

DATA SHEET

Three Phase Induction Motor - Squirrel Cage



| | | | | | |
|--|----------------------|---------------------------------------|--|---|----------------------|
| Customer | | | | | |
| Product line | | : NEMA Premium Efficiency Three-Phase | | Product code : 12977510 | |
| | | | | Catalog # : 20009ET3G449T-W22 | |
| Frame | | : 447/9T | | Cooling method : IC411 - TEFC | |
| 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 : 3055 lb | |
| Protection degree | | : IP55 | | Moment of inertia (J) : 161 sq.ft.lb | |
| Design | | : B | | | |
| Output [HP] | 200 | 150 | 150 | 150 | 150 |
| Poles | 8 | 8 | 8 | 8 | 8 |
| Frequency [Hz] | 60 | 50 | 50 | 50 | 50 |
| Rated voltage [V] | 460 | 380 | 400 | 415 | 415 |
| Rated current [A] | 254 | 230 | 227 | 228 | 228 |
| L. R. Amperes [A] | 1626 | 1495 | 1612 | 1687 | 1687 |
| LRC [A] | 6.4x(Code H) | 6.5x(Code H) | 7.1x(Code J) | 7.4x(Code K) | 7.4x(Code K) |
| No load current [A] | 115 | 113 | 125 | 135 | 135 |
| Rated speed [RPM] | 890 | 740 | 740 | 745 | 745 |
| Slip [%] | 1.11 | 1.33 | 1.33 | 0.67 | 0.67 |
| Rated torque [ft.lb] | 1180 | 1060 | 1060 | 1060 | 1060 |
| Locked rotor torque [%] | 200 | 210 | 240 | 270 | 270 |
| Breakdown torque [%] | 220 | 240 | 270 | 300 | 300 |
| Service factor | 1.15 | 1.15 | 1.15 | 1.15 | 1.15 |
| Temperature rise | 80 K | 80 K | 80 K | 80 K | 80 K |
| Locked rotor time | 23s (cold) 13s (hot) | 21s (cold) 12s (hot) | 21s (cold) 12s (hot) | 21s (cold) 12s (hot) | 21s (cold) 12s (hot) |
| Noise level ² | 66.0 dB(A) | | | | |
| Efficiency (%) | 25% | 94.4 | 94.0 | 93.4 | 92.5 |
| | 50% | 94.5 | 94.1 | 93.6 | 93.0 |
| | 75% | 95.0 | 94.5 | 94.5 | 94.1 |
| | 100% | 95.0 | 94.5 | 94.5 | 94.5 |
| Power Factor | 25% | 0.38 | 0.35 | 0.31 | 0.28 |
| | 50% | 0.62 | 0.59 | 0.54 | 0.50 |
| | 75% | 0.73 | 0.71 | 0.67 | 0.63 |
| | 100% | 0.78 | 0.77 | 0.74 | 0.71 |
| Bearing type | | Drive end : 6322 C3 | Non drive end : 6319 C3 | Foundation loads | |
| Sealing | | : WSeal | : WSeal | Max. traction : 6928 lb | |
| Lubrication interval | | : 14000 h | : 17000 h | Max. compression : 9984 lb | |
| Lubricant amount | | : 60 g | : 45 g | | |
| Lubricant type | | : Mobil Polyrex EM | | | |
| Notes | | | | | |
| 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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| Checked by | | | | Page | Revision |
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TORQUE AND CURRENT VS SPEED CURVE

Three Phase Induction Motor - Squirrel Cage



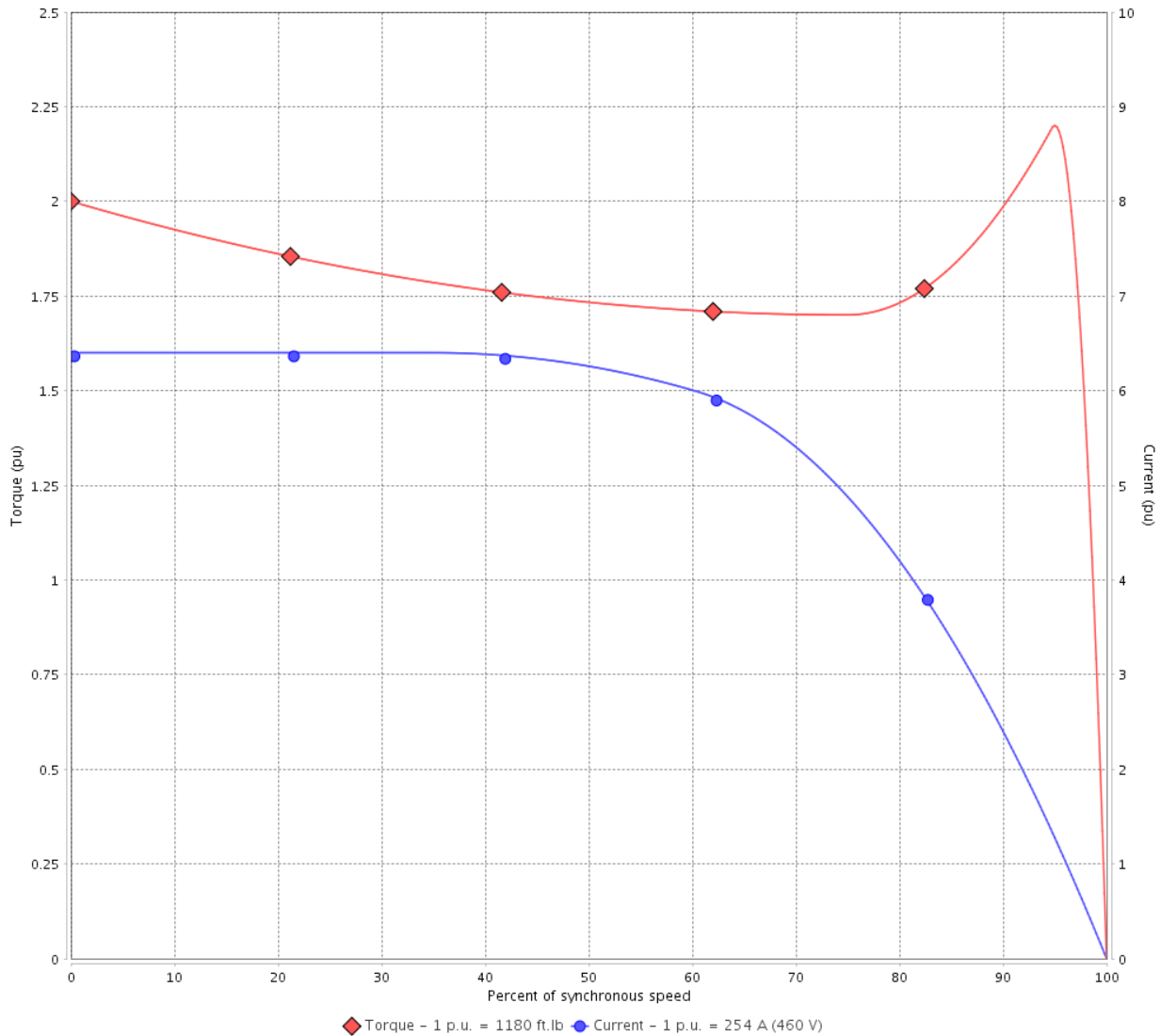
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12977510

Catalog # : 20009ET3G449T-W22

TORQUE AND CURRENT VS SPEED CURVE



Performance : 460 V 60 Hz 8P

| | | | |
|---------------------|--------------|-----------------------|----------------|
| Rated current | : 254 A | Moment of inertia (J) | : 161 sq.ft.lb |
| LRC | : 6.4 | Duty cycle | : Cont.(S1) |
| Rated torque | : 1180 ft.lb | Insulation class | : F |
| Locked rotor torque | : 200 % | Service factor | : 1.15 |
| Breakdown torque | : 220 % | Temperature rise | : 80 K |
| Rated speed | : 890 rpm | Design | : B |

Locked rotor time : 23s (cold) 13s (hot)

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| Date | 14/04/2022 | | | |

TORQUE AND CURRENT VS SPEED CURVE



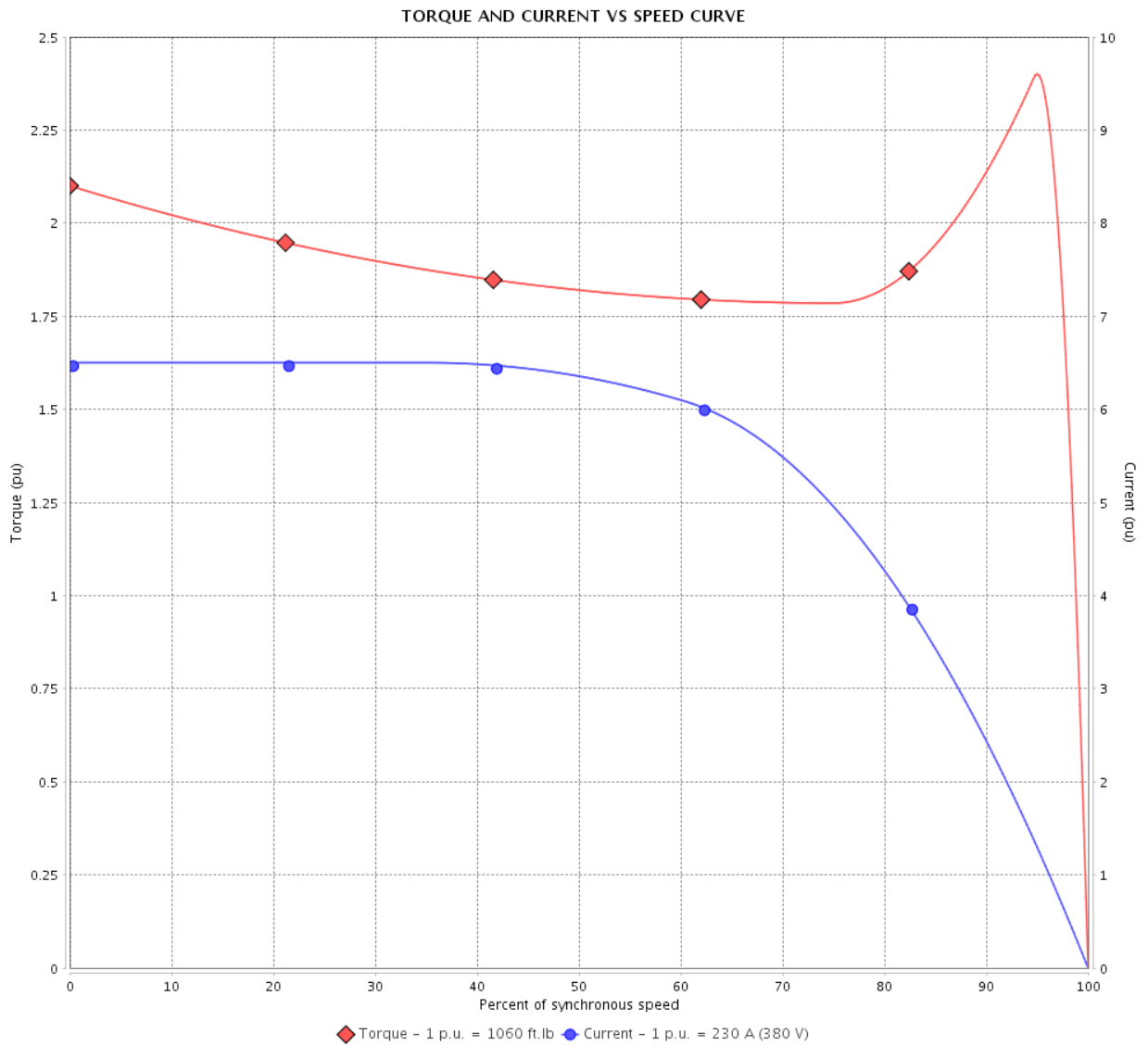
Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12977510

Catalog # : 20009ET3G449T-W22



Performance : 380 V 50 Hz 8P IE3

| | | | |
|---------------------|--------------|-----------------------|----------------|
| Rated current | : 230 A | Moment of inertia (J) | : 161 sq.ft.lb |
| LRC | : 6.5 | Duty cycle | : Cont.(S1) |
| Rated torque | : 1060 ft.lb | Insulation class | : F |
| Locked rotor torque | : 210 % | Service factor | : 1.15 |
| Breakdown torque | : 240 % | Temperature rise | : 80 K |
| Rated speed | : 740 rpm | Design | : B |

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

| Rev. | Changes Summary | Performed | Checked | Date |
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TORQUE AND CURRENT VS SPEED CURVE

Three Phase Induction Motor - Squirrel Cage



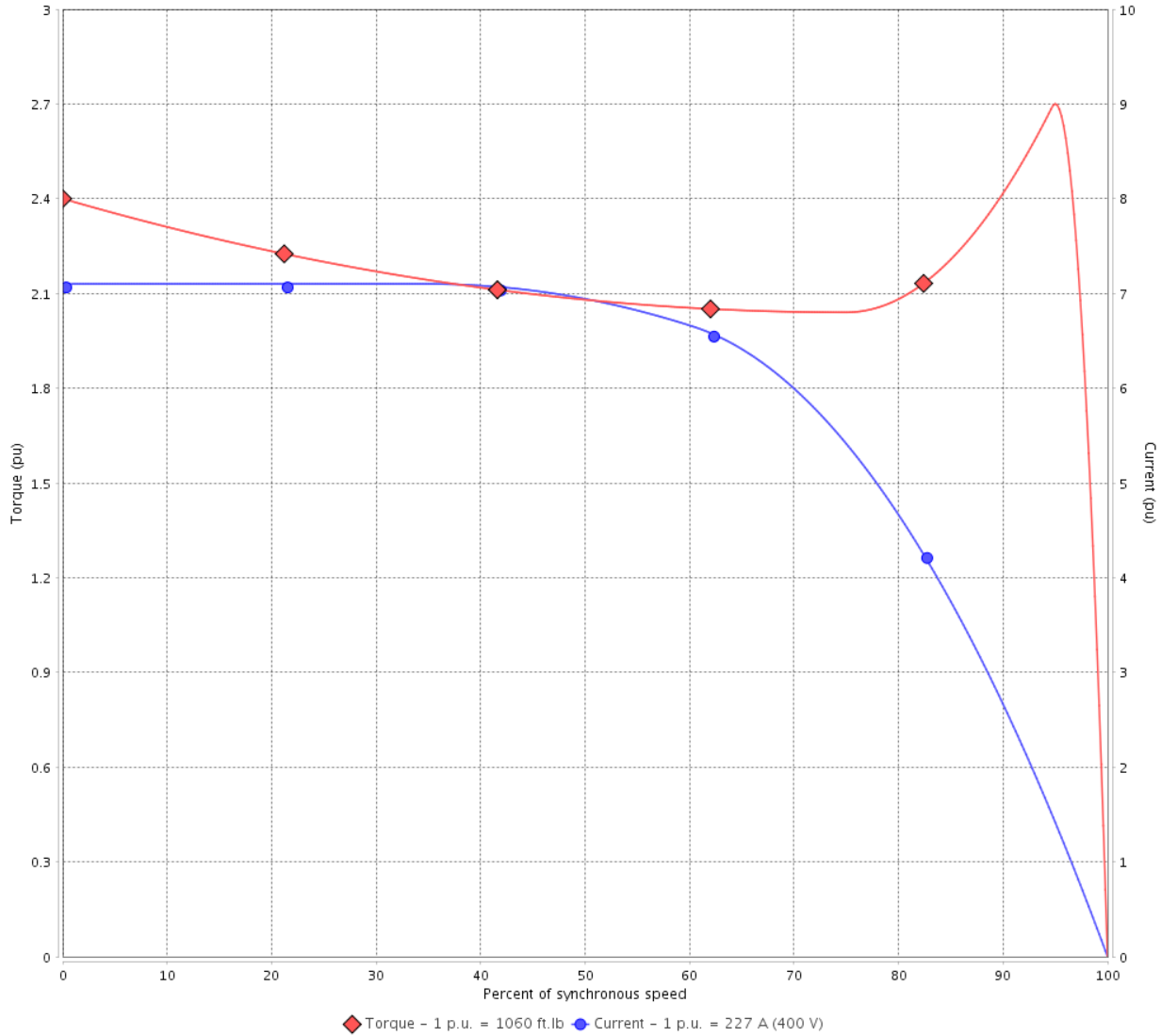
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12977510

Catalog # : 20009ET3G449T-W22

TORQUE AND CURRENT VS SPEED CURVE



Performance : 400 V 50 Hz 8P IE3

| | | | |
|---------------------|--------------|-----------------------|----------------|
| Rated current | : 227 A | Moment of inertia (J) | : 161 sq.ft.lb |
| LRC | : 7.1 | Duty cycle | : Cont.(S1) |
| Rated torque | : 1060 ft.lb | Insulation class | : F |
| Locked rotor torque | : 240 % | Service factor | : 1.15 |
| Breakdown torque | : 270 % | Temperature rise | : 80 K |
| Rated speed | : 740 rpm | Design | : B |

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

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TORQUE AND CURRENT VS SPEED CURVE



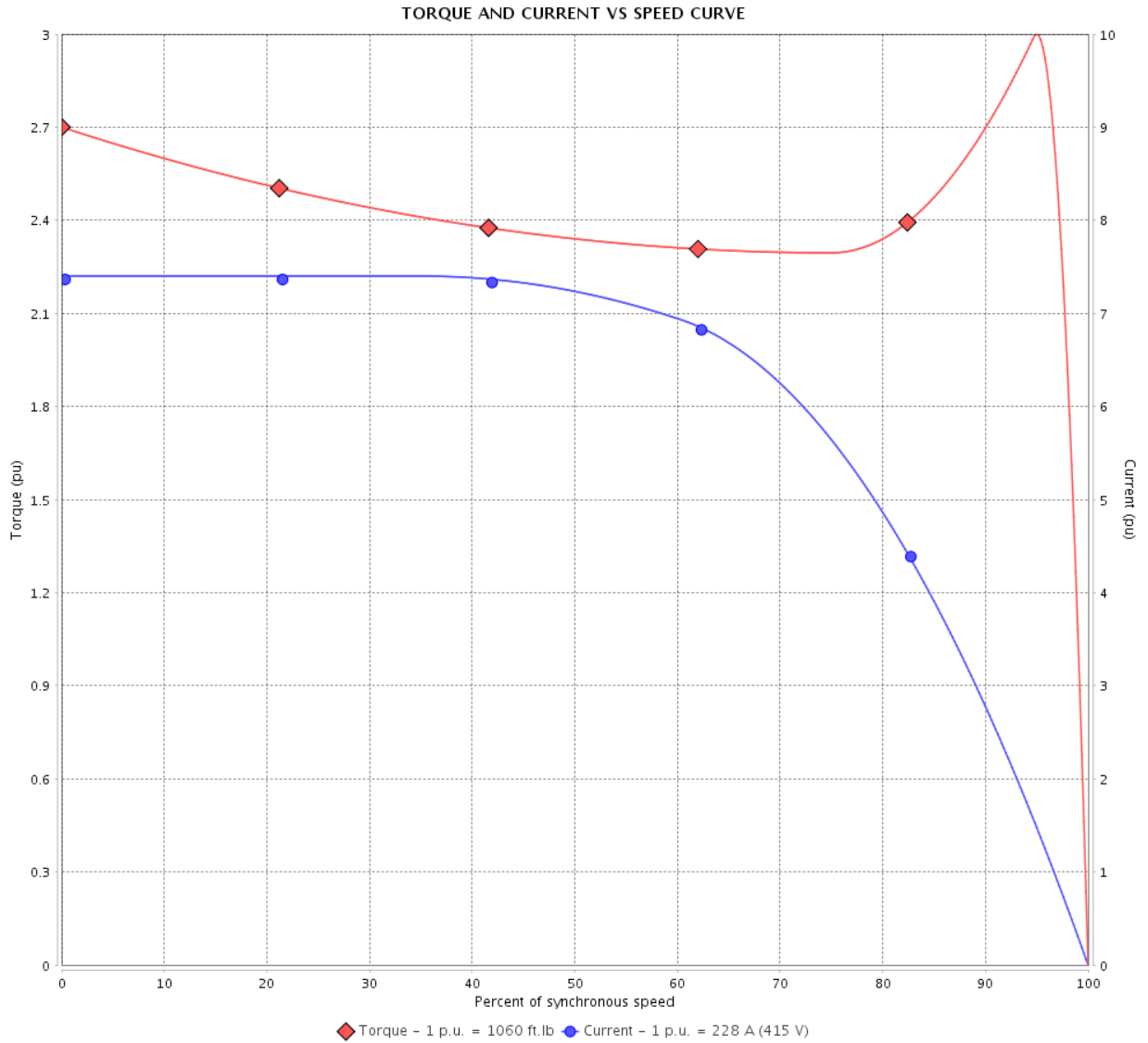
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Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12977510

Catalog # : 20009ET3G449T-W22



Performance : 415 V 50 Hz 8P IE3

| | | | |
|---------------------|--------------|-----------------------|----------------|
| Rated current | : 228 A | Moment of inertia (J) | : 161 sq.ft.lb |
| LRC | : 7.4 | Duty cycle | : Cont.(S1) |
| Rated torque | : 1060 ft.lb | Insulation class | : F |
| Locked rotor torque | : 270 % | Service factor | : 1.15 |
| Breakdown torque | : 300 % | Temperature rise | : 80 K |
| Rated speed | : 745 rpm | Design | : B |

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

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LOAD PERFORMANCE CURVE

Three Phase Induction Motor - Squirrel Cage



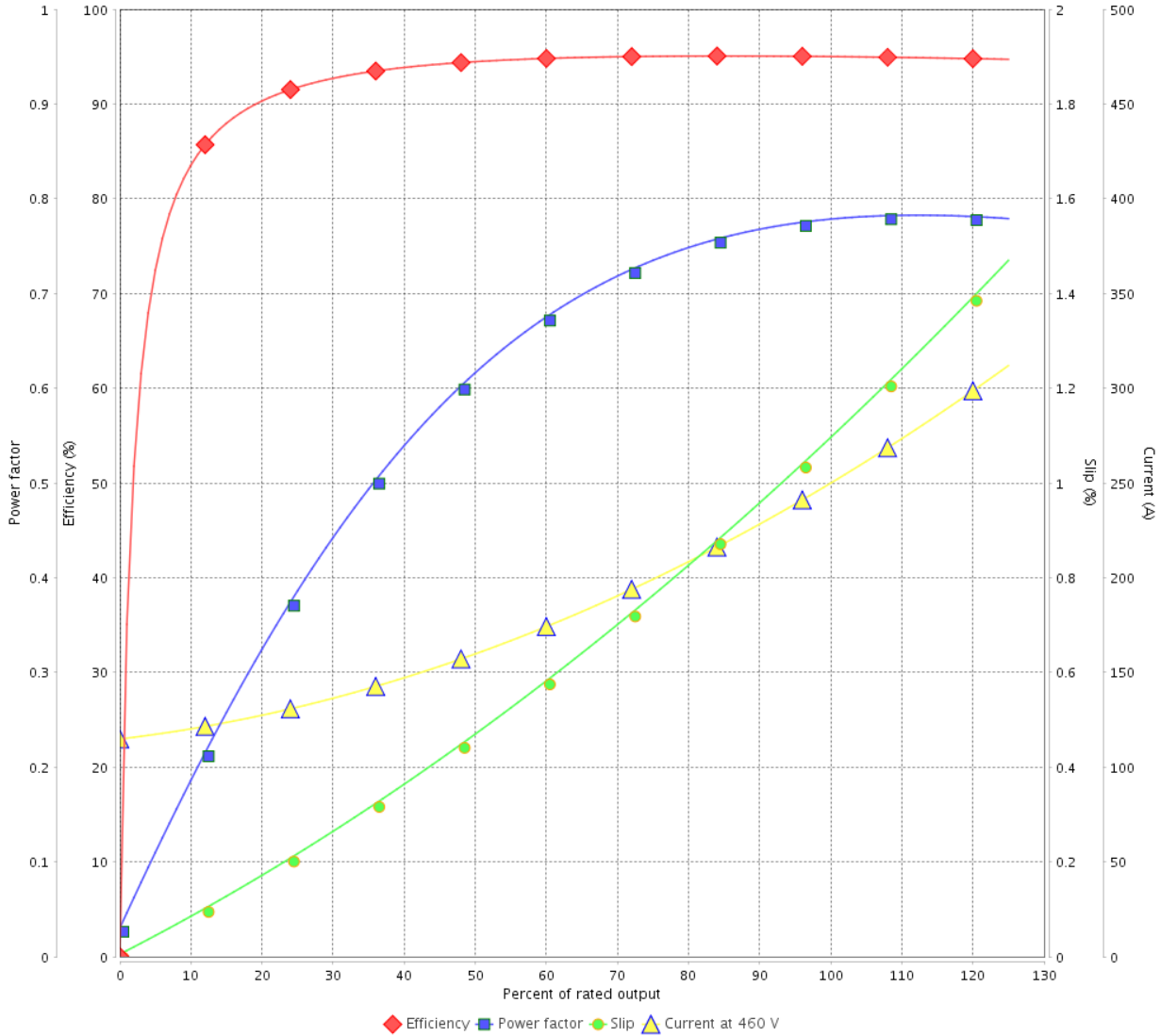
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12977510

Catalog # : 20009ET3G449T-W22

LOAD PERFORMANCE CURVE



Performance : 460 V 60 Hz 8P

| | | | |
|---------------------|--------------|-----------------------|----------------|
| Rated current | : 254 A | Moment of inertia (J) | : 161 sq.ft.lb |
| LRC | : 6.4 | Duty cycle | : Cont.(S1) |
| Rated torque | : 1180 ft.lb | Insulation class | : F |
| Locked rotor torque | : 200 % | Service factor | : 1.15 |
| Breakdown torque | : 220 % | Temperature rise | : 80 K |
| Rated speed | : 890 rpm | Design | : B |

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LOAD PERFORMANCE CURVE

Three Phase Induction Motor - Squirrel Cage

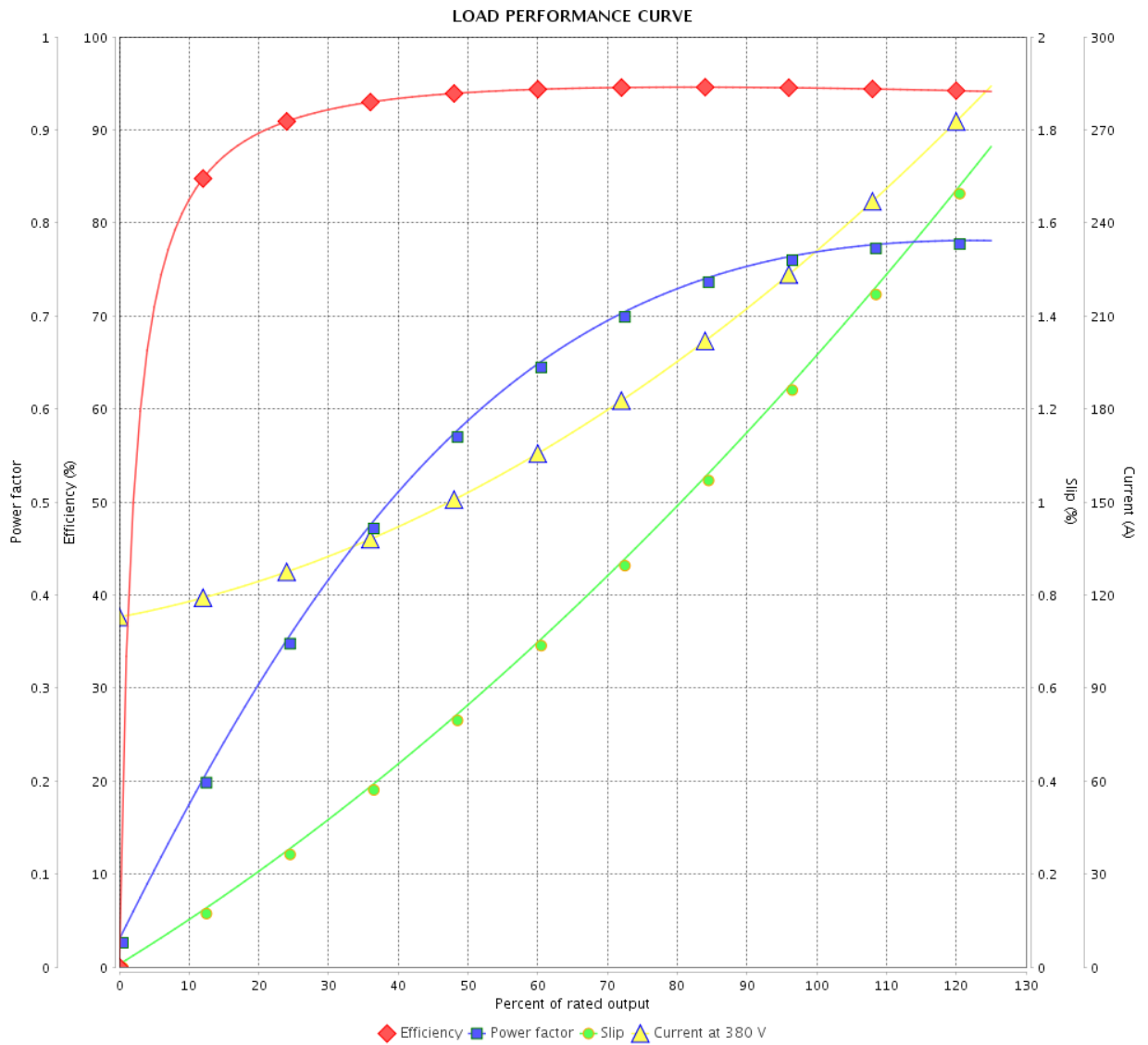


Customer : _____

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12977510

Catalog # : 20009ET3G449T-W22



Performance : 380 V 50 Hz 8P IE3

Rated current : 230 A
 LRC : 6.5
 Rated torque : 1060 ft.lb
 Locked rotor torque : 210 %
 Breakdown torque : 240 %
 Rated speed : 740 rpm

Moment of inertia (J) : 161 sq.ft.lb
 Duty cycle : Cont.(S1)
 Insulation class : F
 Service factor : 1.15
 Temperature rise : 80 K
 Design : B

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LOAD PERFORMANCE CURVE

Three Phase Induction Motor - Squirrel Cage

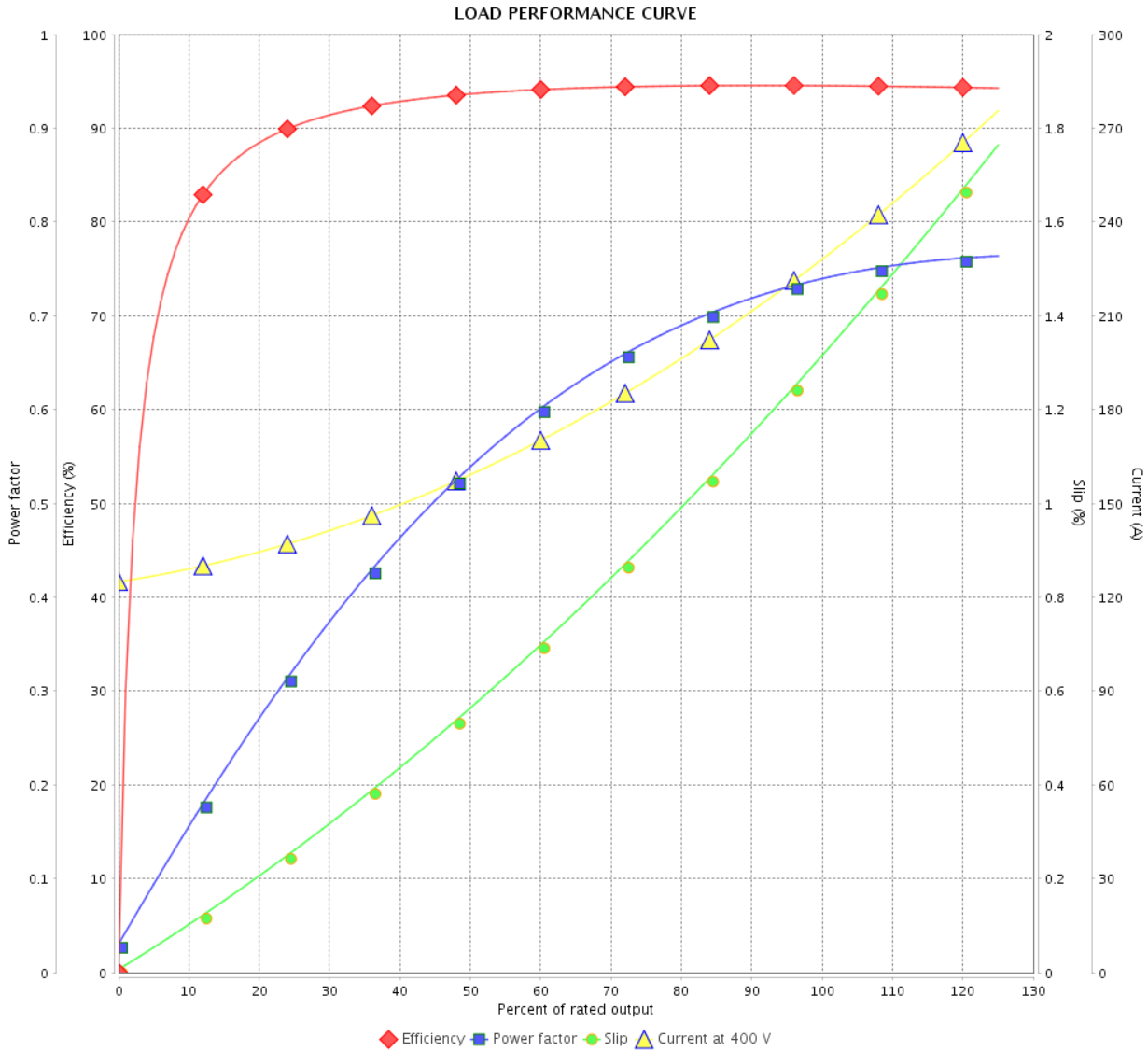


Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12977510

Catalog # : 20009ET3G449T-W22



Performance : 400 V 50 Hz 8P IE3

| | |
|-----------------------------|--------------------------------------|
| Rated current : 227 A | Moment of inertia (J) : 161 sq.ft.lb |
| LRC : 7.1 | Duty cycle : Cont.(S1) |
| Rated torque : 1060 ft.lb | Insulation class : F |
| Locked rotor torque : 240 % | Service factor : 1.15 |
| Breakdown torque : 270 % | Temperature rise : 80 K |
| Rated speed : 740 rpm | Design : B |

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Three Phase Induction Motor - Squirrel Cage

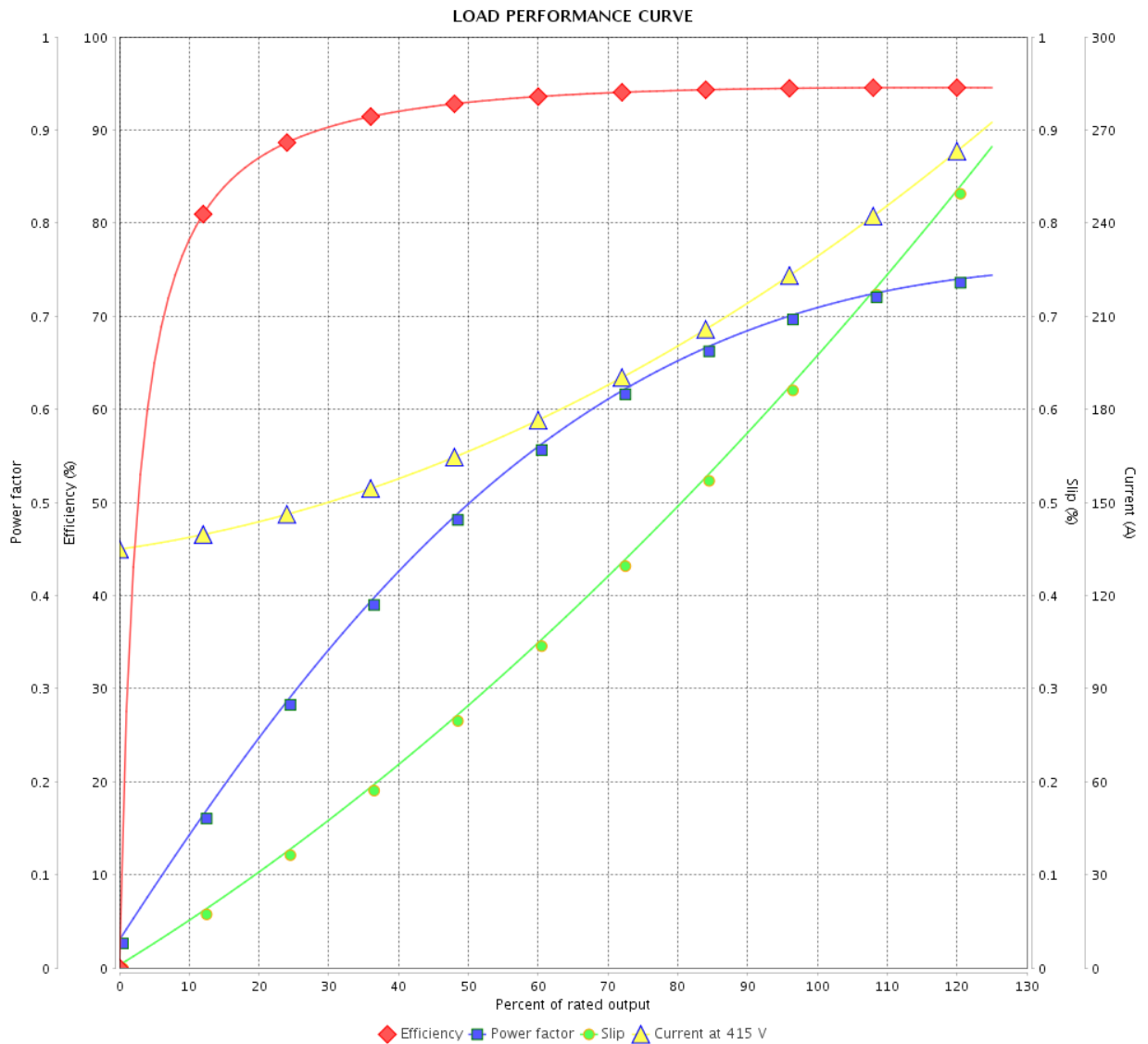


Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12977510

Catalog # : 20009ET3G449T-W22



Performance : 415 V 50 Hz 8P IE3

Rated current : 228 A
 LRC : 7.4
 Rated torque : 1060 ft.lb
 Locked rotor torque : 270 %
 Breakdown torque : 300 %
 Rated speed : 745 rpm

Moment of inertia (J) : 161 sq.ft.lb
 Duty cycle : Cont.(S1)
 Insulation class : F
 Service factor : 1.15
 Temperature rise : 80 K
 Design : B

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THERMAL LIMIT CURVE



Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : NEMA Premium Efficiency Three-Phase
Product code : 12977510
Catalog # : 20009ET3G449T-W22

Performance : 460 V 60 Hz 8P

| | | | |
|---------------------|--------------|-----------------------|----------------|
| Rated current | : 254 A | Moment of inertia (J) | : 161 sq.ft.lb |
| LRC | : 6.4 | Duty cycle | : Cont.(S1) |
| Rated torque | : 1180 ft.lb | Insulation class | : F |
| Locked rotor torque | : 200 % | Service factor | : 1.15 |
| Breakdown torque | : 220 % | Temperature rise | : 80 K |
| Rated speed | : 890 rpm | Design | : B |

Heating constant

Cooling constant

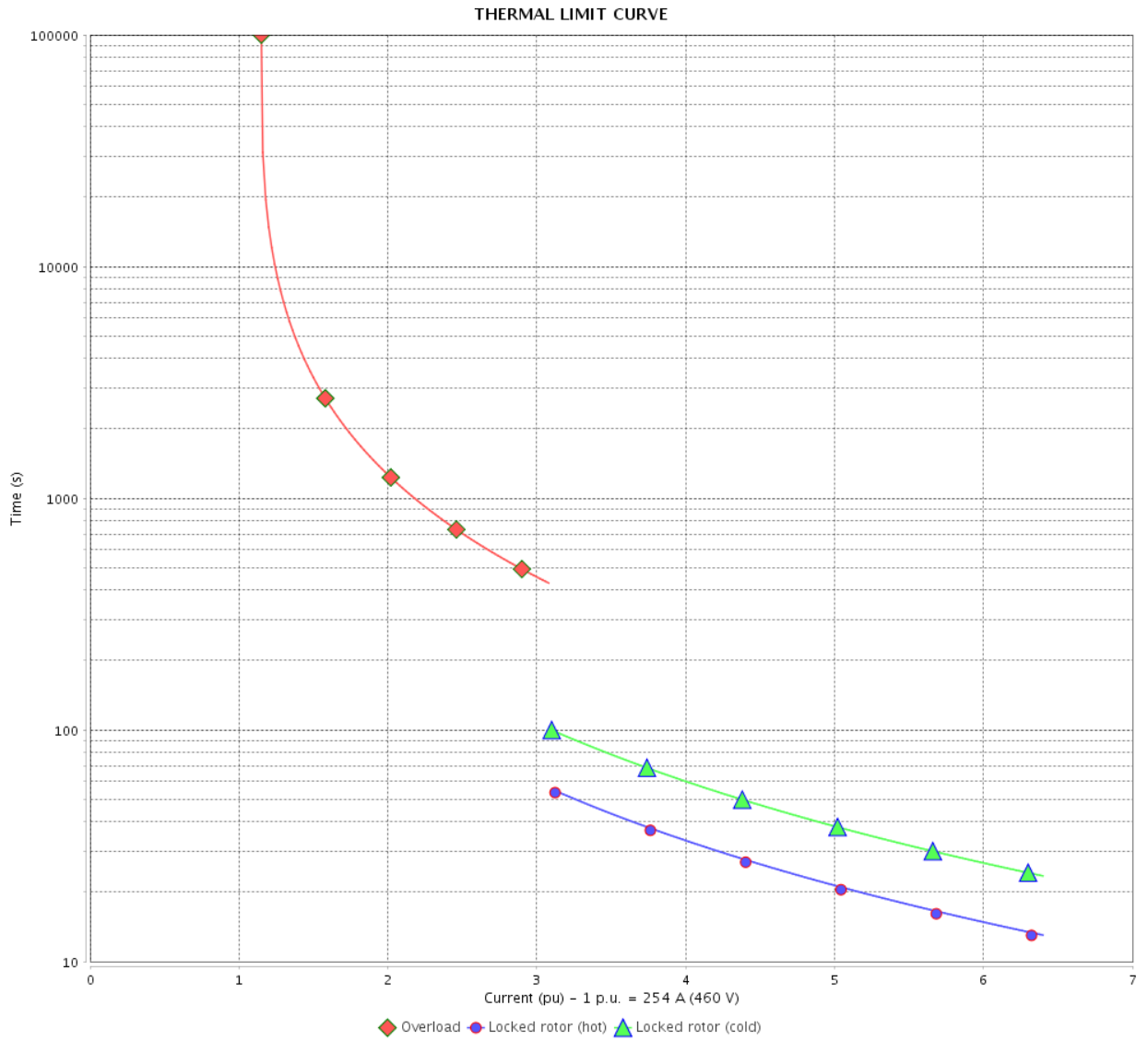
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THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



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THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



Customer :

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Product code : 12977510
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Performance : 380 V 50 Hz 8P IE3

| | | | |
|---------------------|--------------|-----------------------|----------------|
| Rated current | : 230 A | Moment of inertia (J) | : 161 sq.ft.lb |
| LRC | : 6.5 | Duty cycle | : Cont.(S1) |
| Rated torque | : 1060 ft.lb | Insulation class | : F |
| Locked rotor torque | : 210 % | Service factor | : 1.15 |
| Breakdown torque | : 240 % | Temperature rise | : 80 K |
| Rated speed | : 740 rpm | Design | : B |

Heating constant

Cooling constant

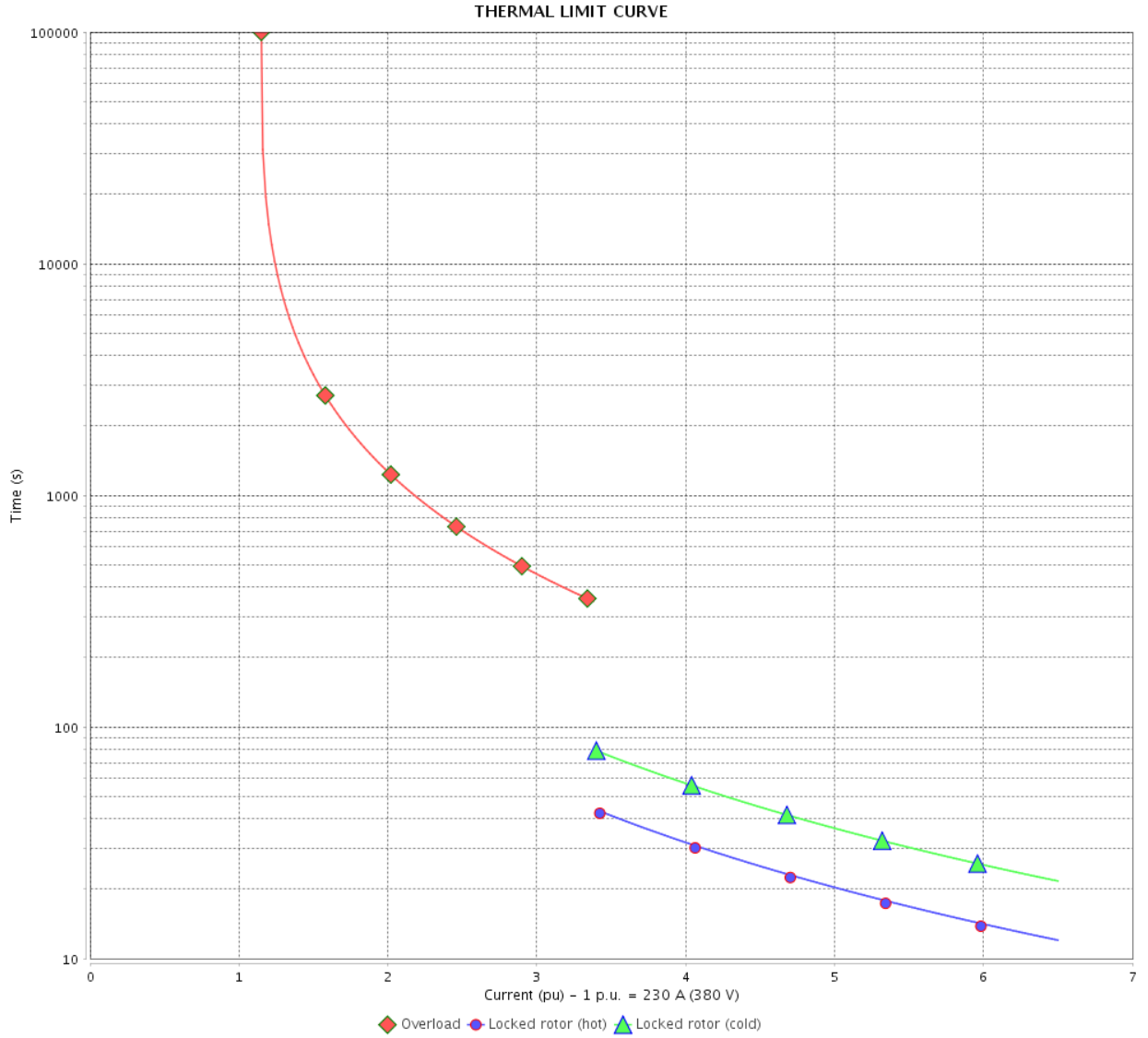
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THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



Customer : _____



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THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : NEMA Premium Efficiency Three-Phase
Product code : 12977510
Catalog # : 20009ET3G449T-W22

Performance : 400 V 50 Hz 8P IE3

| | | | |
|---------------------|--------------|-----------------------|----------------|
| Rated current | : 227 A | Moment of inertia (J) | : 161 sq.ft.lb |
| LRC | : 7.1 | Duty cycle | : Cont.(S1) |
| Rated torque | : 1060 ft.lb | Insulation class | : F |
| Locked rotor torque | : 240 % | Service factor | : 1.15 |
| Breakdown torque | : 270 % | Temperature rise | : 80 K |
| Rated speed | : 740 rpm | Design | : B |

Heating constant

Cooling constant

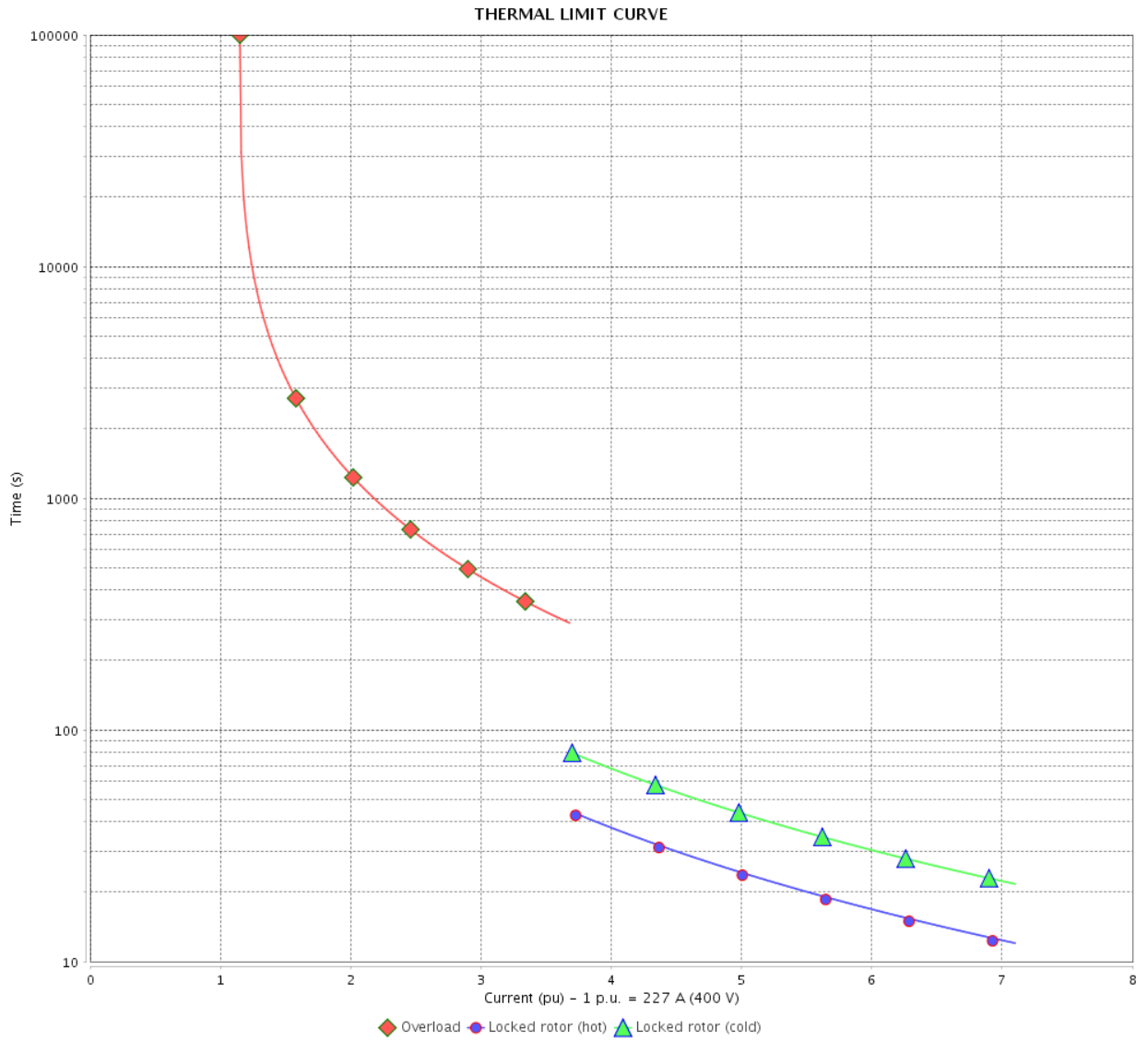
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THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



Customer : _____



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THERMAL LIMIT CURVE



Three Phase Induction Motor - Squirrel Cage

Customer :

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Product code : 12977510
Catalog # : 20009ET3G449T-W22

Performance : 415 V 50 Hz 8P IE3

| | | | |
|---------------------|--------------|-----------------------|----------------|
| Rated current | : 228 A | Moment of inertia (J) | : 161 sq.ft.lb |
| LRC | : 7.4 | Duty cycle | : Cont.(S1) |
| Rated torque | : 1060 ft.lb | Insulation class | : F |
| Locked rotor torque | : 270 % | Service factor | : 1.15 |
| Breakdown torque | : 300 % | Temperature rise | : 80 K |
| Rated speed | : 745 rpm | Design | : B |

Heating constant

Cooling constant

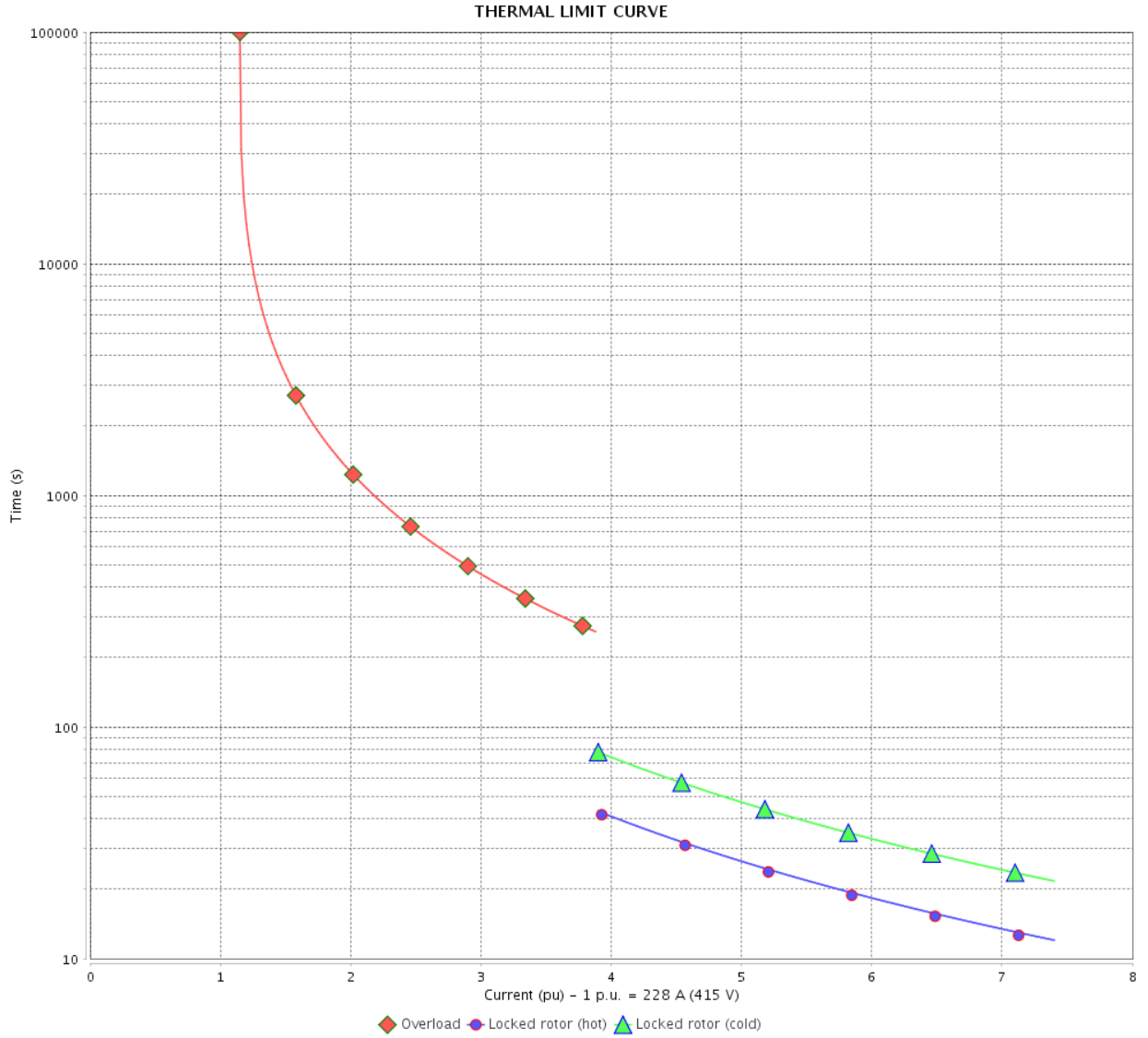
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THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



Customer : _____



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VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage



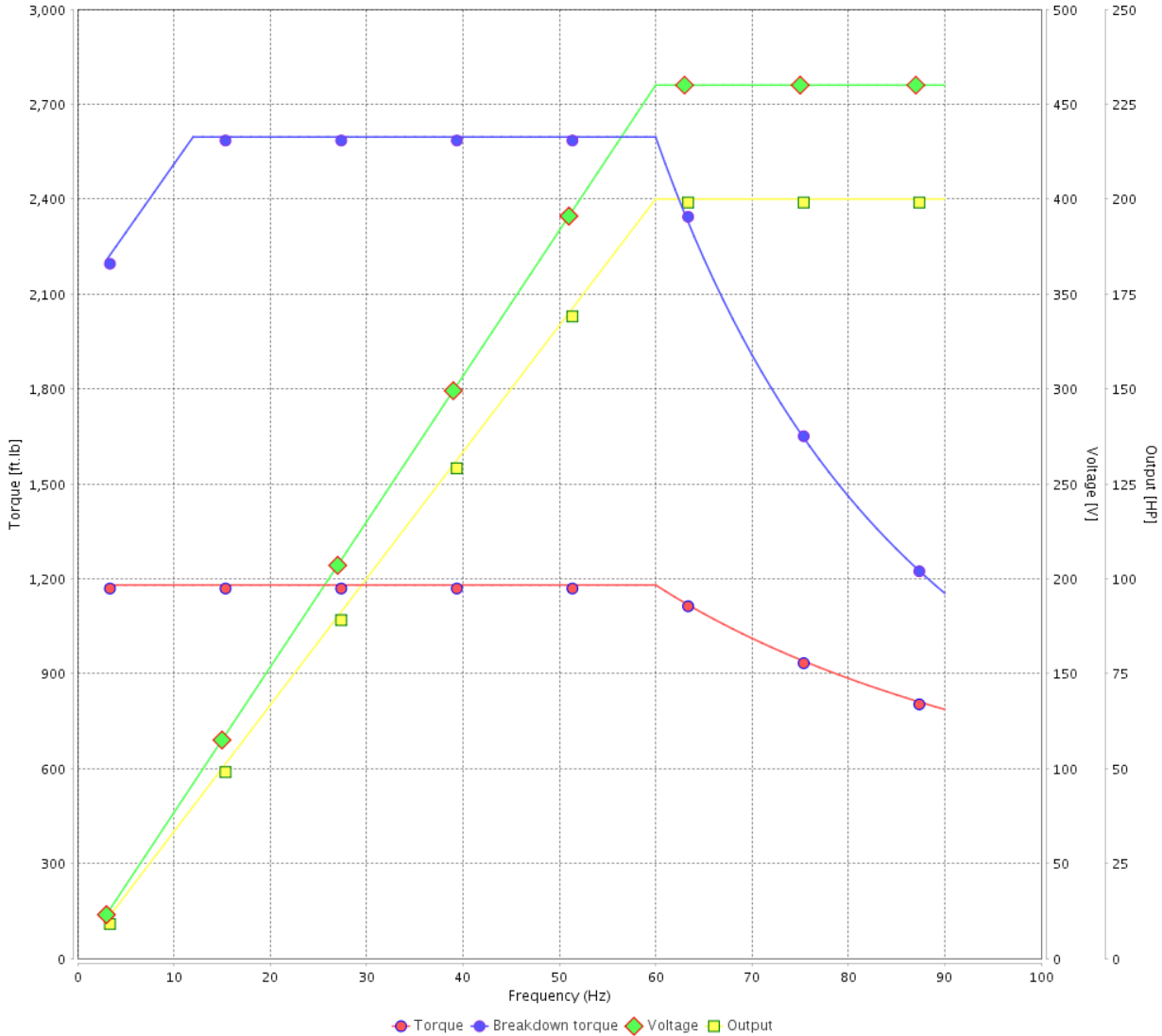
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VFD OPERATION CURVE



Performance : 460 V 60 Hz 8P

Rated current : 254 A
 LRC : 6.4
 Rated torque : 1180 ft.lb
 Locked rotor torque : 200 %
 Breakdown torque : 220 %
 Rated speed : 890 rpm

Moment of inertia (J) : 161 sq.ft.lb
 Duty cycle : Cont.(S1)
 Insulation class : F
 Service factor : 1.15
 Temperature rise : 80 K
 Design : B

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VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

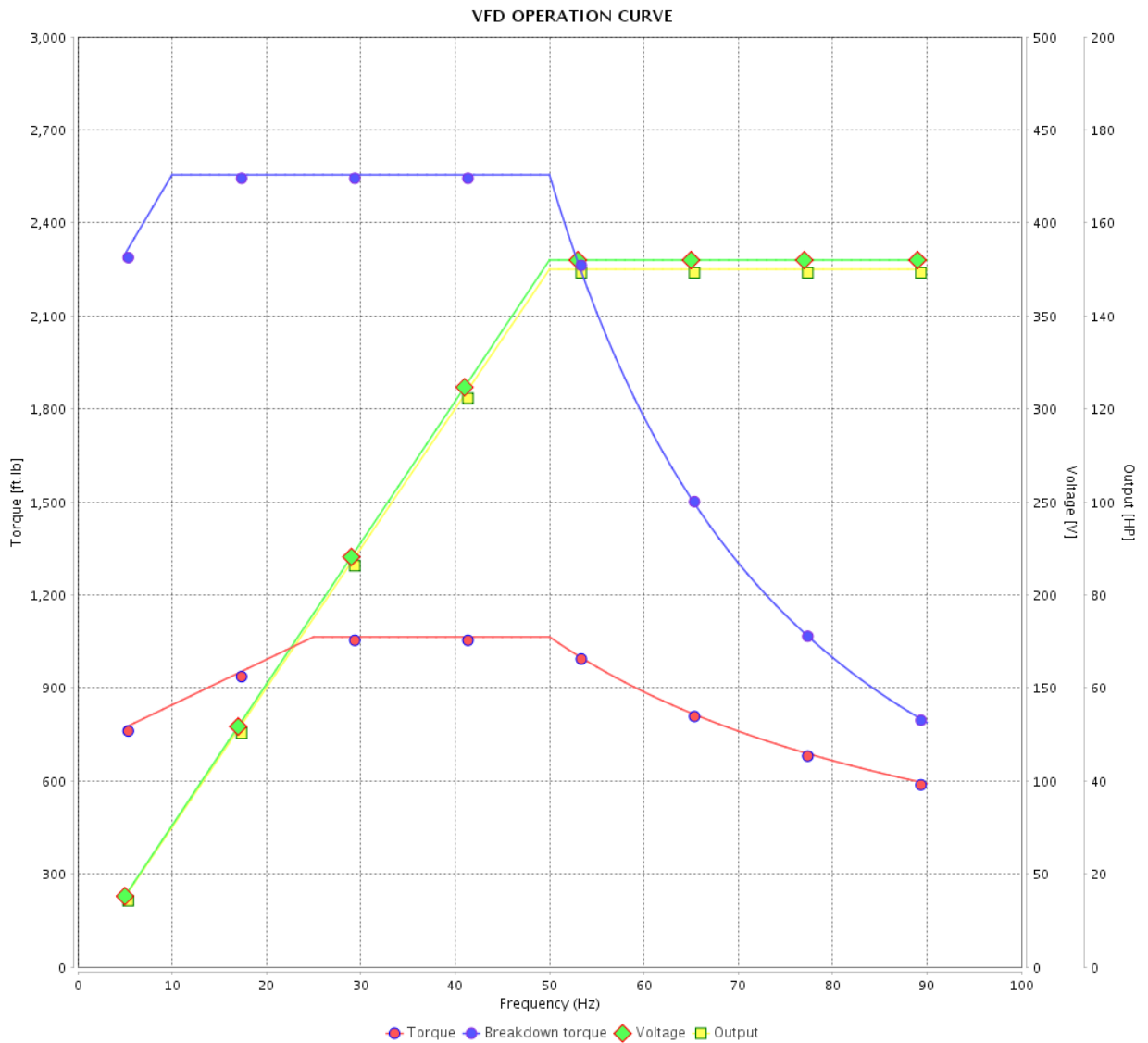


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Performance : 380 V 50 Hz 8P IE3

Rated current : 230 A
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 Rated torque : 1060 ft.lb
 Locked rotor torque : 210 %
 Breakdown torque : 240 %
 Rated speed : 740 rpm

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 Service factor : 1.15
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VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

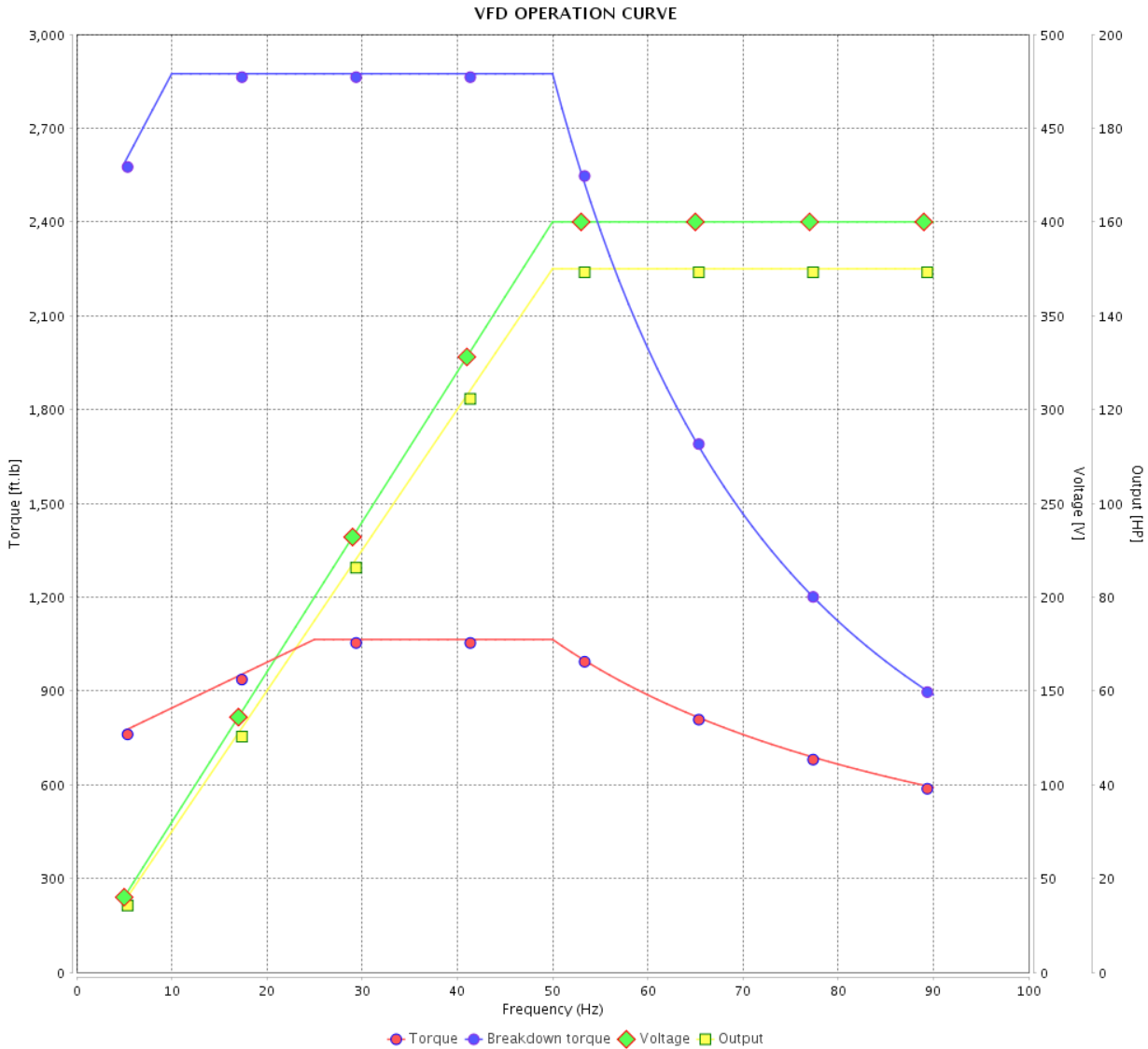


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Product line : NEMA Premium Efficiency Three-Phase

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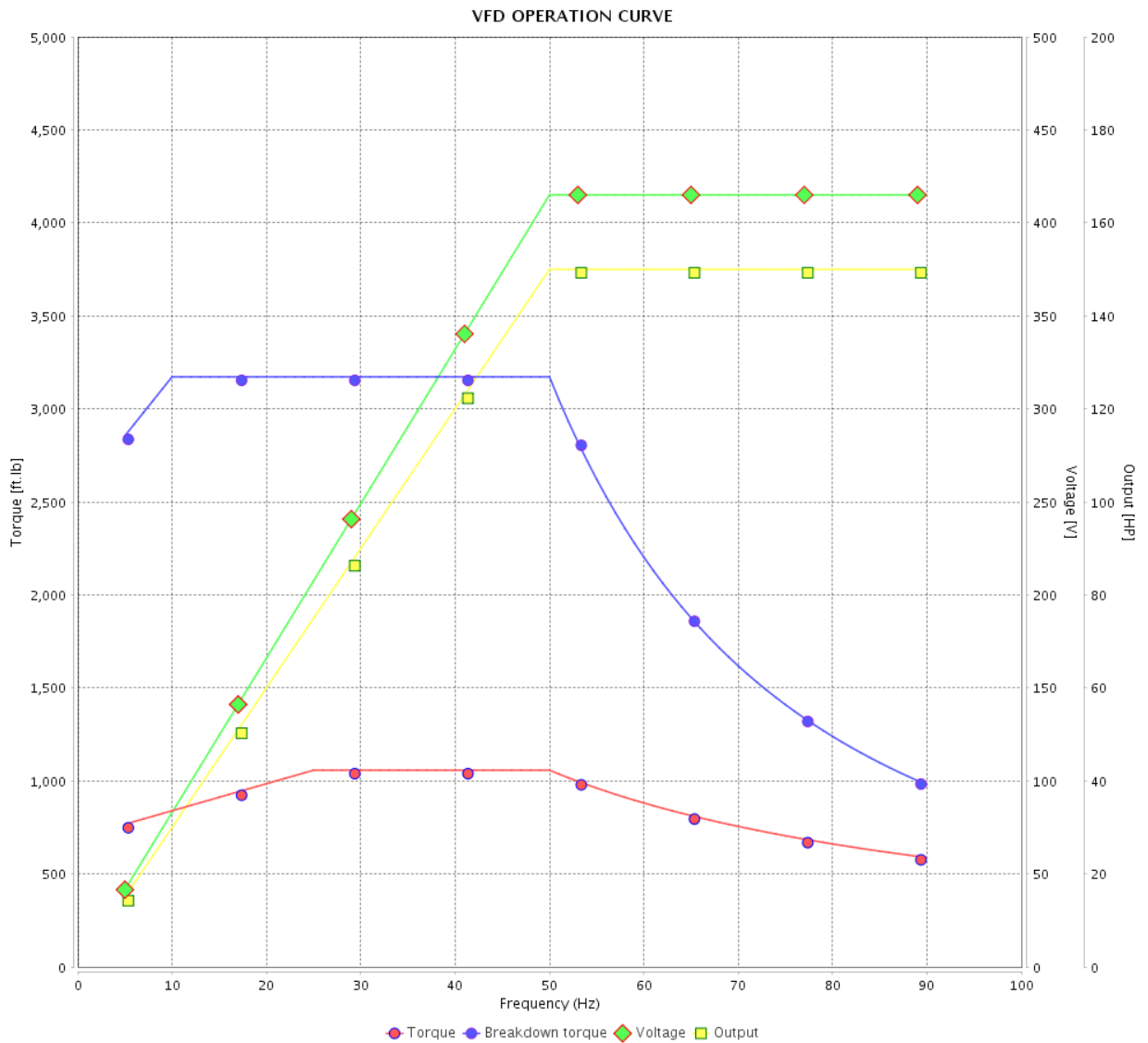
VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage



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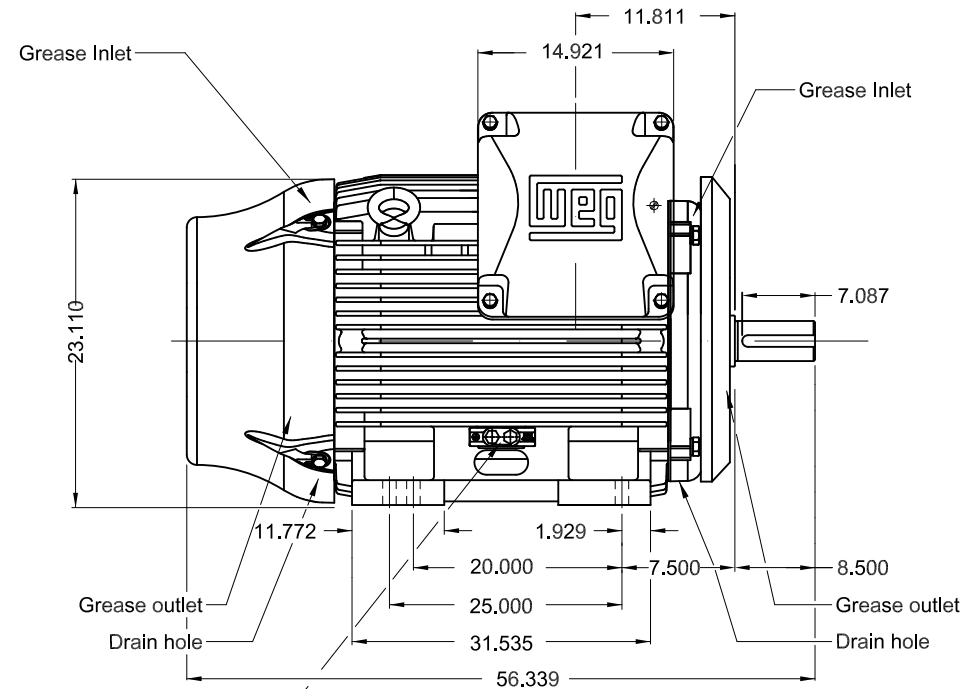
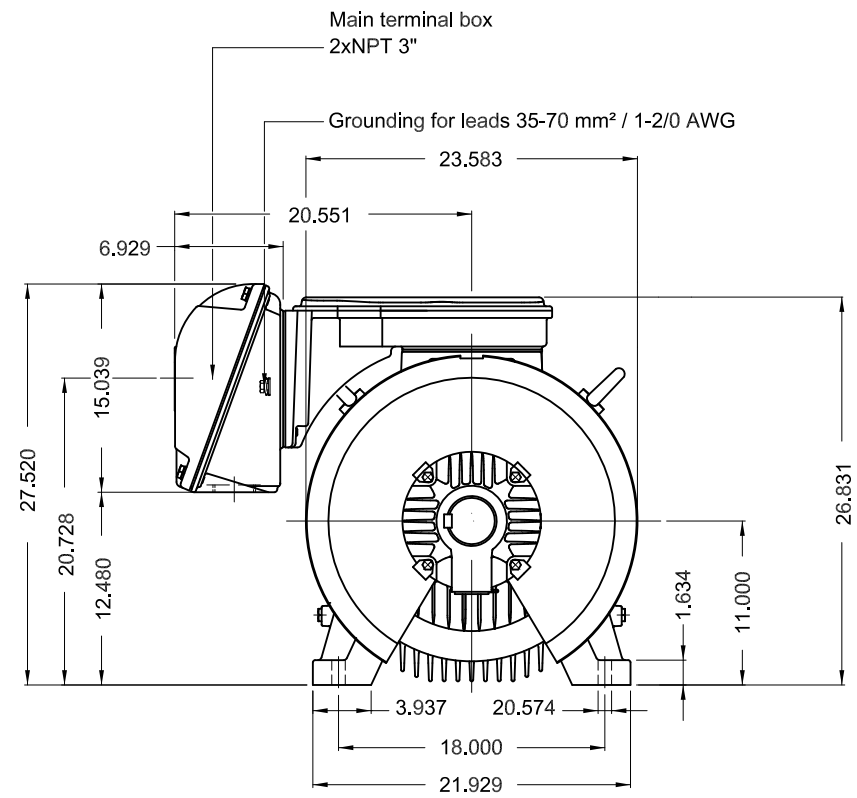
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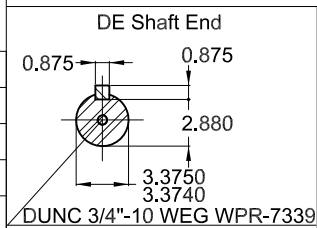


Grounding for leads 25-185 mm² / 3AWG-350MCM

200 HP 08 Poles 60 Hz

A

- Drive-End Air Deflector
- Color RAL 5009
- Painting plan 203A
- Mounting NEMA F-1
- Mounting B3R(D)



| ECM | LOC | SUMMARY OF MODIFICATIONS | EXECUTED | CHECKED | RELEASED | DATE | VER |
|----------|-----------|--------------------------------|---------------------|---------|----------|------|-----|
| EXECUTED | PIRWBUSER | THREE PH. MOTOR W22 PREM. EFF. | | | | | |
| CHECKED | | FRAME 447/9T IP55 TEFC | | | | | |
| RELEASED | | | | | | | |
| REL DT. | WMO | Jaragua do Sul | Product Engineering | SHEET | 1 / 1 | | |

PREVIEW
WDD

