

DATA SHEET

Three Phase Induction Motor - Squirrel Cage



| | | | | | |
|--|---|-----------------------------------|--|----------------------|----------|
| Customer : | | | | | |
| Product line | : W40 NEMA Premium Efficiency Three-Phase | Product code : | 14494897 | | |
| | | Catalog # : | 02036OT3E254TC-W40 | | |
| Frame | : 254TC | Cooling method | : IC01 - ODP | | |
| Insulation class | : F | Mounting | : F-1 | | |
| Duty cycle | : Cont.(S1) | Rotation ¹ | : Both (CW and CCW) | | |
| Ambient temperature | : -20°C to +40°C | Starting method | : Direct On Line | | |
| Altitude | : 1000 m.a.s.l. | Approx. weight ² | : 213 lb | | |
| Protection degree | : IP23 | Moment of inertia (J) | : 0.8718 sq.ft.lb | | |
| Design | : B | | | | |
| Output [HP] | 20 | 15 | 15 | 15 | |
| Poles | 2 | 2 | 2 | 2 | |
| Frequency [Hz] | 60 | 50 | 50 | 50 | |
| Rated voltage [V] | 230/460 | 380 | 400 | 415 | |
| Rated current [A] | 48.6/24.3 | 21.6 | 21.2 | 21.5 | |
| L. R. Amperes [A] | 306/153 | 147 | 142 | 148 | |
| LRC [A] | 6.3x(Code G) | 6.8x(Code H) | 6.7x(Code H) | 6.9x(Code J) | |
| No load current [A] | 16.8/8.40 | 8.00 | 9.30 | 10.3 | |
| Rated speed [RPM] | 3535 | 2945 | 2950 | 2955 | |
| Slip [%] | 1.81 | 1.83 | 1.67 | 1.50 | |
| Rated torque [ft.lb] | 29.7 | 26.7 | 26.7 | 26.7 | |
| Locked rotor torque [%] | 200 | 200 | 220 | 229 | |
| Breakdown torque [%] | 280 | 290 | 320 | 350 | |
| Service factor | 1.25 | 1.00 | 1.00 | 1.00 | |
| Temperature rise | 80 K | 80 K | 80 K | 80 K | |
| Locked rotor time | 21s (cold) 12s (hot) | 18s (cold) 10s (hot) | 19s (cold) 11s (hot) | 19s (cold) 11s (hot) | |
| Noise level ² | | | | | |
| Efficiency (%) | 25% | 90.0 | 85.6 | 85.8 | 85.9 |
| | 50% | 90.2 | 88.0 | 88.1 | 88.2 |
| | 75% | 91.0 | 88.5 | 88.6 | 88.7 |
| | 100% | 91.0 | 91.2 | 91.2 | 91.2 |
| Power Factor | 25% | 0.48 | 0.46 | 0.39 | 0.35 |
| | 50% | 0.72 | 0.69 | 0.62 | 0.57 |
| | 75% | 0.82 | 0.80 | 0.75 | 0.70 |
| | 100% | 0.85 | 0.85 | 0.82 | 0.78 |
| Bearing type | : <u>Drive end</u> 6309 Z C3 <u>Non drive end</u> 6209 Z C3 | Foundation loads | | | |
| Sealing | : Without Bearing Seal Without Bearing Seal | Max. traction Max. compression | | | |
| Lubrication interval | : 20000 h 20000 h | | | | |
| Lubricant amount | : 13 g 9 g | | | | |
| Lubricant type | : Mobil Polyrex EM | | | | |
| Notes USABLE @208V 53.7A SF 1.15 SFA 61.8A | | | | | |
| This revision replaces and cancel the previous one, which must be eliminated. (1) Looking the motor from the shaft end. (2) Measured at 1m and with tolerance of +3dB(A). (3) Approximate weight subject to changes after manufacturing process. (4) At 100% of full load. | | | These are average values based on tests with sinusoidal power supply, subject to the tolerances stipulated in NEMA MG-1. | | |
| Rev. | Changes Summary | | Performed | Checked | Date |
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TORQUE AND CURRENT VS SPEED CURVE

Three Phase Induction Motor - Squirrel Cage



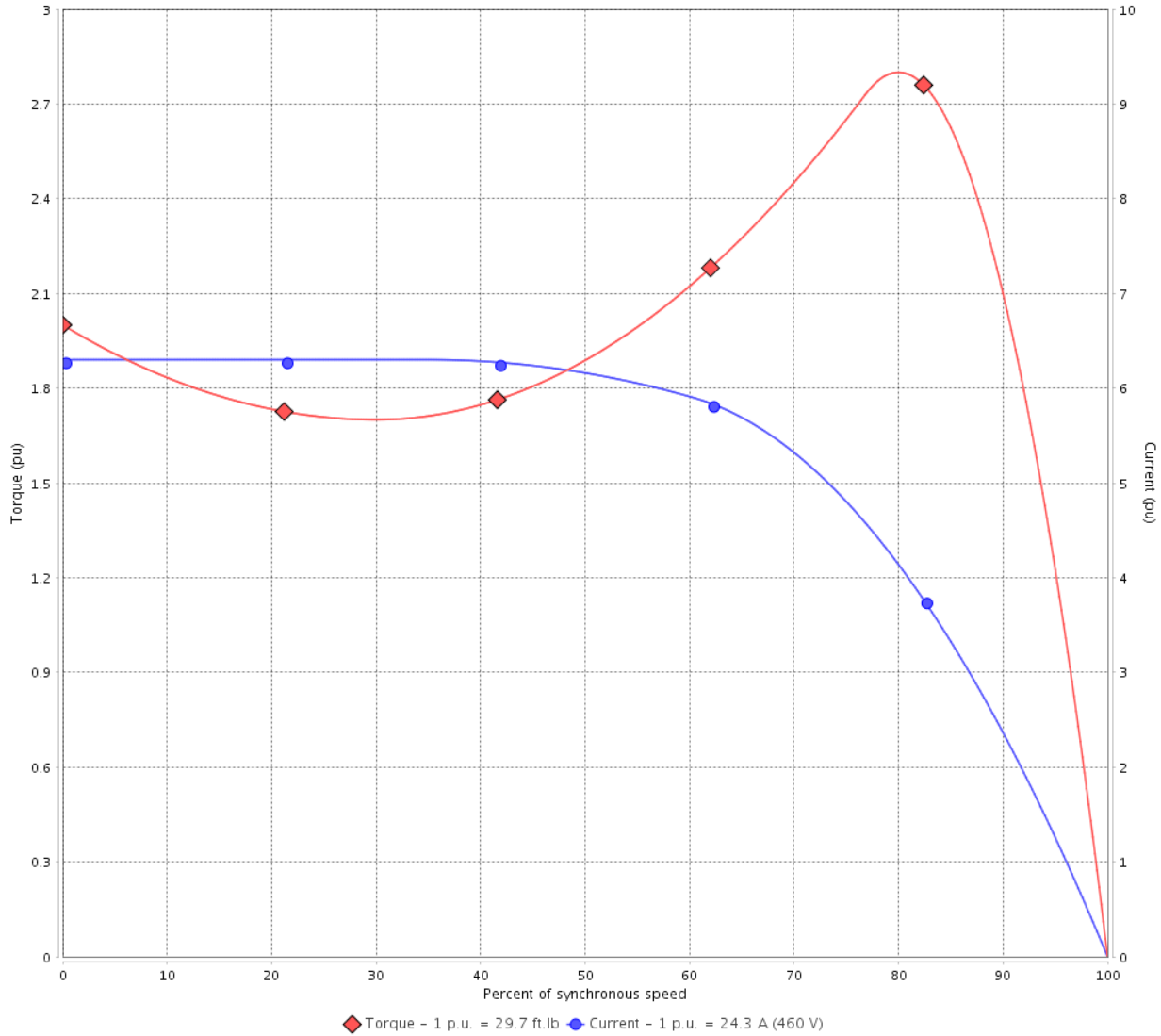
Customer :

Product line : W40 NEMA Premium Efficiency
Three-Phase

Product code : 14494897

Catalog # : 02036OT3E254TC-W40

TORQUE AND CURRENT VS SPEED CURVE



Performance : 230/460 V 60 Hz 2P

Rated current : 48.6/24.3 A
LRC : 6.3
Rated torque : 29.7 ft.lb
Locked rotor torque : 200 %
Breakdown torque : 280 %
Rated speed : 3535 rpm

Moment of inertia (J) : 0.8718 sq.ft.lb
Duty cycle : Cont.(S1)
Insulation class : F
Service factor : 1.25
Temperature rise : 80 K
Design : B

Locked rotor time : 21s (cold) 12s (hot)

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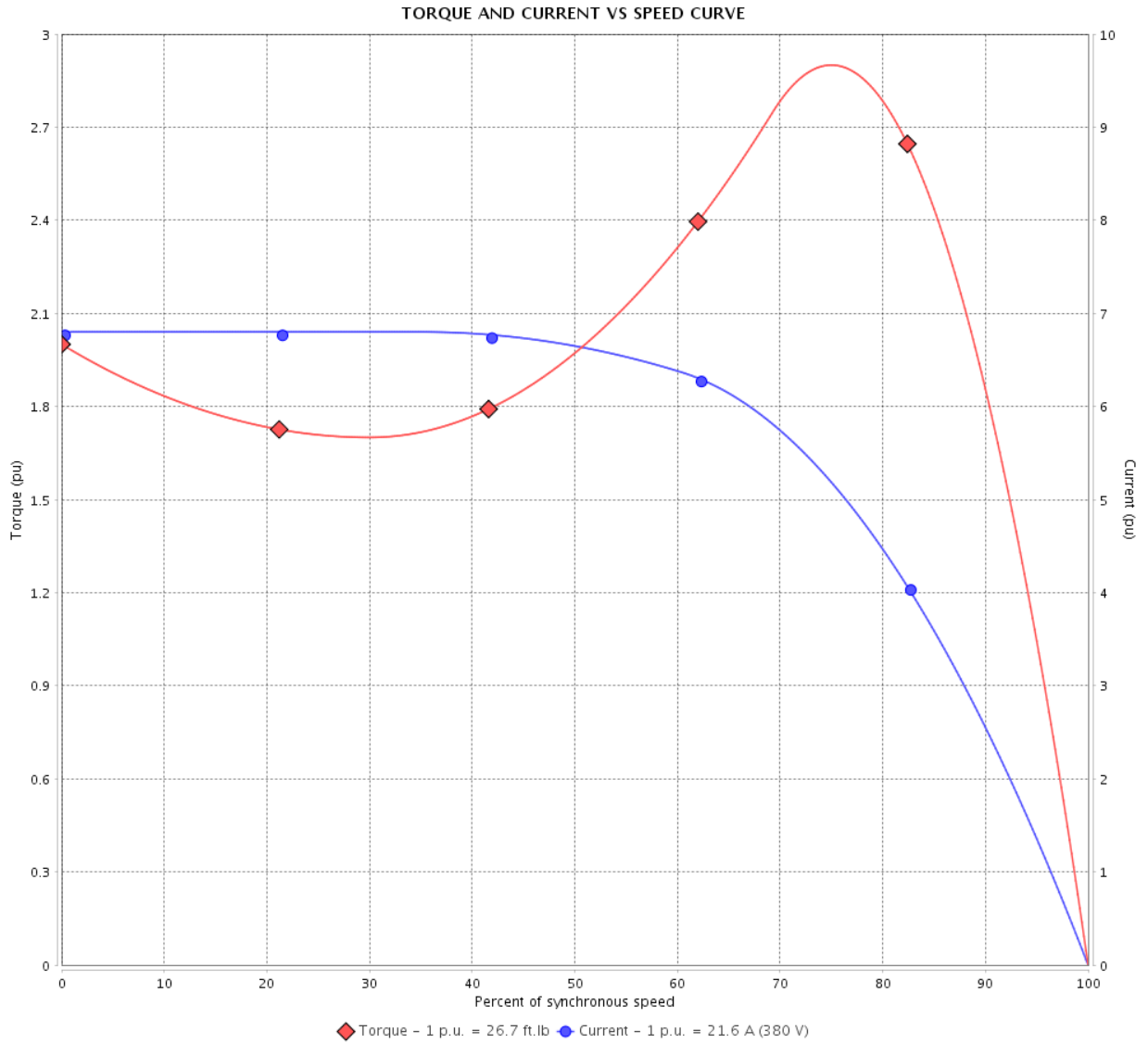
Three Phase Induction Motor - Squirrel Cage

Customer :

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Catalog # : 02036OT3E254TC-W40



Performance : 380 V 50 Hz 2P IE3

Rated current : 21.6 A
LRC : 6.8
Rated torque : 26.7 ft.lb
Locked rotor torque : 200 %
Breakdown torque : 290 %
Rated speed : 2945 rpm

Moment of inertia (J) : 0.8718 sq.ft.lb
Duty cycle : Cont.(S1)
Insulation class : F
Service factor : 1.00
Temperature rise : 80 K
Design : B

Locked rotor time : 18s (cold) 10s (hot)

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TORQUE AND CURRENT VS SPEED CURVE

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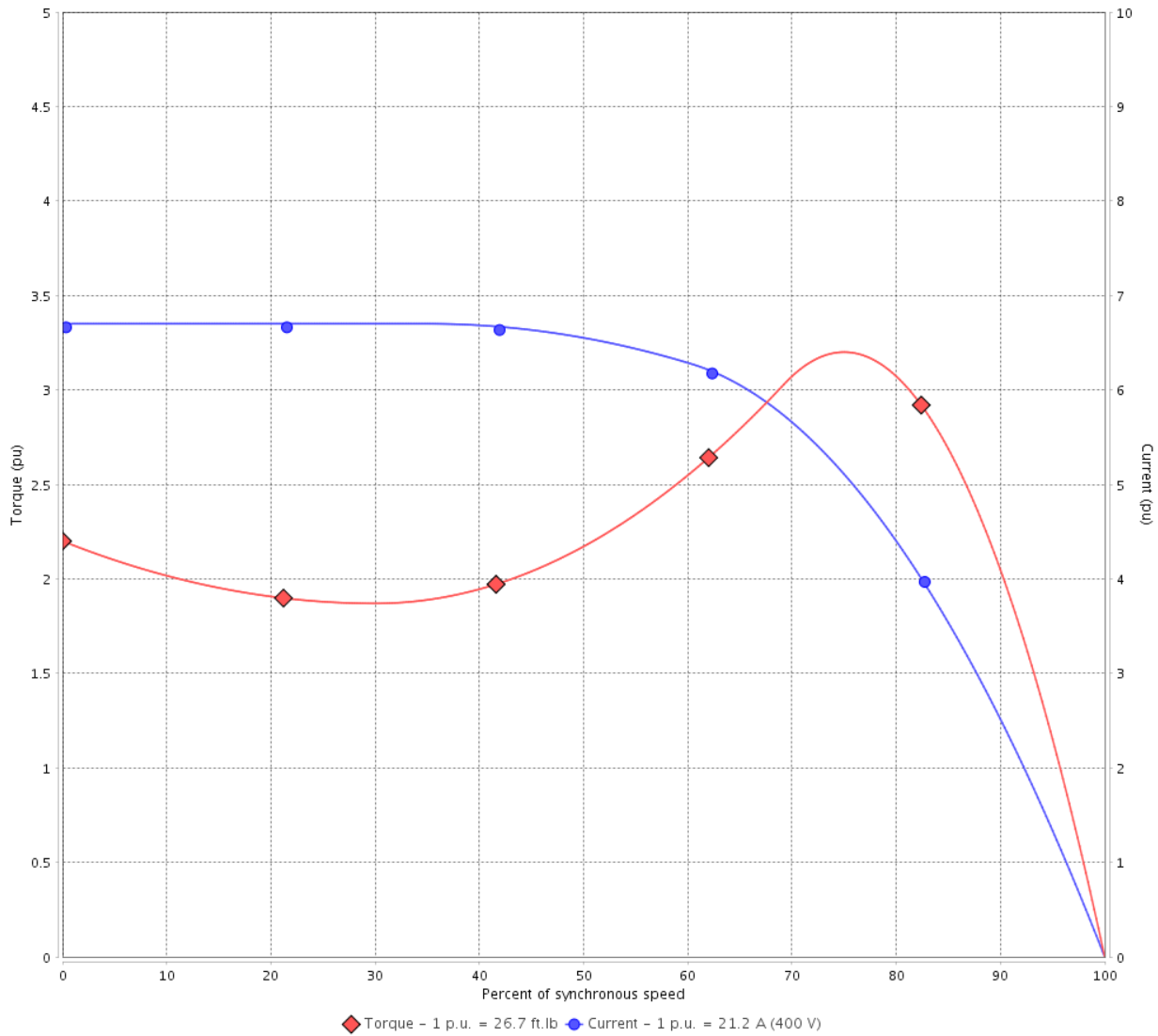
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TORQUE AND CURRENT VS SPEED CURVE



Performance : 400 V 50 Hz 2P IE3

| | | | |
|---------------------|--------------|-----------------------|-------------------|
| Rated current | : 21.2 A | Moment of inertia (J) | : 0.8718 sq.ft.lb |
| LRC | : 6.7 | Duty cycle | : Cont.(S1) |
| Rated torque | : 26.7 ft.lb | Insulation class | : F |
| Locked rotor torque | : 220 % | Service factor | : 1.00 |
| Breakdown torque | : 320 % | Temperature rise | : 80 K |
| Rated speed | : 2950 rpm | Design | : B |

Locked rotor time : 19s (cold) 11s (hot)

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TORQUE AND CURRENT VS SPEED CURVE



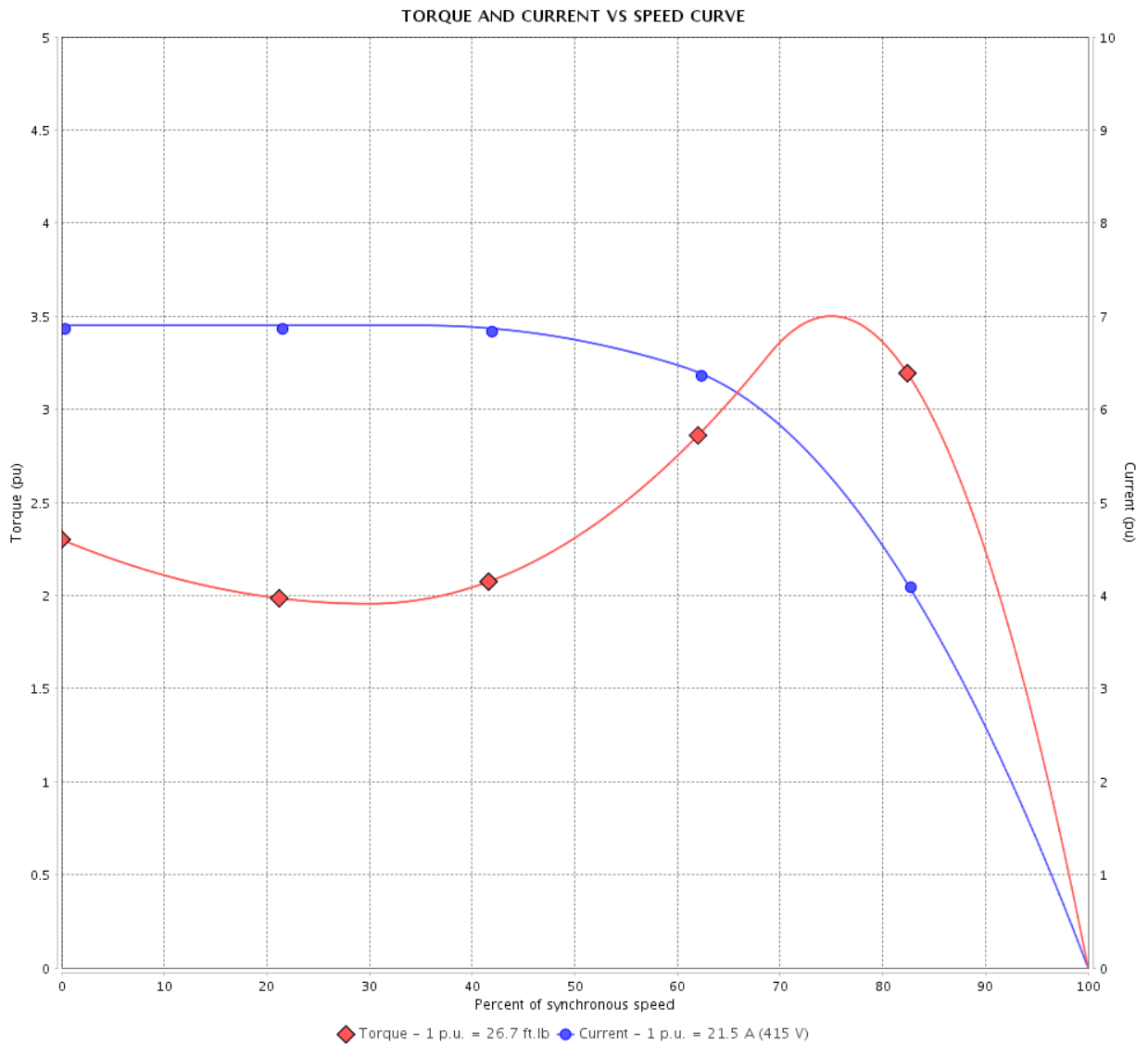
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Catalog # : 02036OT3E254TC-W40



Performance : 415 V 50 Hz 2P IE3

Rated current : 21.5 A
LRC : 6.9
Rated torque : 26.7 ft.lb
Locked rotor torque : 229 %
Breakdown torque : 350 %
Rated speed : 2955 rpm

Moment of inertia (J) : 0.8718 sq.ft.lb
Duty cycle : Cont.(S1)
Insulation class : F
Service factor : 1.00
Temperature rise : 80 K
Design : B

Locked rotor time : 19s (cold) 11s (hot)

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LOAD PERFORMANCE CURVE

Three Phase Induction Motor - Squirrel Cage

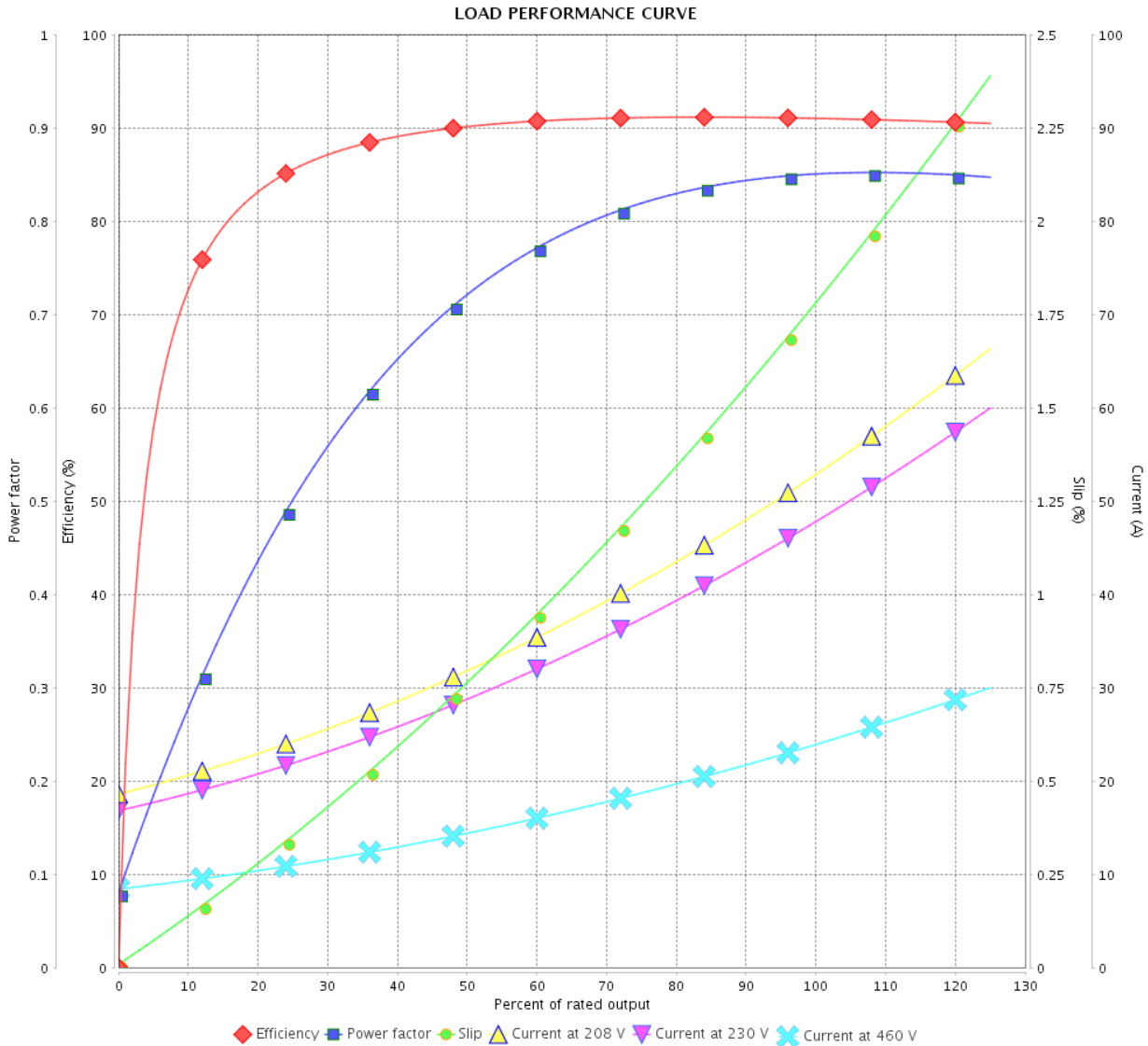


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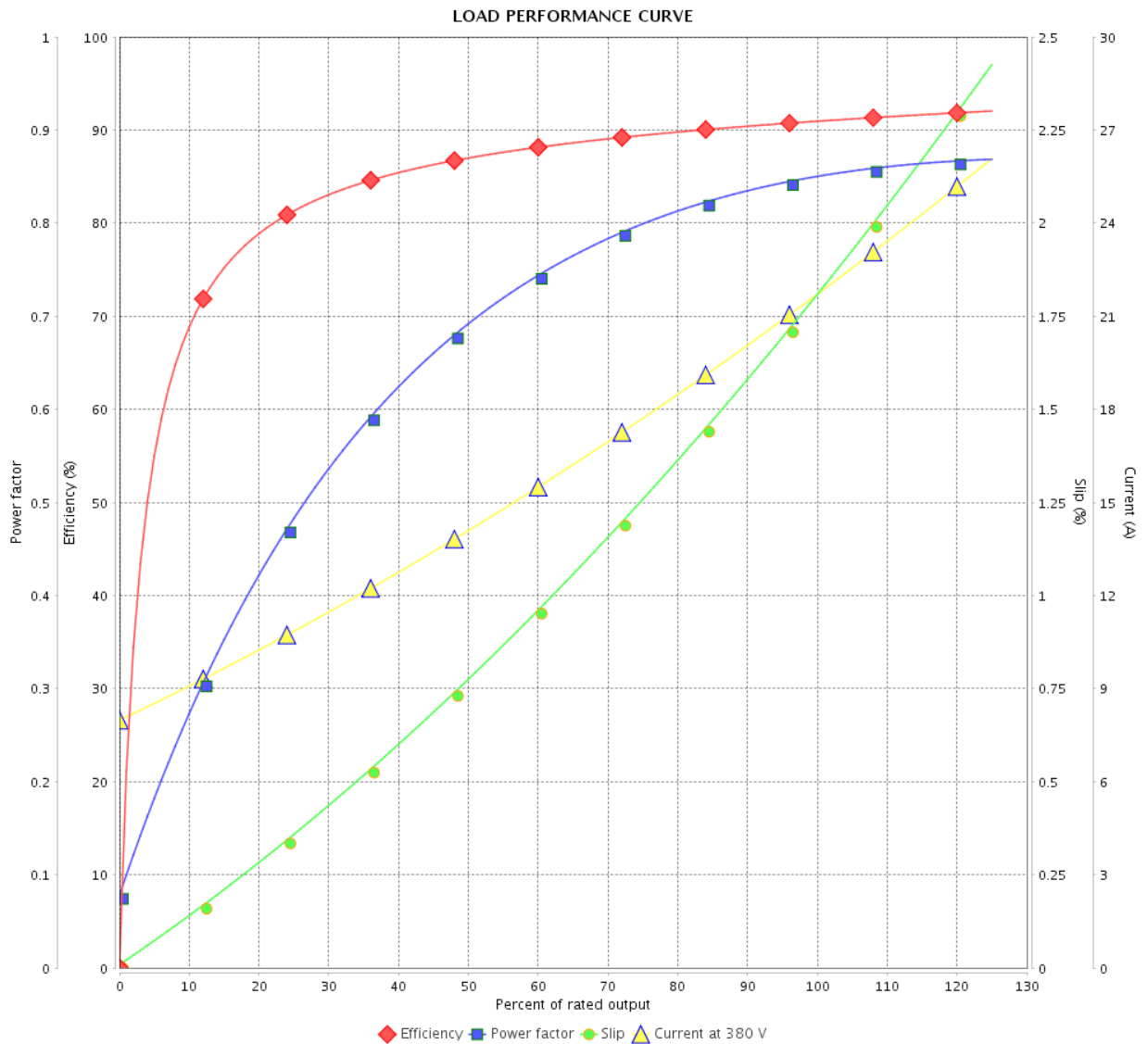


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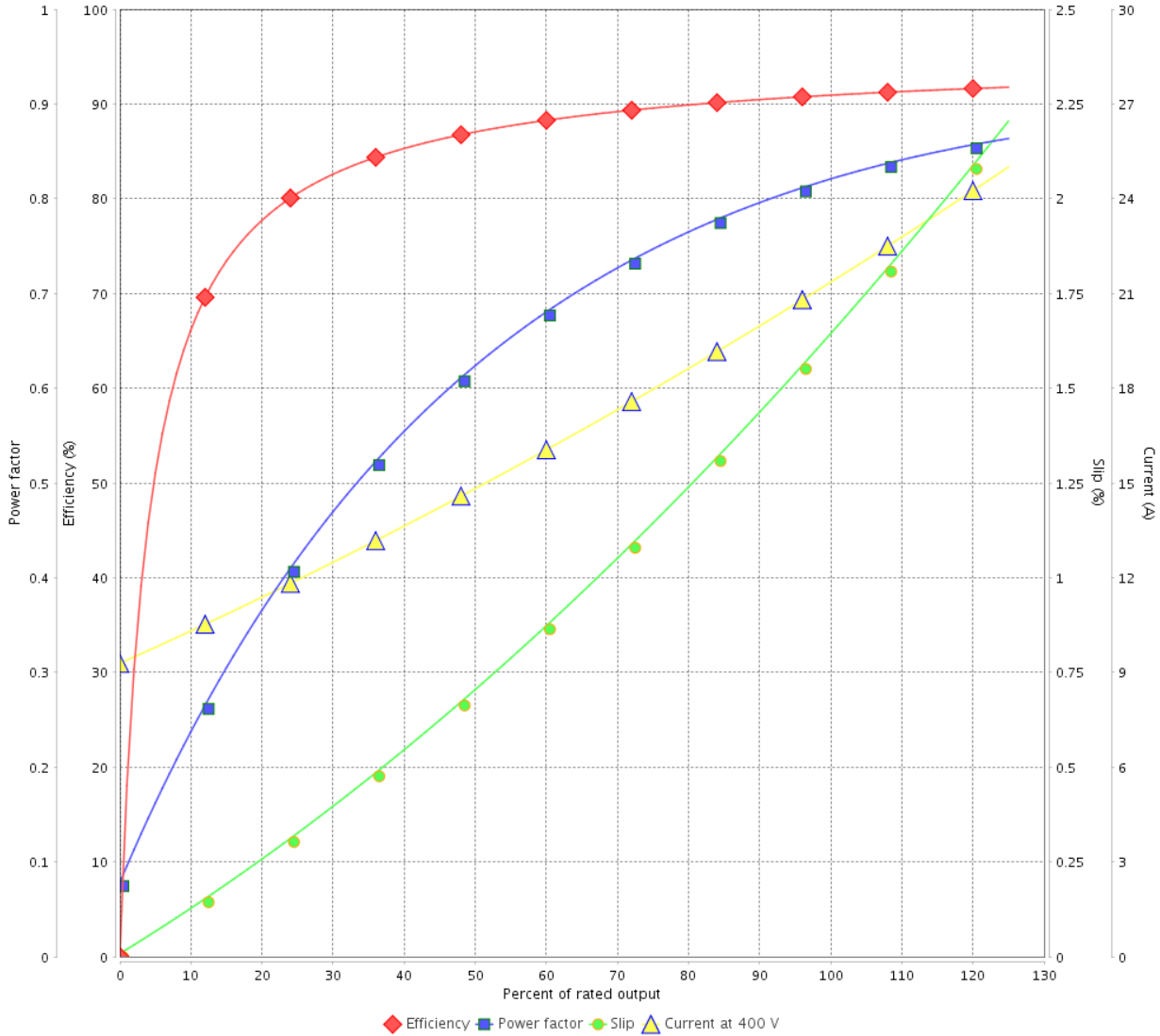
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 Breakdown torque : 320 %
 Rated speed : 2950 rpm

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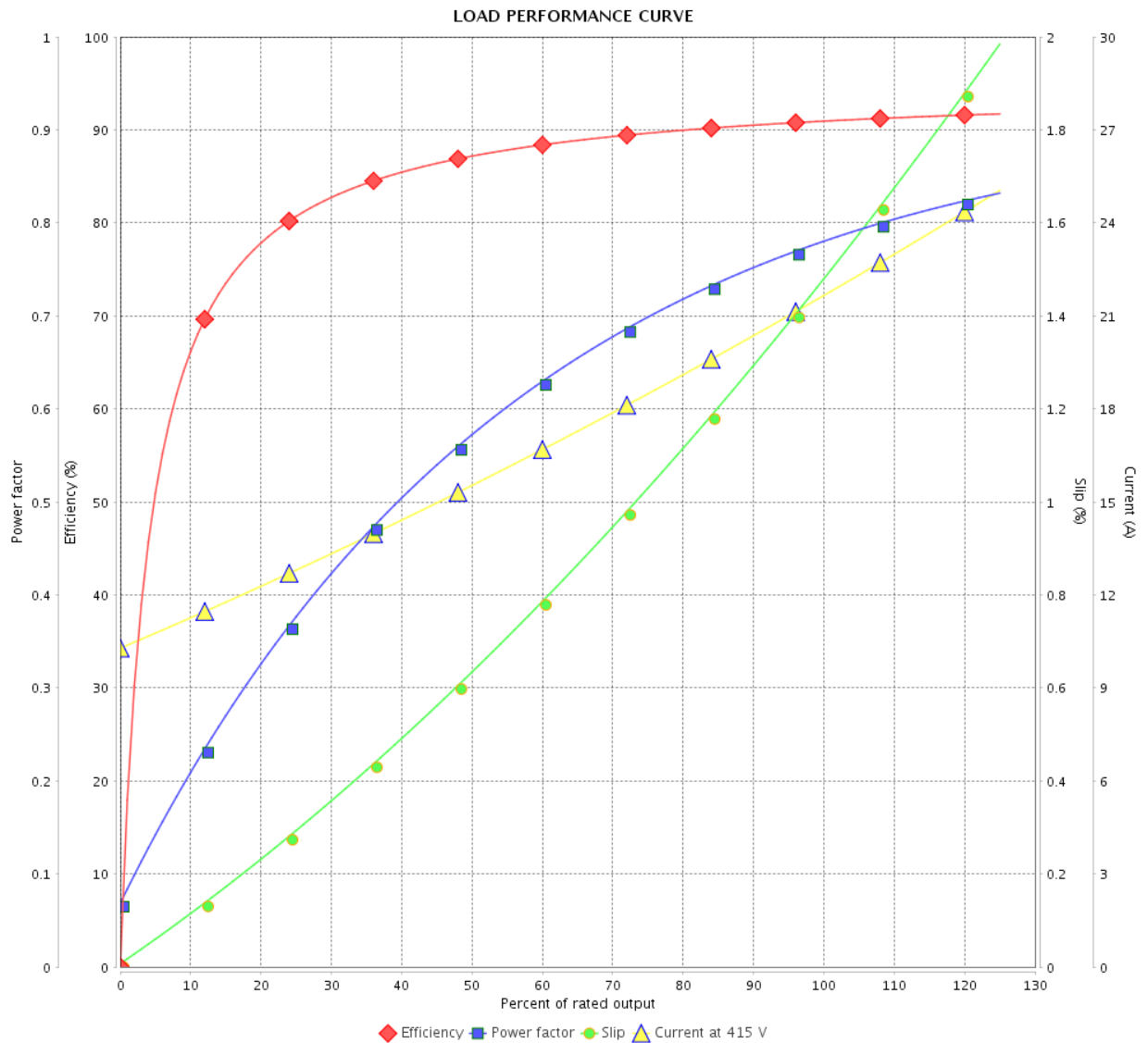


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THERMAL LIMIT CURVE



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Locked rotor torque : 200 %
Breakdown torque : 280 %
Rated speed : 3535 rpm

Moment of inertia (J) : 0.8718 sq.ft.lb
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Service factor : 1.25
Temperature rise : 80 K
Design : B

Heating constant

Cooling constant

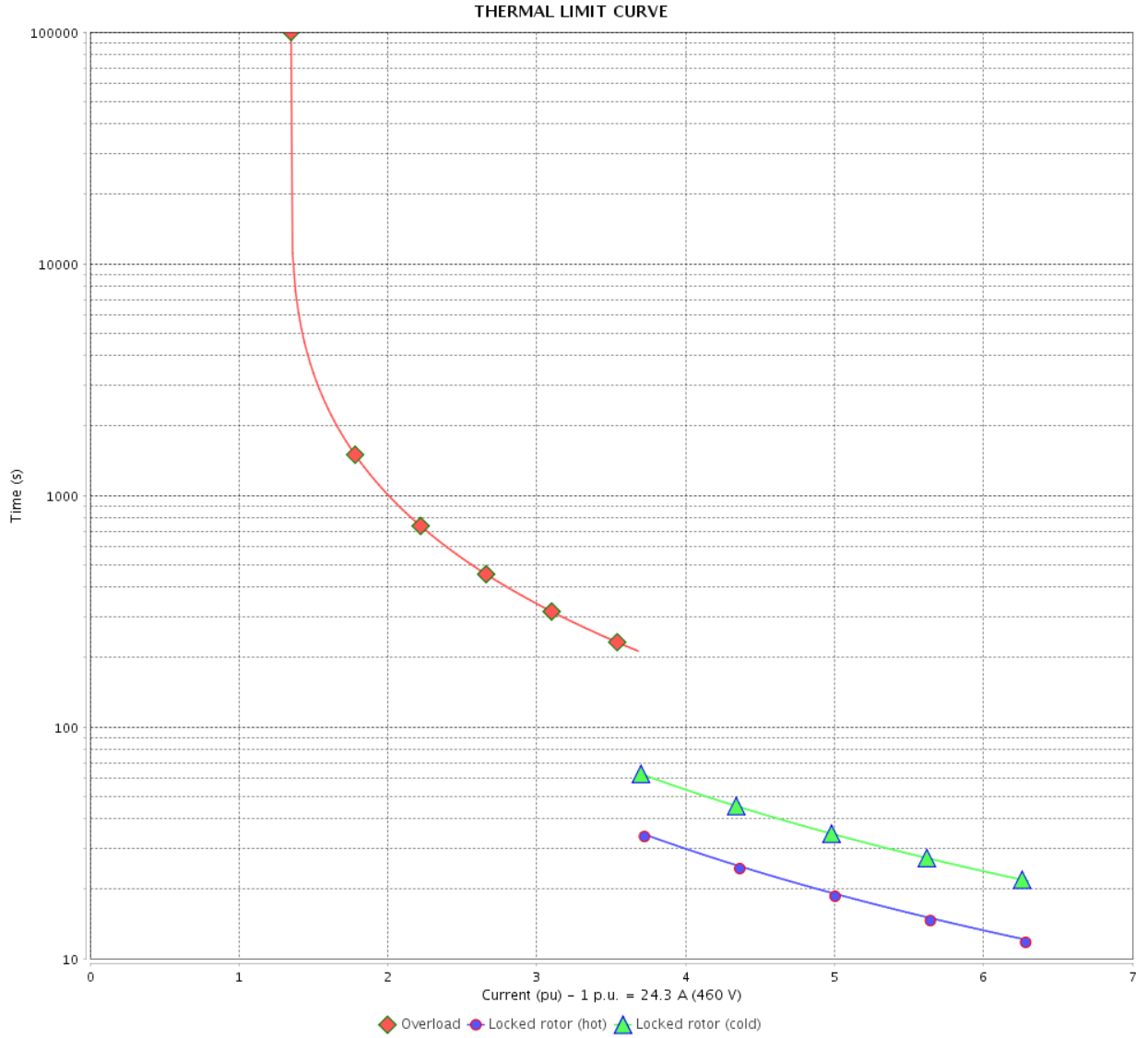
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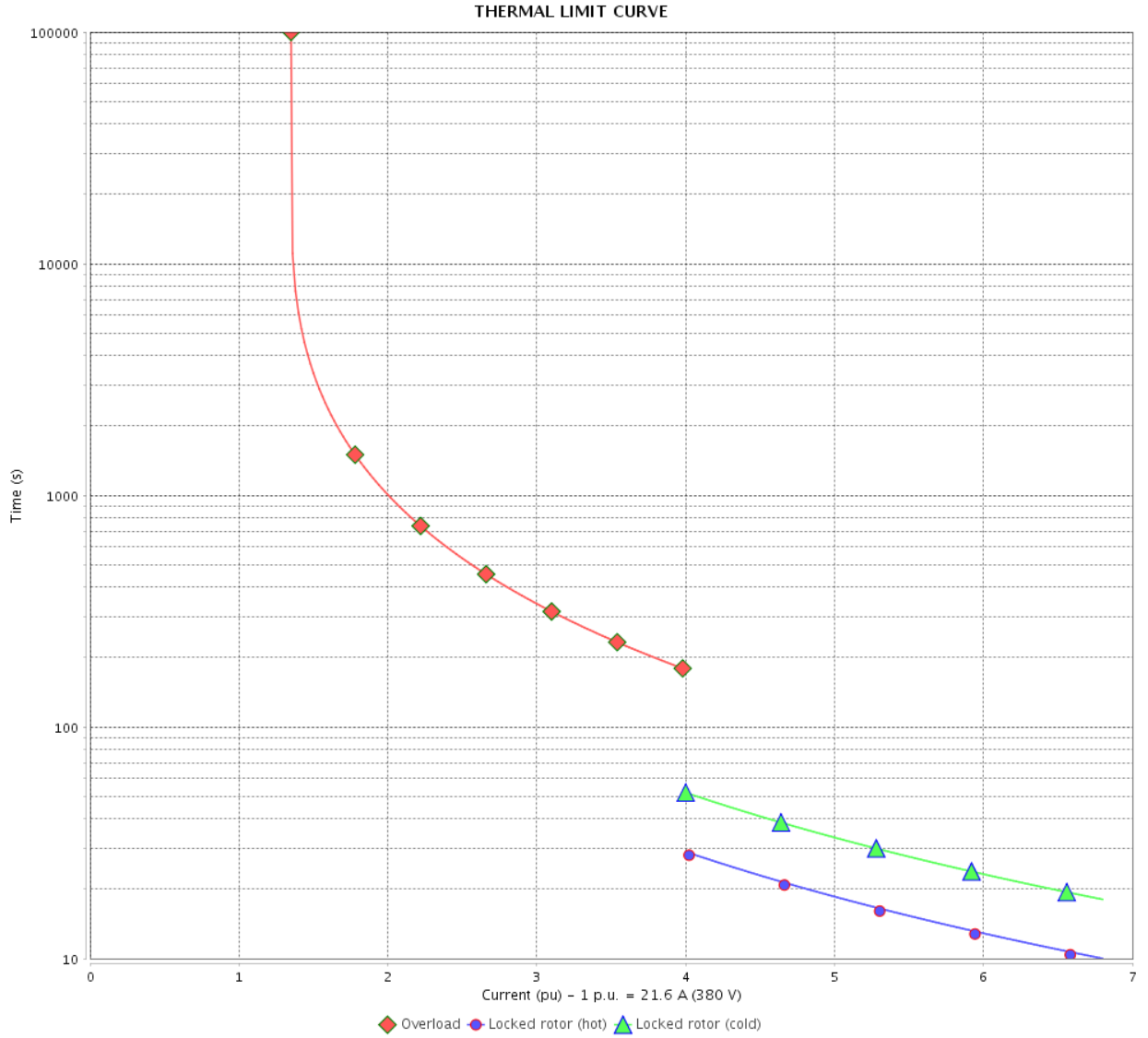
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Cooling constant

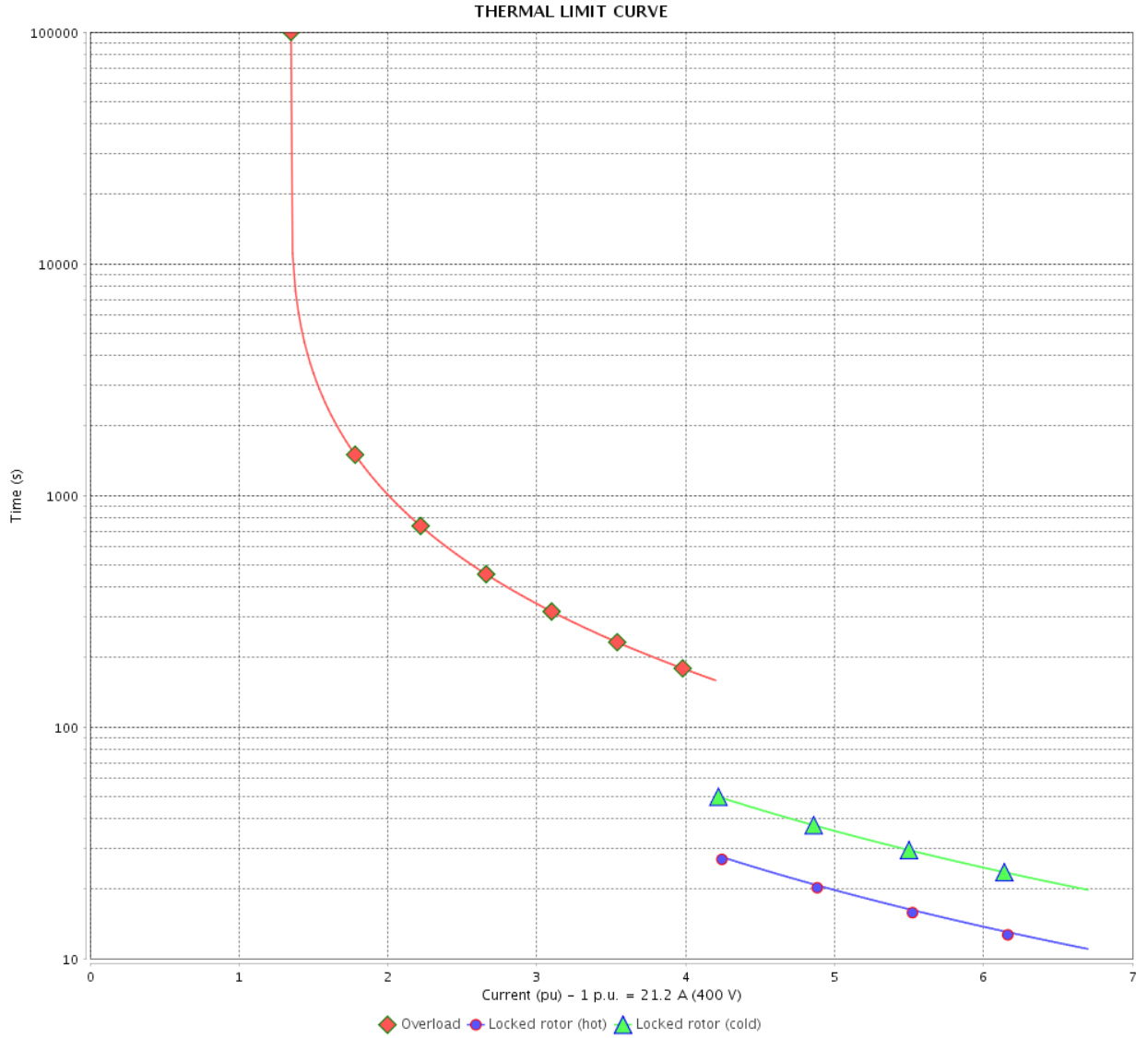
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Breakdown torque : 350 %
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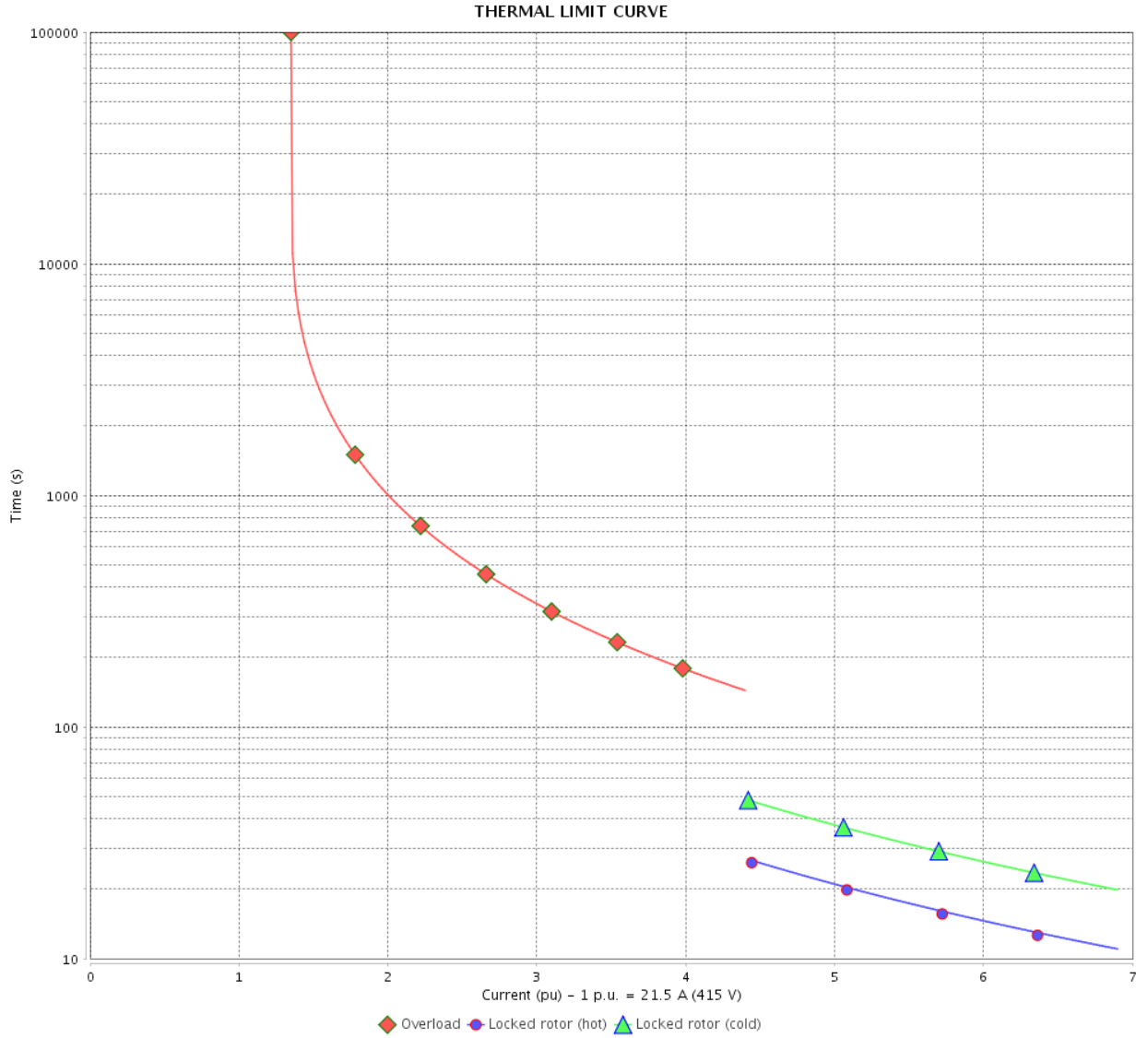
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VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage



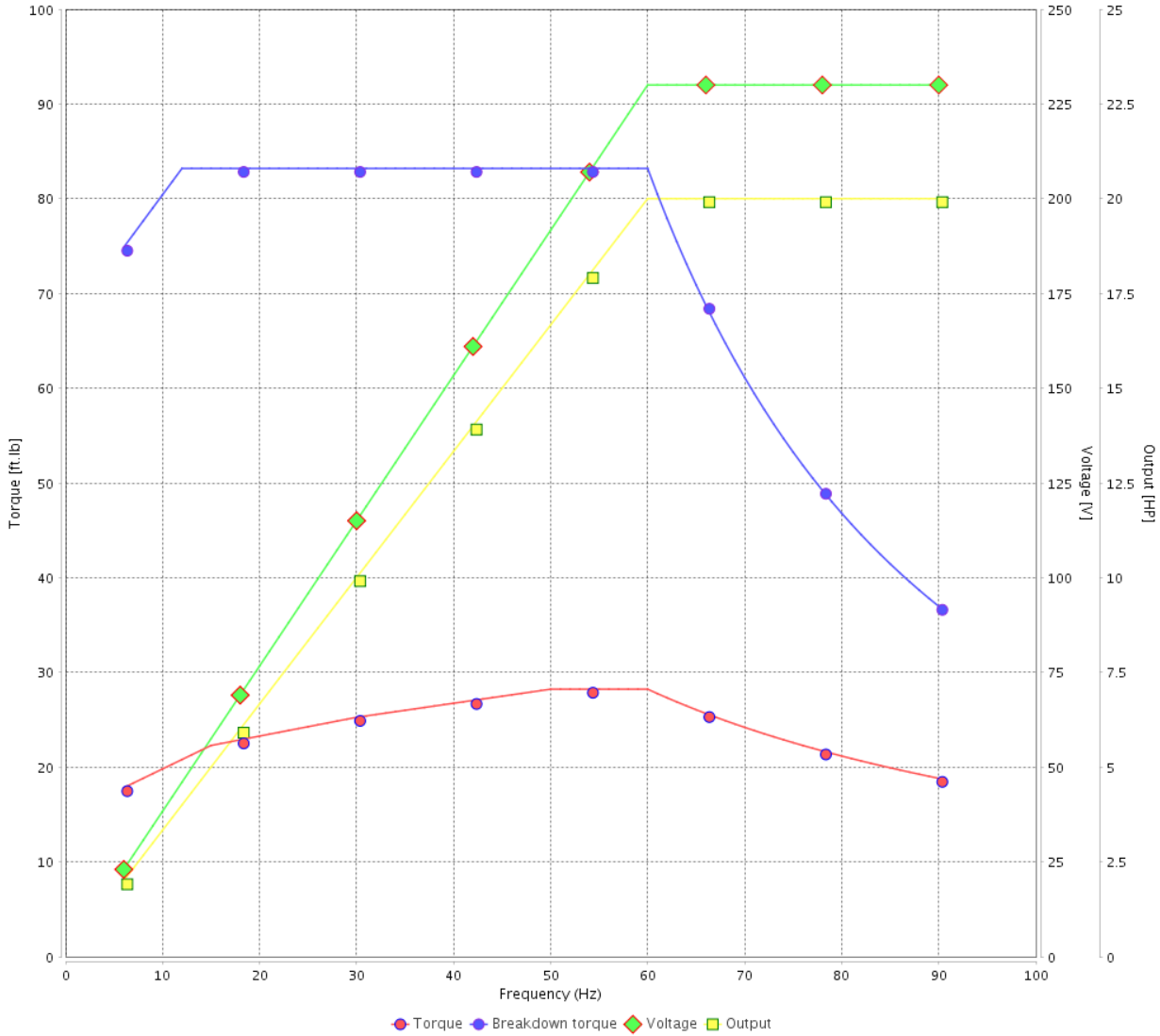
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VFD OPERATION CURVE



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VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

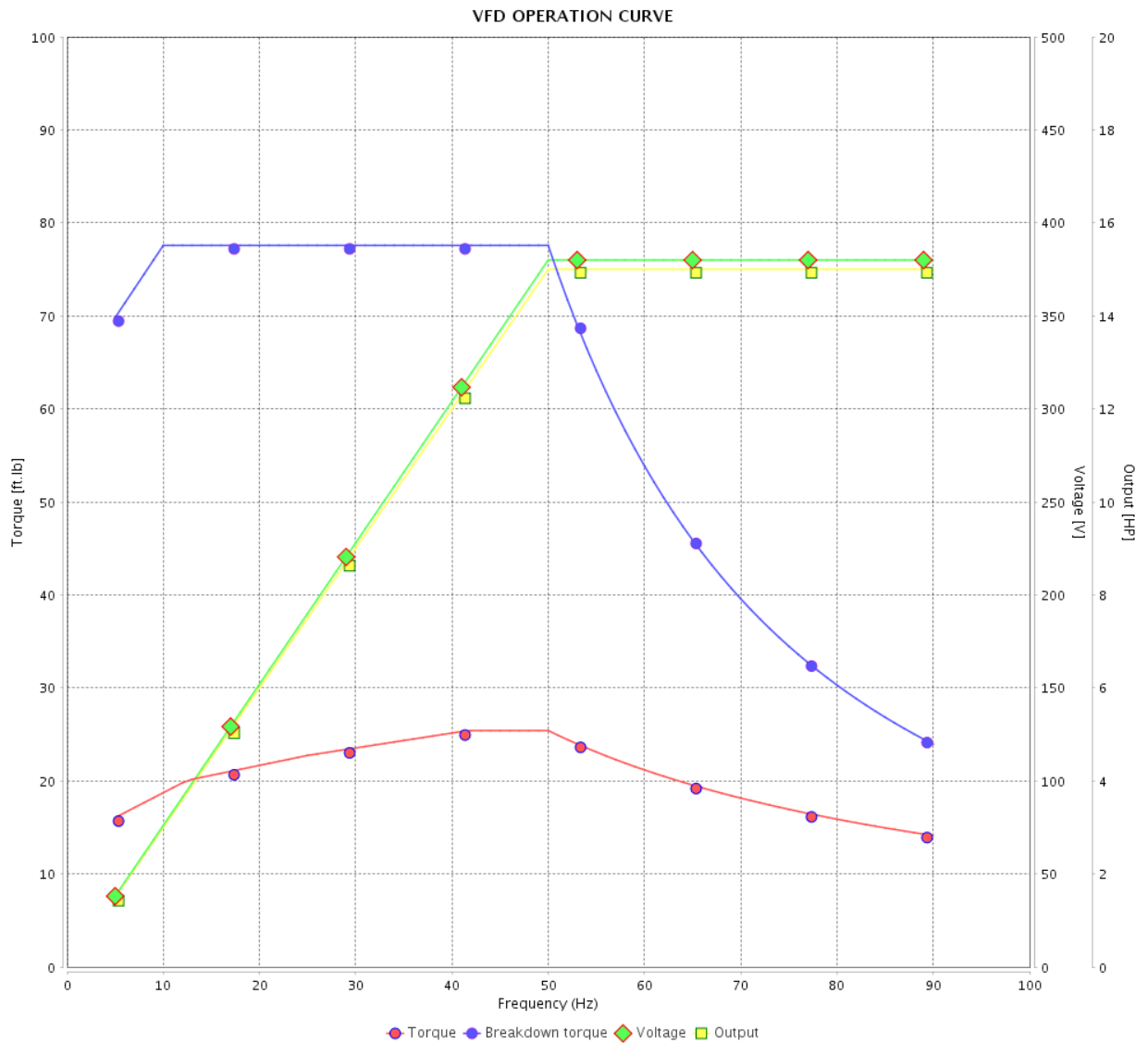


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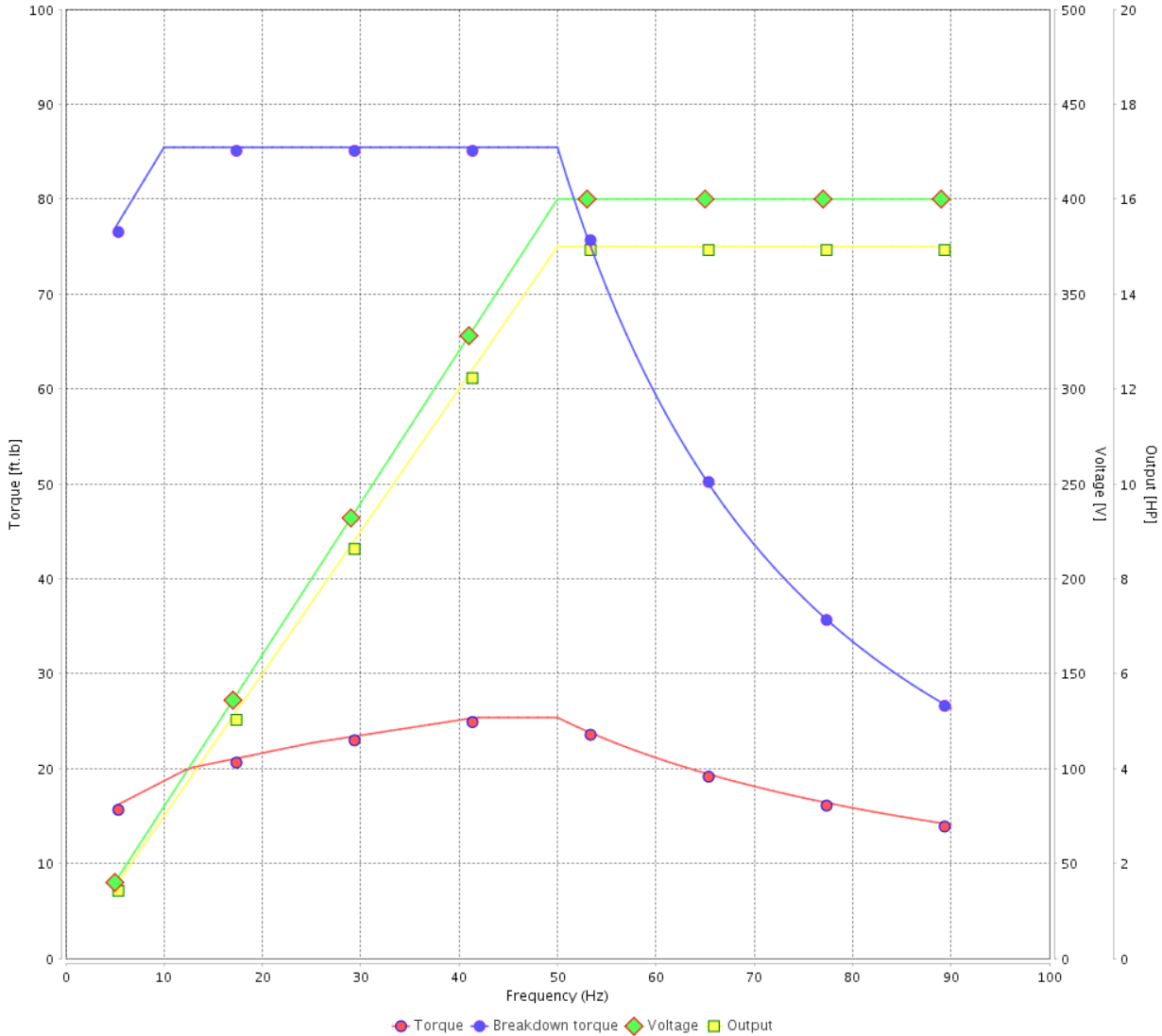
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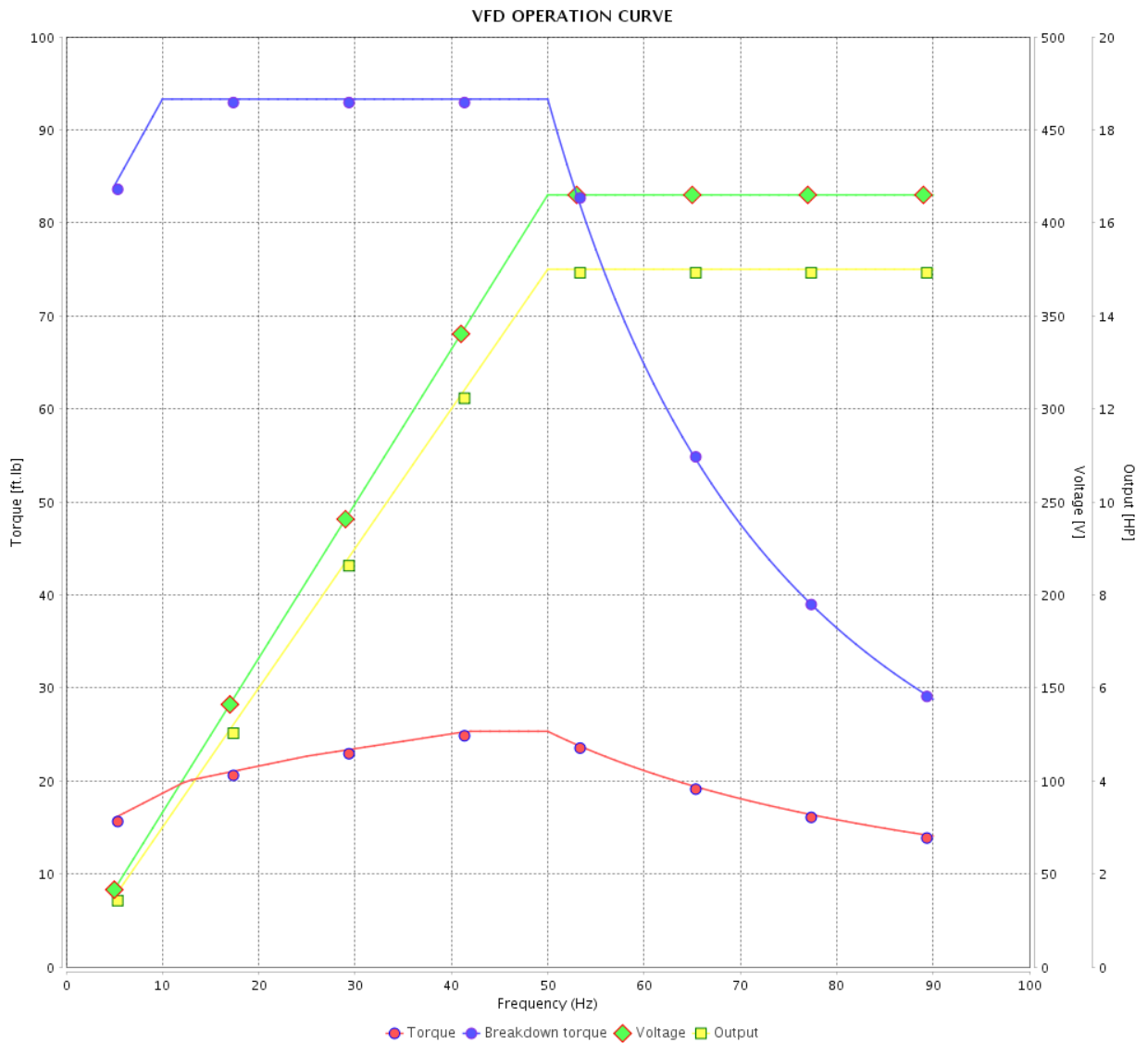


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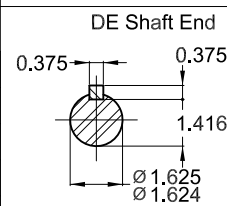
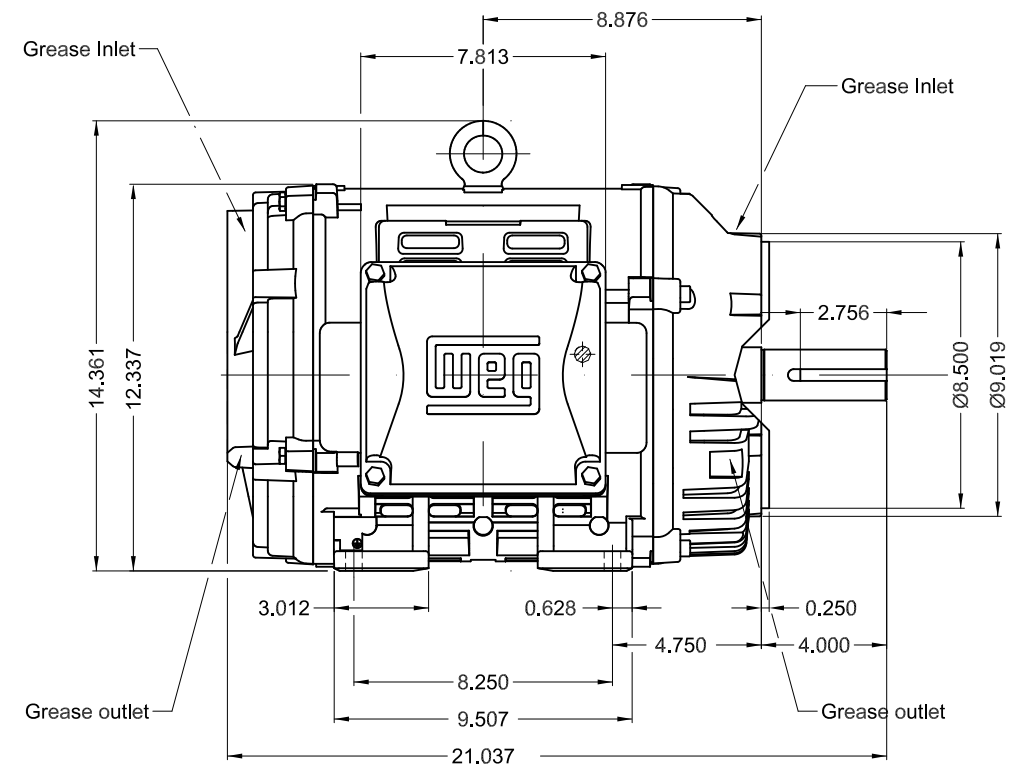
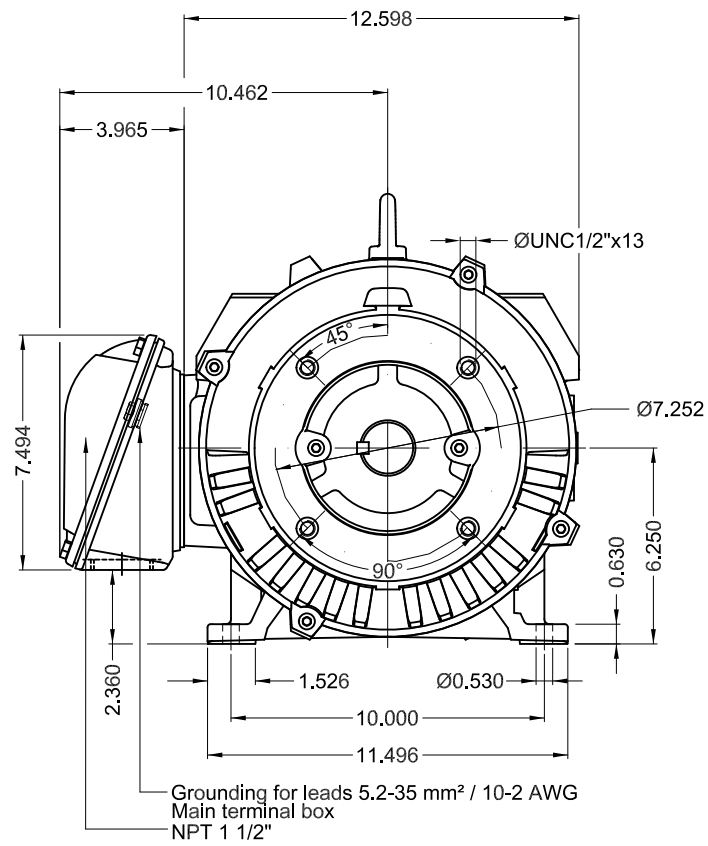


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- Bearing cap
- Color RAL 5009
- Painting plan 203A
- Mounting NEMA F-1
- Mounting B34R(D)

20 HP 02 Poles 60 Hz A

1:6

| ECM | LOC | SUMMARY OF MODIFICATIONS | EXECUTED | CHECKED | RELEASED | DATE | VER |
|----------|-----------|--|---------------------|---------|----------|------|-----|
| EXECUTED | PIRWBUSER | THREE PH. MOTOR W40 PREM. EFF. FRAME 254TC IP23 ODP | | | | | |
| CHECKED | | | | | | | |
| RELEASED | | | | | | | |
| REL DT. | | WMO Jaragua do Sul | Product Engineering | SHEET | 1 / 1 | | |

PREVIEW
WDD



WEG **W40 NEMA**
CC029A Premium
Inverter Duty Motor



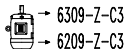
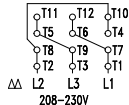
IEC 60034-1
 MOD.T01#FOXON



For 60Hz use on PWM, VT 1000:1, CT 3:1, 1.0SF

MODEL 020360T3E254TC-W40
 MADE IN BRAZIL
 14494897

| | | | | | |
|--|----------|--------------------|---------------|-----------|----------|
| PH 3 | FR 254TC | HP(kW) 20.0(15.0) | | Hz 60 | |
| V 230/460 | | A 48.6/24.3 | | RPM 3535 | DES B |
| NEMA NOM EFF 91.0 % | | INS. CL. F ΔT 80 K | | IP23 | |
| ENCL ODP | | DUTY CONT. | | AMB. 40°C | |
| CODE G | PF 0.85 | SF 1.25 | SFA 60.8/30.4 | | |
| USABLE @208V 53.7 A | | SF 1.15 | SFA 61.8 | | |
| 15HP 11kW 50Hz 380V 21.6A 2945RPM SF1.00 EFF 91.2% (IE3) | | | | ALT 1000 | m.a.s.l. |



MOBIL POLYREX EM
 13 g 20000 h

ALT 1000 m.a.s.l. 223 Lbs