

# Type Test Report

Report No.: TTR3IC21600A2SL

## Test Result Data

### Nameplate data

|             |             |                    |        |
|-------------|-------------|--------------------|--------|
| Type:       | HMC3 160M-4 | Protection Class.: | IP55   |
| Voltage:    | 400 V       | Duty:              | S1     |
| Current:    | 21.06 A     | Frequency:         | 50 Hz  |
| Output:     | 11 kW       | Efficiency.:       | 91.6 % |
| Connection: | D           | Cos $\phi$ :       | 0.83   |
| Speed:      | 1474 rpm    | Insulation Class:  | F      |

### No-Load test at rated voltage

|                          |          |                  |          |
|--------------------------|----------|------------------|----------|
| No load loss:            | 447.65 W | No load current: | 9.16 A   |
| Machine loss:            | 73.21 W  | Core loss:       | 304.87 W |
| Sound pressure level 1m: | 71 dB(A) | Vibration:       | 0.8 mm/s |

### Temperature rise test

|                              |          |                      |         |
|------------------------------|----------|----------------------|---------|
| Voltage:                     | 400.0 V  | Current:             | 21.06 A |
| Power:                       | 11.00 kW | Temperature - rise:  | 58 K    |
| Winding hotspot temperature: | 88 °C    | Bearing temperature: | 60 °C   |
| Frequency:                   | 50 Hz    | Ambient temperature: | 30 °C   |

### Load performance test

| Load<br>%  | Un<br>V    | f<br>Hz   | P1<br>KW     | I1<br>A      | N<br>rpm    | T<br>Nm      | Cos $\phi$<br>Cos $\phi$ | Eff ( $\eta$ )<br>% |
|------------|------------|-----------|--------------|--------------|-------------|--------------|--------------------------|---------------------|
| 125        | 400        | 50        | 15.05        | 25.87        | 1466        | 89.57        | 0.84                     | 90.33               |
| <b>100</b> | <b>400</b> | <b>50</b> | <b>12.16</b> | <b>21.06</b> | <b>1474</b> | <b>71.28</b> | <b>0.83</b>              | <b>91.60</b>        |
| 75         | 400        | 50        | 9.10         | 16.75        | 1481        | 53.20        | 0.78                     | 92.07               |
| 50         | 400        | 50        | 6.05         | 13.10        | 1488        | 35.30        | 0.67                     | 90.10               |
| 25         | 400        | 50        | 3.22         | 10.32        | 1494        | 17.57        | 0.45                     | 83.77               |

### Locked rotor test at rated voltage

|                         |          |                        |           |
|-------------------------|----------|------------------------|-----------|
| Input power:            | 60.8 kW  | Cos $\phi$ :           | 0.51      |
| Starting current:       | 172.37 A | Starting torque:       | 206.80 Nm |
| Starting/Rated current: | 8.18     | Starting/Rated torque: | 2.90      |

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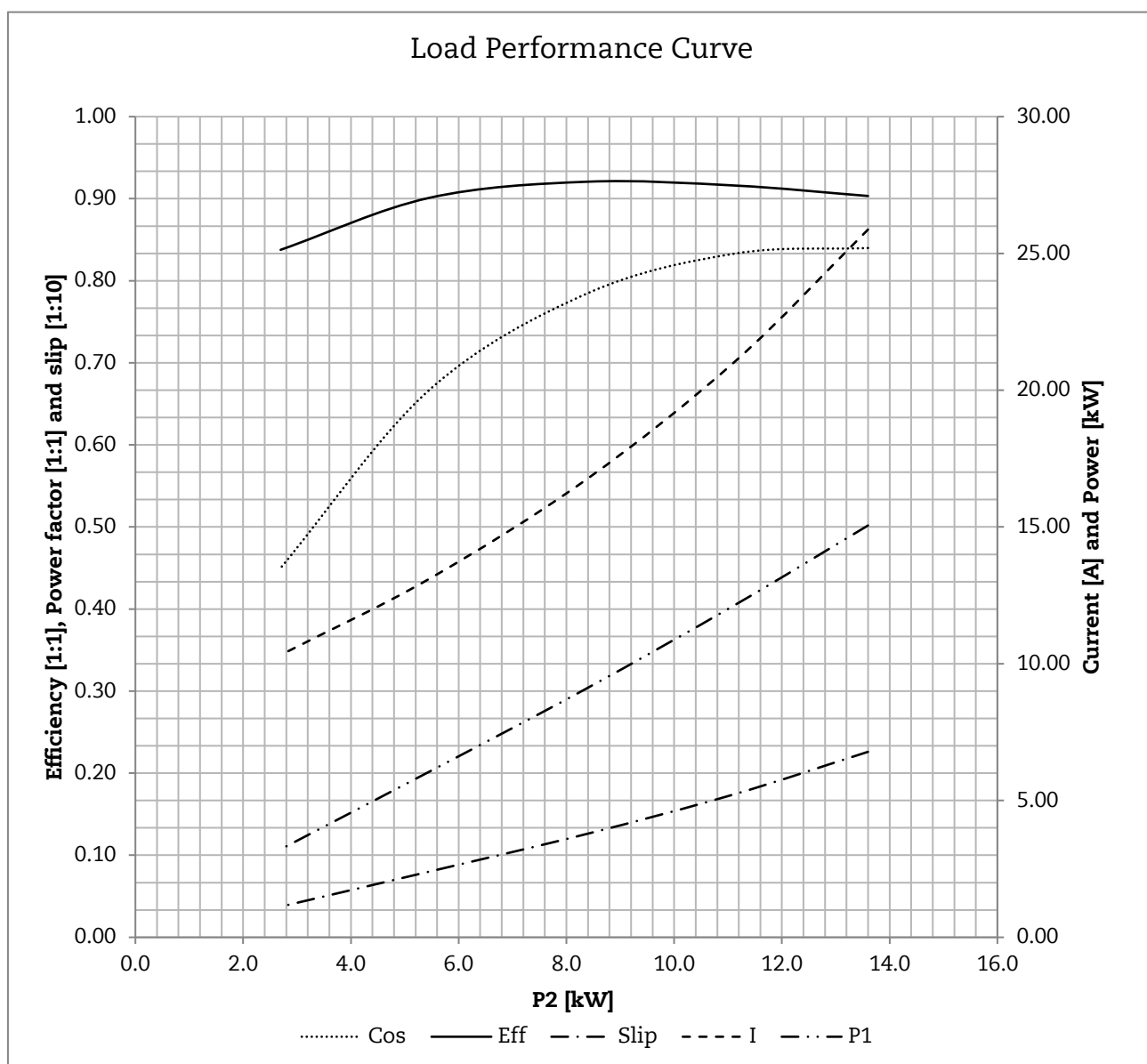
Data are not binding. Hoyer reserves the right to implement changes without notice. The extent of data are not equivalent to nameplate on the motors.

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## Load test data

| P2<br>kW | P1<br>kW | Eff ( $\eta$ )<br>P2/P1 | I<br>A | T<br>Nm | Cos $\phi$ |
|----------|----------|-------------------------|--------|---------|------------|
| 13.6     | 15.1     | 0.903                   | 25.87  | 89.6    | 0.84       |
| 11.1     | 12.2     | 0.916                   | 21.06  | 71.3    | 0.83       |
| 8.4      | 9.1      | 0.921                   | 16.75  | 53.2    | 0.78       |
| 5.5      | 6.1      | 0.901                   | 13.10  | 35.3    | 0.67       |
| 2.7      | 3.2      | 0.838                   | 10.32  | 17.6    | 0.45       |



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## No-load test data at rated frequency

| U <sub>0</sub><br>V | I <sub>0</sub><br>A | P <sub>0</sub><br>W | P <sub>cul.</sub> |
|---------------------|---------------------|---------------------|-------------------|
| 495.5               | 17.75               | 1230.0              | 267.0             |
| 454.3               | 12.86               | 730.0               | 140.1             |
| 413.7               | 9.83                | 500.0               | 81.9              |
| 372.8               | 8.01                | 380.0               | 54.4              |
| 333.1               | 6.84                | 320.0               | 39.6              |
| 292.6               | 5.83                | 260.0               | 28.8              |
| 252.1               | 4.89                | 220.0               | 20.3              |
| 221.9               | 4.24                | 190.0               | 15.2              |
| 191.4               | 3.61                | 160.0               | 11.0              |
| 161.5               | 3.03                | 140.0               | 7.8               |

