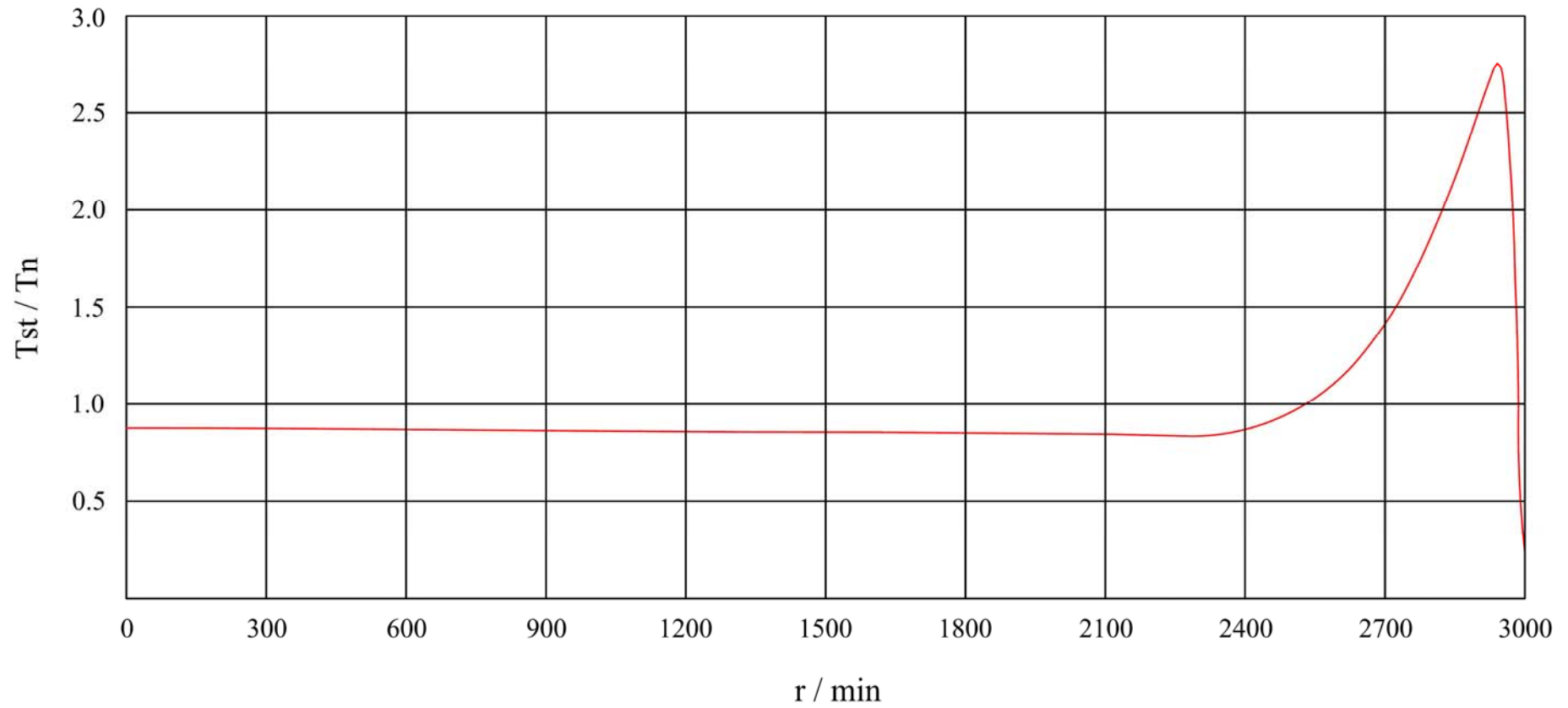


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Speed-Torque Curve

Motor Type: KHV 355-2
Rated Output: 200 kW 3.3KV





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Speed-Current Curve

Motor Type: KHV 355-2
Rated Output: 200 kW 3.3KV

