

# DATA SHEET

## Three Phase Induction Motor - Squirrel Cage



|  |                       |                             |  |         |          |
|--|-----------------------|-----------------------------|--|---------|----------|
| Customer :   |                       |                             |  |         |          |
| Product line : Standard Efficiency Three-Phase   |                       | Product code : 14796867     |  |         |          |
|  |                       | Catalog # : .2536ES3E56C-S  |  |         |          |
| Frame  | : 56C                 | Cooling method              | : IC411 - TEFC   |         |          |
| Insulation class   | : F                   | Mounting                    | : F-1  |         |          |
| Duty cycle   | : Cont.(S1)           | Rotation <sup>1</sup>       | : Both (CW and CCW)  |         |          |
| Ambient temperature  | : -20°C to +40°C      | Starting method             | : Direct On Line   |         |          |
| Altitude   | : 1000 m.a.s.l.       | Approx. weight <sup>3</sup> | : 18.3 lb  |         |          |
| Protection degree  | : IP55                | Moment of inertia (J)       | : 0.0389 sq.ft.lb  |         |          |
| Output [HP]  | 0.25                  | 0.25                        | 0.25   |         |          |
| Poles  | 2                     | 2                           | 2  |         |          |
| Frequency [Hz]   | 60                    | 50                          | 50   |         |          |
| Rated voltage [V]  | 208-230/460           | 190-220/380                 | 415  |         |          |
| Rated current [A]  | 1.01-0.914/0.457      | 0.938-0.810/0.469           | 0.441  |         |          |
| L. R. Amperes [A]  | 6.46-5.85/2.92        | 5.07-4.37/2.53              | 2.78   |         |          |
| LRC [A]  | 6.4x(Code L)          | 5.4x(Code H)                | 6.3x(Code J)   |         |          |
| No load current [A]  | 0.431-0.500/0.250     | 0.420-0.363/0.210           | 0.234  |         |          |
| Rated speed [RPM]  | 3475                  | 2860                        | 2885   |         |          |
| Slip [%]   | 3.47                  | 4.67                        | 3.83   |         |          |
| Rated torque [ft.lb]   | 0.378                 | 0.459                       | 0.455  |         |          |
| Locked rotor torque [%]  | 250                   | 190                         | 240  |         |          |
| Breakdown torque [%]   | 300                   | 250                         | 310  |         |          |
| Service factor   |                       | 1.15                        | 1.15   |         |          |
| Temperature rise   | 80 K                  | 80 K                        | 80 K   |         |          |
| Locked rotor time  | 108s (cold) 60s (hot) | 133s (cold) 74s (hot)       | 111s (cold) 62s (hot)  |         |          |
| Noise level <sup>2</sup>   | 68.0 dB(A)            | 65.0 dB(A)                  | 65.0 dB(A)   |         |          |
| Efficiency (%)   | 25%                   | 42.6                        | 52.9   | 51.5    |          |
|  | 50%                   | 46.0                        | 55.3   | 54.3    |          |
|  | 75%                   | 52.5                        | 62.0   | 61.7    |          |
|  | 100%                  | 57.5                        | 64.8   | 65.3    |          |
| Power Factor   | 25%                   | 0.48                        | 0.52   | 0.46    |          |
|  | 50%                   | 0.75                        | 0.79   | 0.73    |          |
|  | 75%                   | 0.82                        | 0.86   | 0.82    |          |
|  | 100%                  | 0.86                        | 0.90   | 0.87    |          |
| Bearing type   | : Drive end : 6203 ZZ | Non drive end : 6202 ZZ     | Foundation loads   |         |          |
| Sealing  | : V'Ring              | Without Bearing Seal        | Max. traction  | : 4 lb  |          |
| Lubrication interval   | : -                   | -                           | Max. compression   | : 23 lb |          |
| Lubricant amount   | : -                   | -                           |  |         |          |
| Lubricant type   | : Mobil Polyrex EM    |                             |  |         |          |
| Notes<br>USABLE @208V SF 1.00  |                       |                             |  |         |          |
| This revision replaces and cancel the previous one, which must be eliminated.<br>(1) Looking the motor from the shaft end.<br>(2) Measured at 1m and with tolerance of +3dB(A).<br>(3) Approximate weight subject to changes after manufacturing process.<br>(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     |
| Performed by   |                       |                             |  |         |          |
| Checked by   |                       |                             |  | Page    | Revision |
| Date   | 30/11/2022            |                             |  | 1 / 13  |          |

# TORQUE AND CURRENT VS SPEED CURVE

Three Phase Induction Motor - Squirrel Cage



Customer :

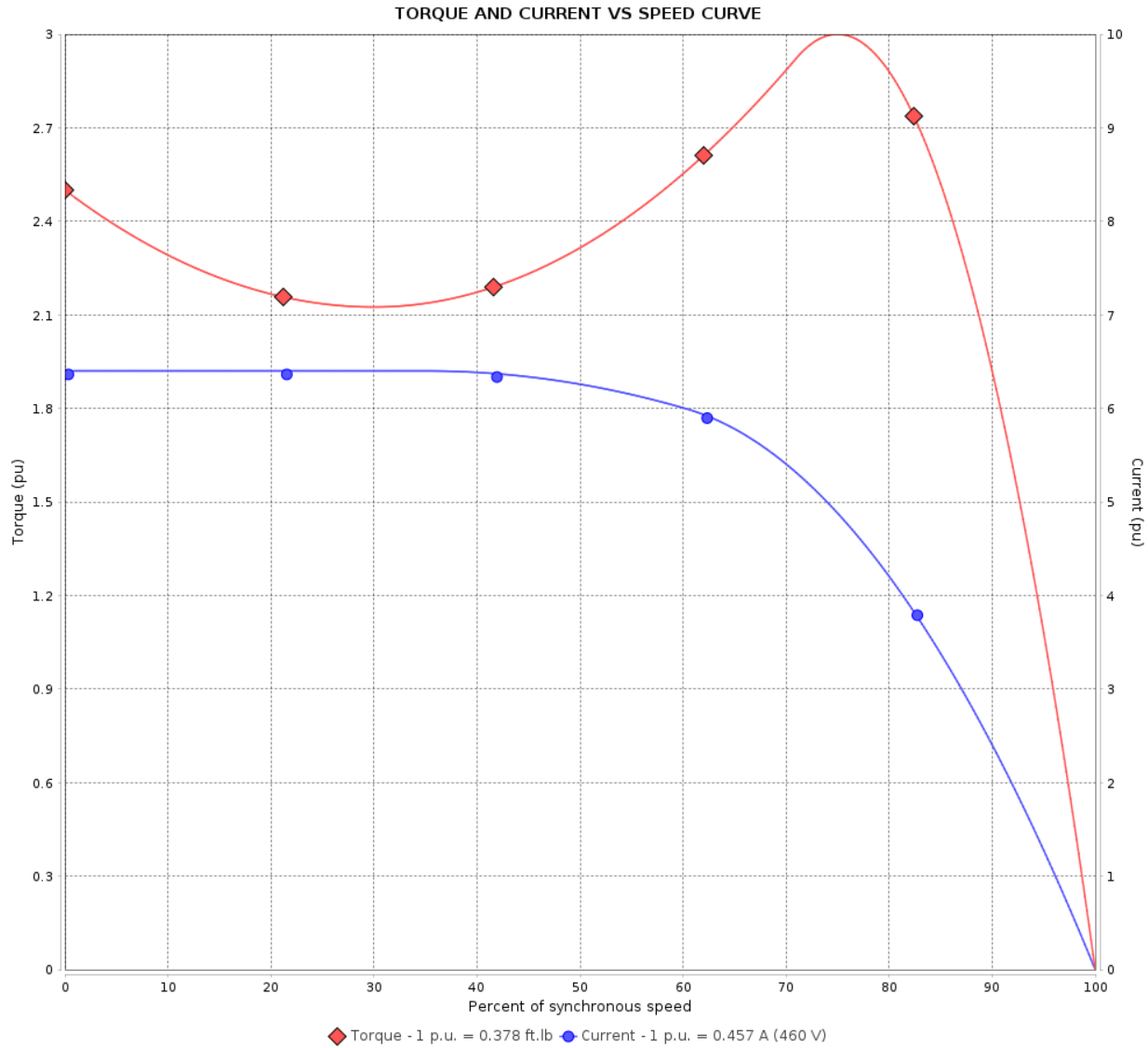
Product line : Standard Efficiency Three-Phase

Product code :

14796867

Catalog # :

.2536ES3E56C-S



Performance : 208-230/460 V 60 Hz 2P

|                     |                      |                       |                   |
|---------------------|----------------------|-----------------------|-------------------|
| Rated current       | : 1.01-0.914/0.457 A | Moment of inertia (J) | : 0.0389 sq.ft.lb |
| LRC                 | : 6.4                | Duty cycle            | : Cont.(S1)       |
| Rated torque        | : 0.378 ft.lb        | Insulation class      | : F               |
| Locked rotor torque | : 250 %              | Service factor        | :                 |
| Breakdown torque    | : 300 %              | Temperature rise      | : 80 K            |
| Rated speed         | : 3475 rpm           |                       |                   |

Locked rotor time : 108s (cold) 60s (hot)

| Rev.         | Changes Summary | Performed | Checked        | Date     |
|--------------|-----------------|-----------|----------------|----------|
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| Checked by   |                 |           |                |          |
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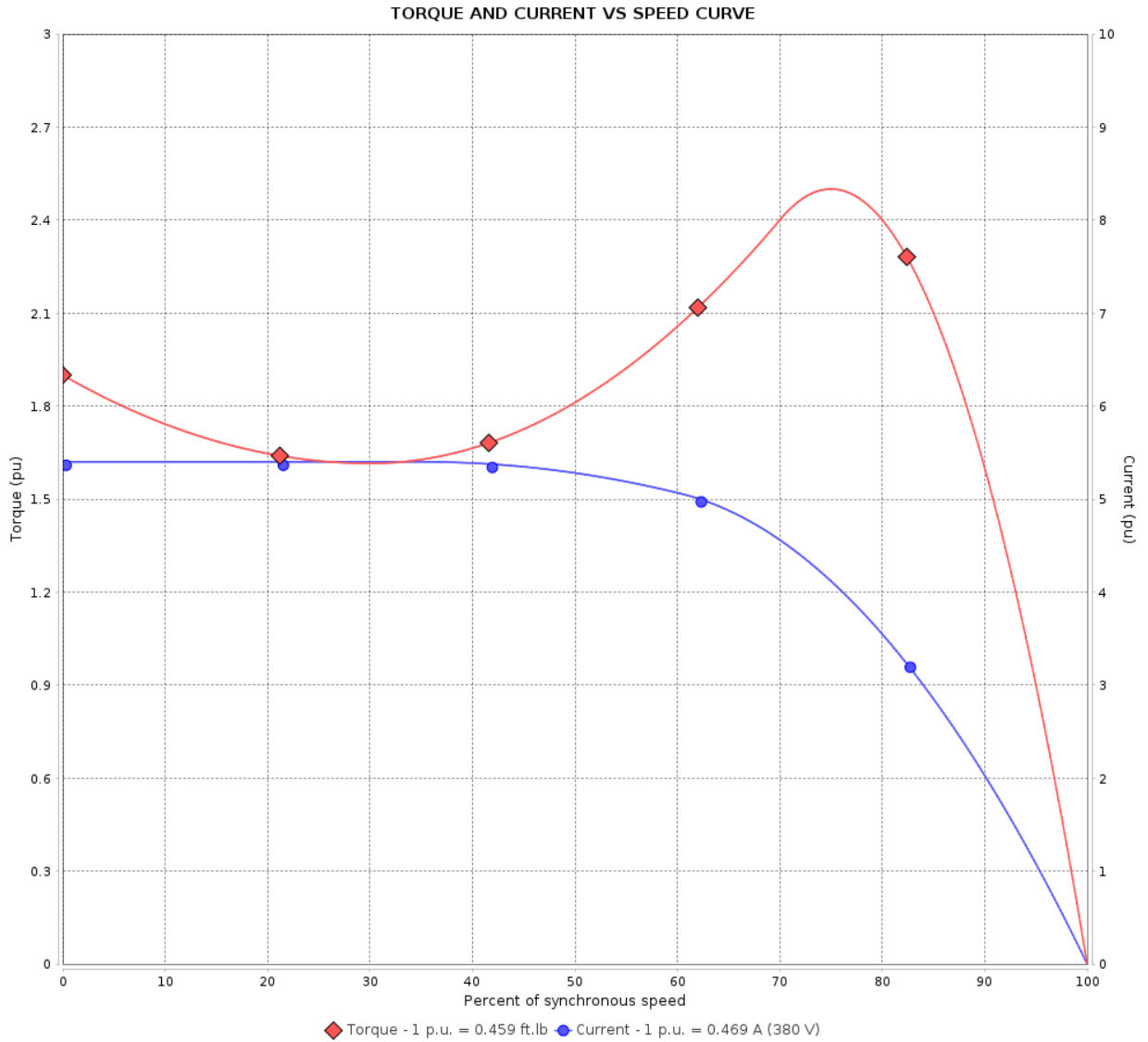
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Performance : 190-220/380 V 50 Hz 2P

|                     |                       |                       |                   |
|---------------------|-----------------------|-----------------------|-------------------|
| Rated current       | : 0.938-0.810/0.469 A | Moment of inertia (J) | : 0.0389 sq.ft.lb |
| LRC                 | : 5.4                 | Duty cycle            | : Cont.(S1)       |
| Rated torque        | : 0.459 ft.lb         | Insulation class      | : F               |
| Locked rotor torque | : 190 %               | Service factor        | : 1.15            |
| Breakdown torque    | : 250 %               | Temperature rise      | : 80 K            |
| Rated speed         | : 2860 rpm            |                       |                   |

Locked rotor time : 133s (cold) 74s (hot)

| Rev.         | Changes Summary | Performed | Checked        | Date     |
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| Checked by   |                 |           |                |          |
| Date         | 30/11/2022      |           |                |          |

# TORQUE AND CURRENT VS SPEED CURVE

Three Phase Induction Motor - Squirrel Cage



Customer :

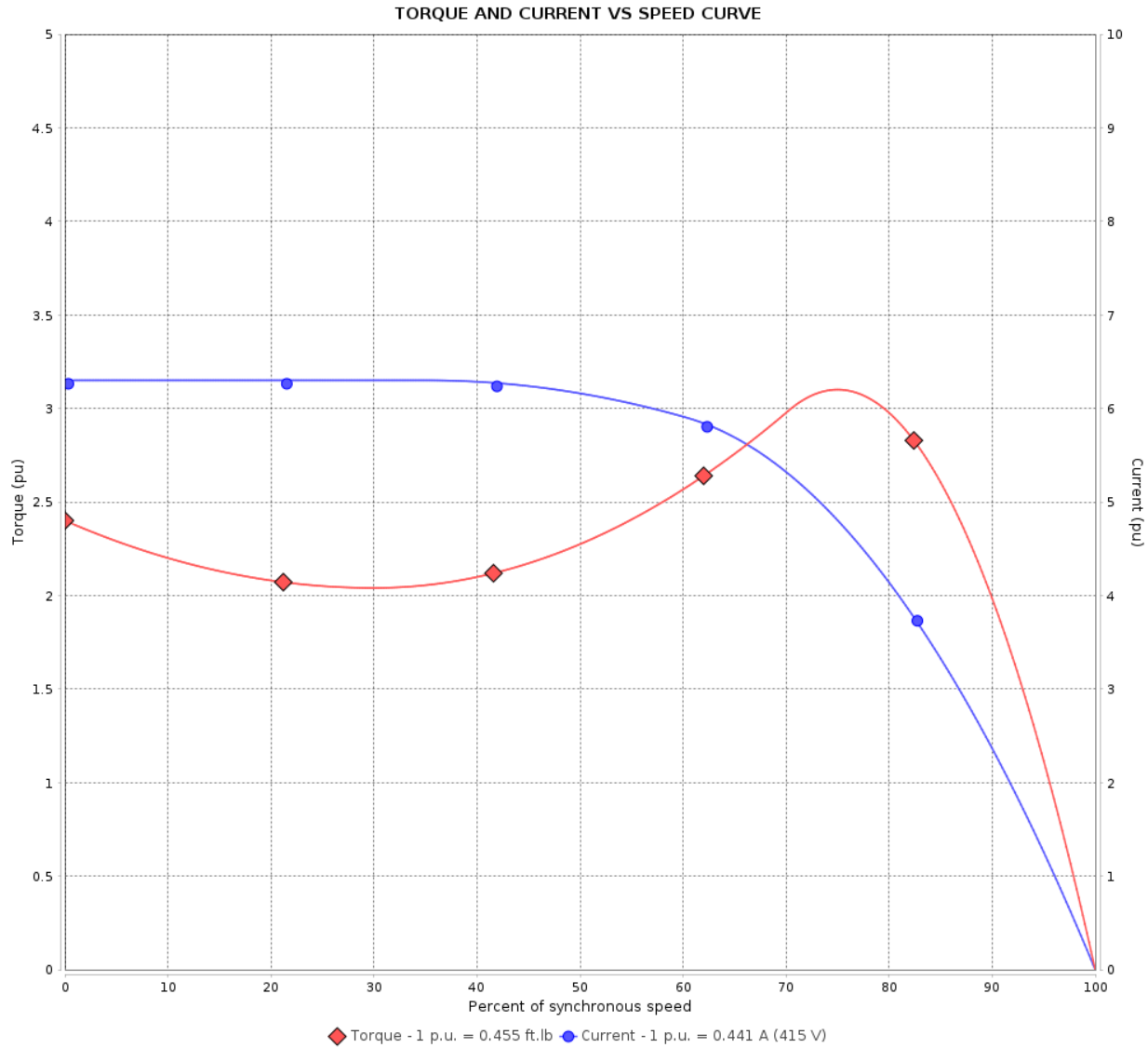
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Product code :

14796867

Catalog # :

.2536ES3E56C-S



Performance : 415 V 50 Hz 2P

|                     |               |                       |                   |
|---------------------|---------------|-----------------------|-------------------|
| Rated current       | : 0.441 A     | Moment of inertia (J) | : 0.0389 sq.ft.lb |
| LRC                 | : 6.3         | Duty cycle            | : Cont.(S1)       |
| Rated torque        | : 0.455 ft.lb | Insulation class      | : F               |
| Locked rotor torque | : 240 %       | Service factor        | : 1.15            |
| Breakdown torque    | : 310 %       | Temperature rise      | : 80 K            |
| Rated speed         | : 2885 rpm    |                       |                   |

Locked rotor time : 111s (cold) 62s (hot)

| Rev.         | Changes Summary | Performed | Checked        | Date     |
|--------------|-----------------|-----------|----------------|----------|
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| Checked by   |                 |           |                |          |
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# LOAD PERFORMANCE CURVE

## Three Phase Induction Motor - Squirrel Cage



Customer :

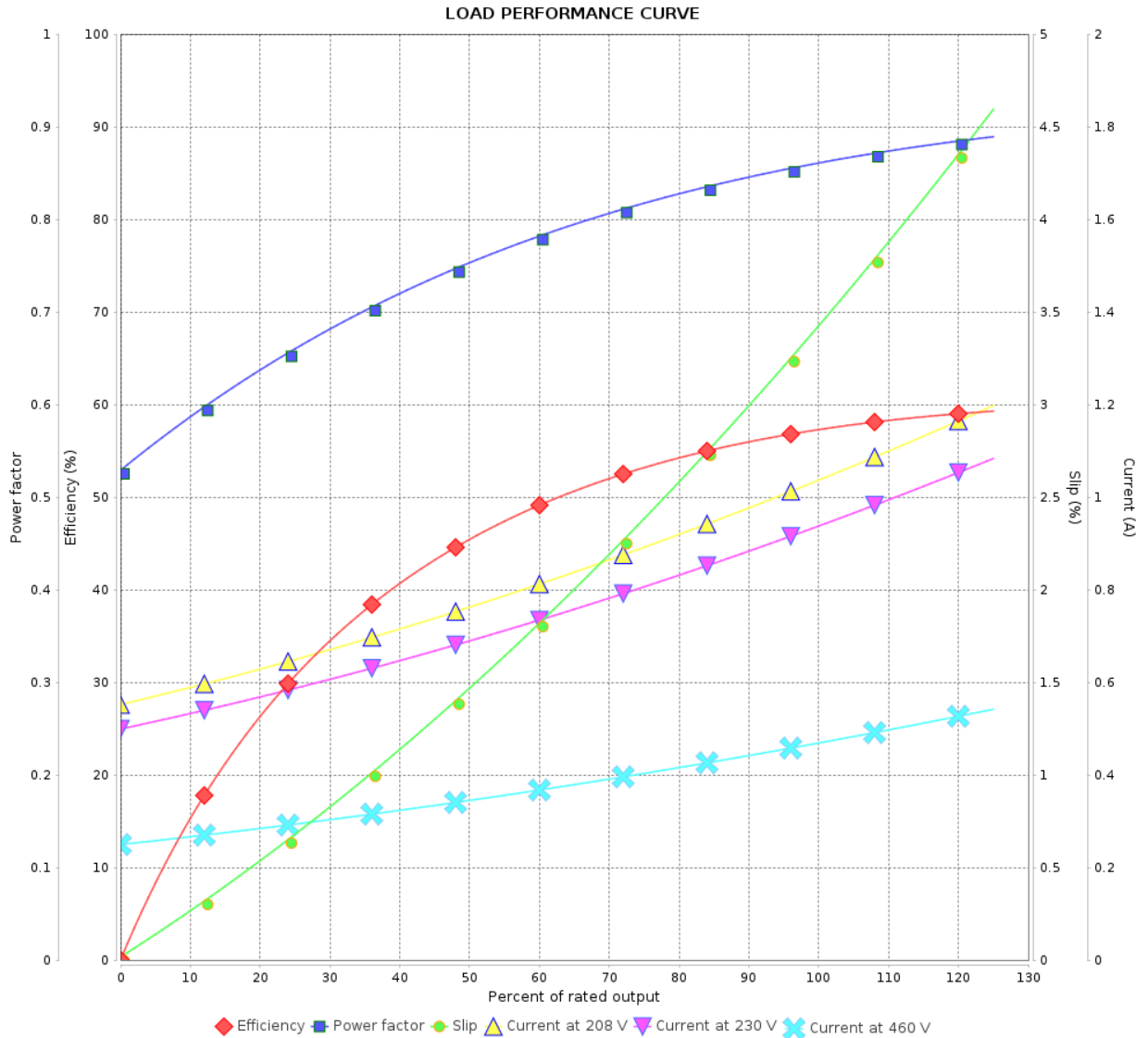
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Product code :

14796867

Catalog # :

.2536ES3E56C-S



Performance : 208-230/460 V 60 Hz 2P

Rated current : 1.01-0.914/0.457 A  
 LRC : 6.4  
 Rated torque : 0.378 ft.lb  
 Locked rotor torque : 250 %  
 Breakdown torque : 300 %  
 Rated speed : 3475 rpm

Moment of inertia (J) : 0.0389 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor :  
 Temperature rise : 80 K

| Rev.         | Changes Summary | Performed  | Checked | Date     |
|--------------|-----------------|------------|---------|----------|
|              |                 |            |         |          |
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| Date         |                 | 30/11/2022 |         |          |

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Three Phase Induction Motor - Squirrel Cage



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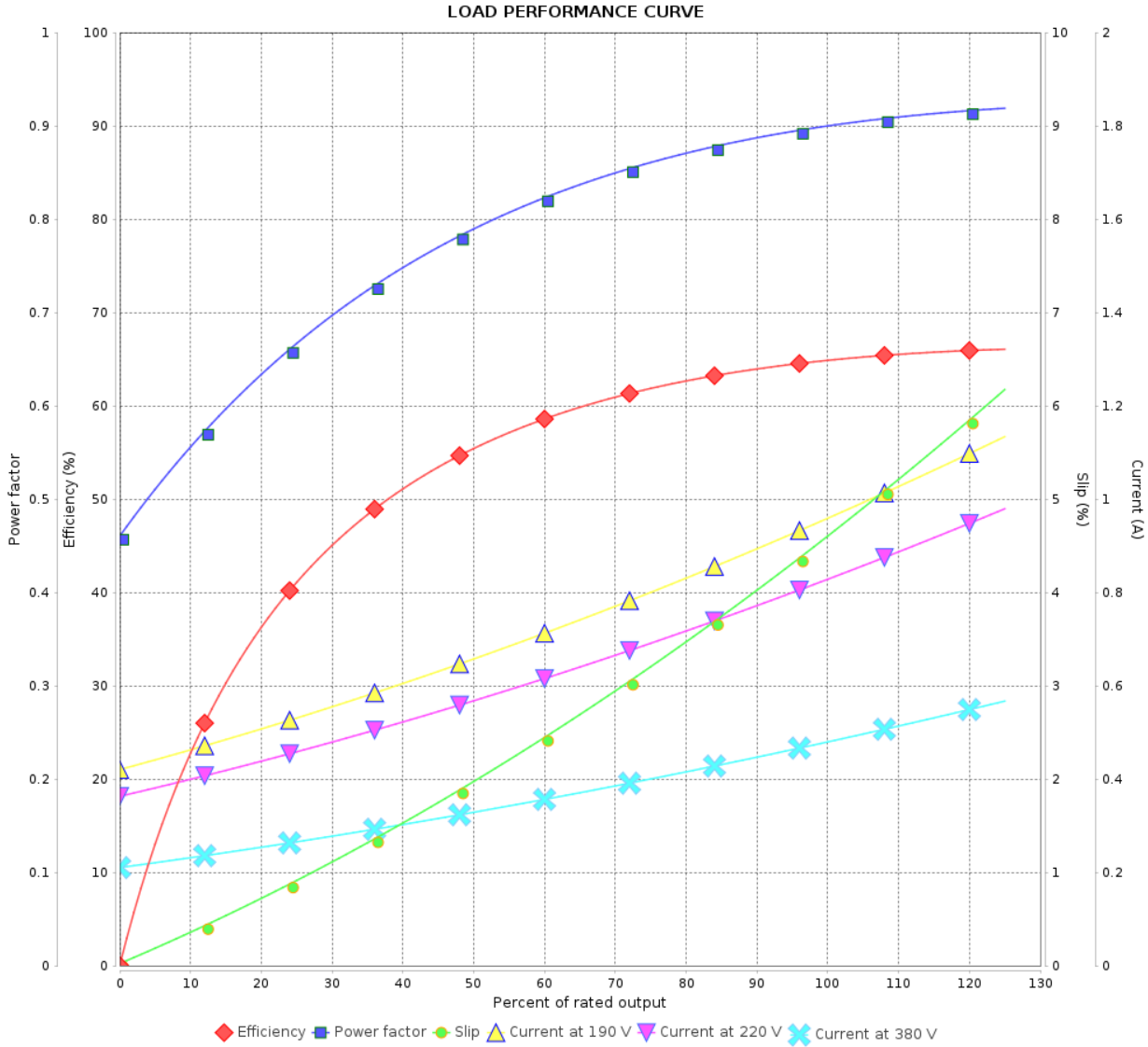
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 Locked rotor torque : 190 %  
 Breakdown torque : 250 %  
 Rated speed : 2860 rpm

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 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.15  
 Temperature rise : 80 K

| Rev.         | Changes Summary | Performed | Checked        | Date     |
|--------------|-----------------|-----------|----------------|----------|
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## Three Phase Induction Motor - Squirrel Cage



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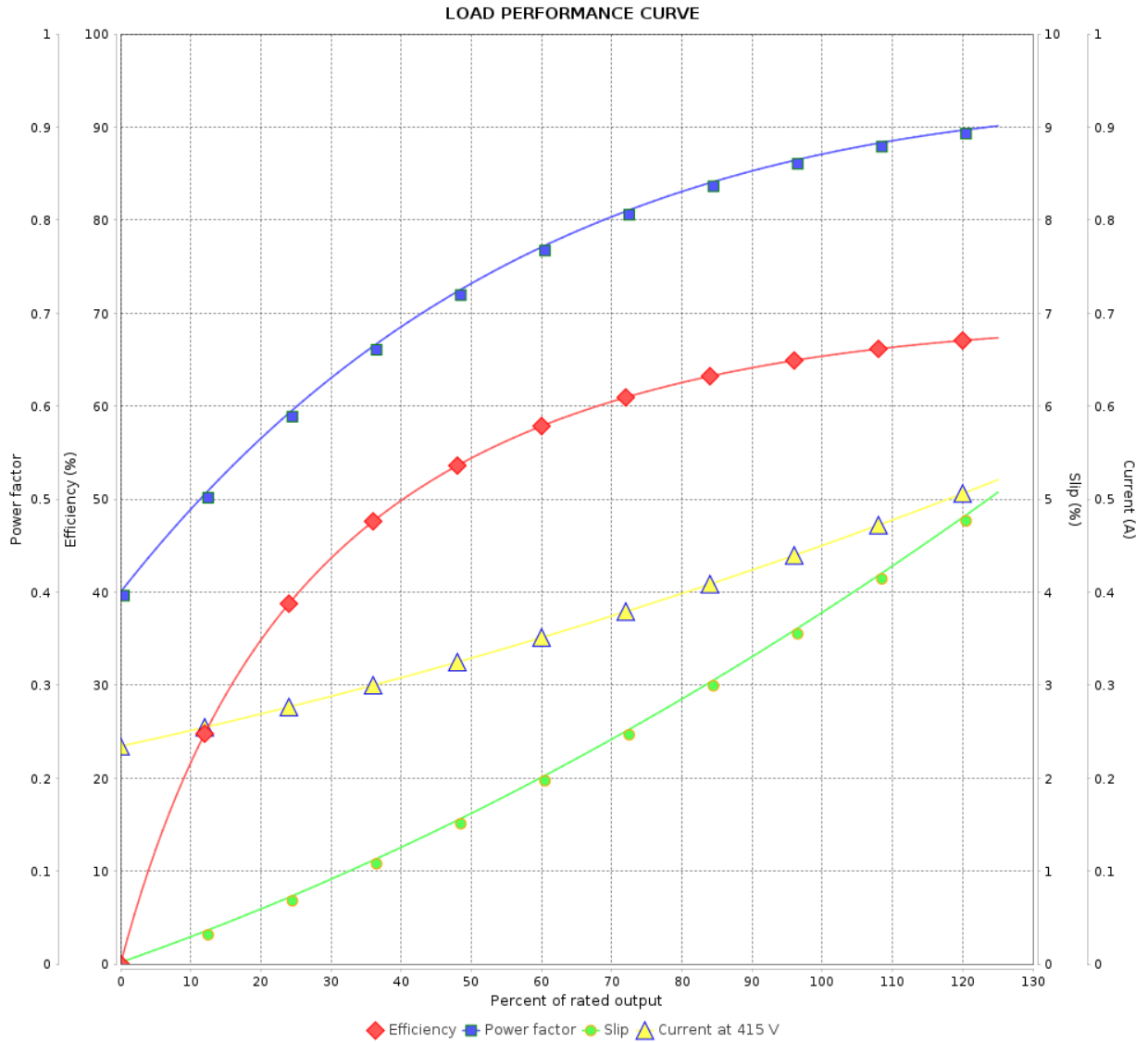
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| Date         | 30/11/2022      |           |                |          |

# THERMAL LIMIT CURVE

## Three Phase Induction Motor - Squirrel Cage



Customer : \_\_\_\_\_

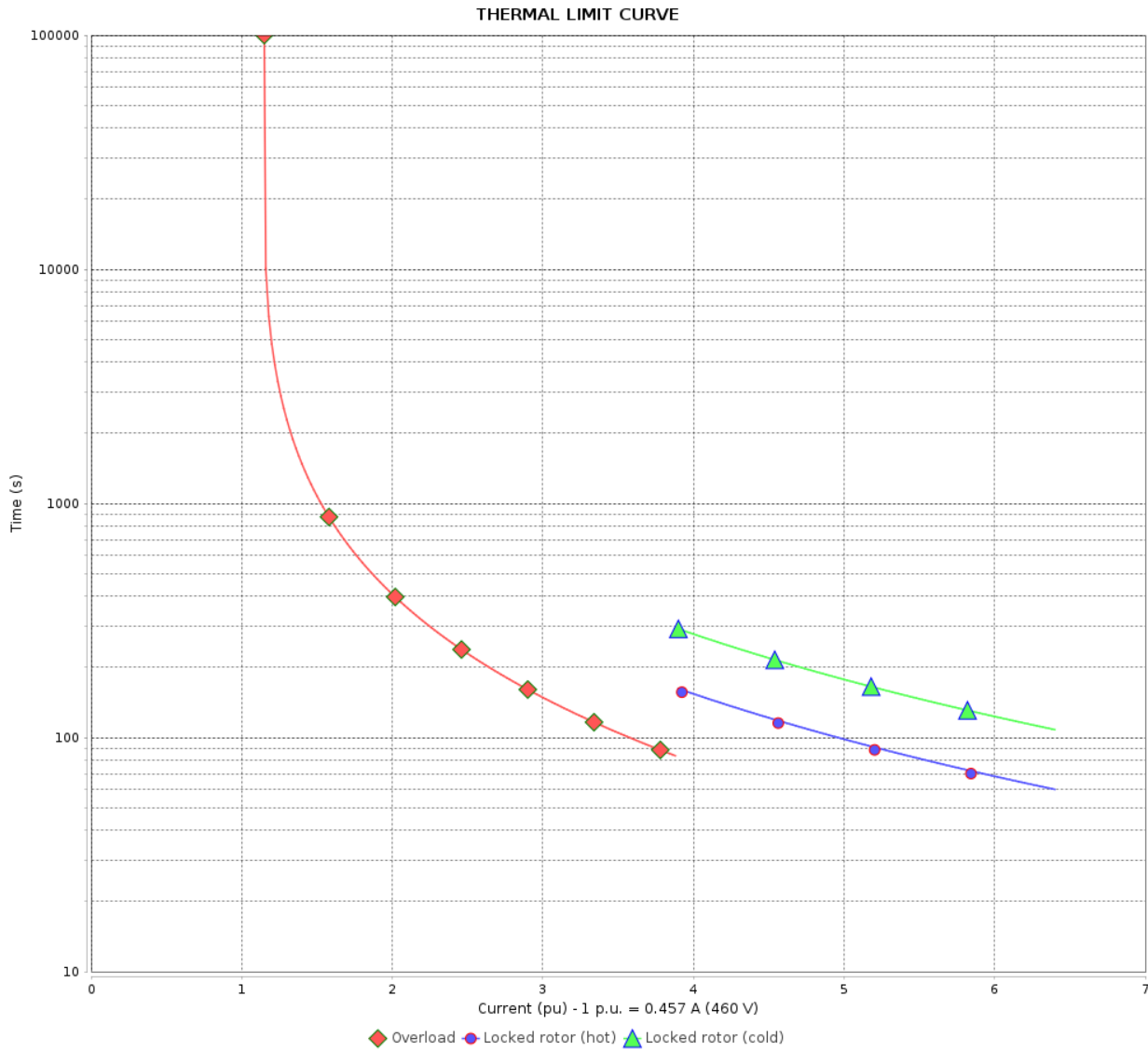
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 Locked rotor torque : 250 %  
 Breakdown torque : 300 %  
 Rated speed : 3475 rpm

Moment of inertia (J) : 0.0389 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor :  
 Temperature rise : 80 K

Heating constant

Cooling constant

| Rev.         | Changes Summary | Performed | Checked | Date     |
|--------------|-----------------|-----------|---------|----------|
|              |                 |           |         |          |
| Performed by | 30/11/2022      | Page      |         | Revision |
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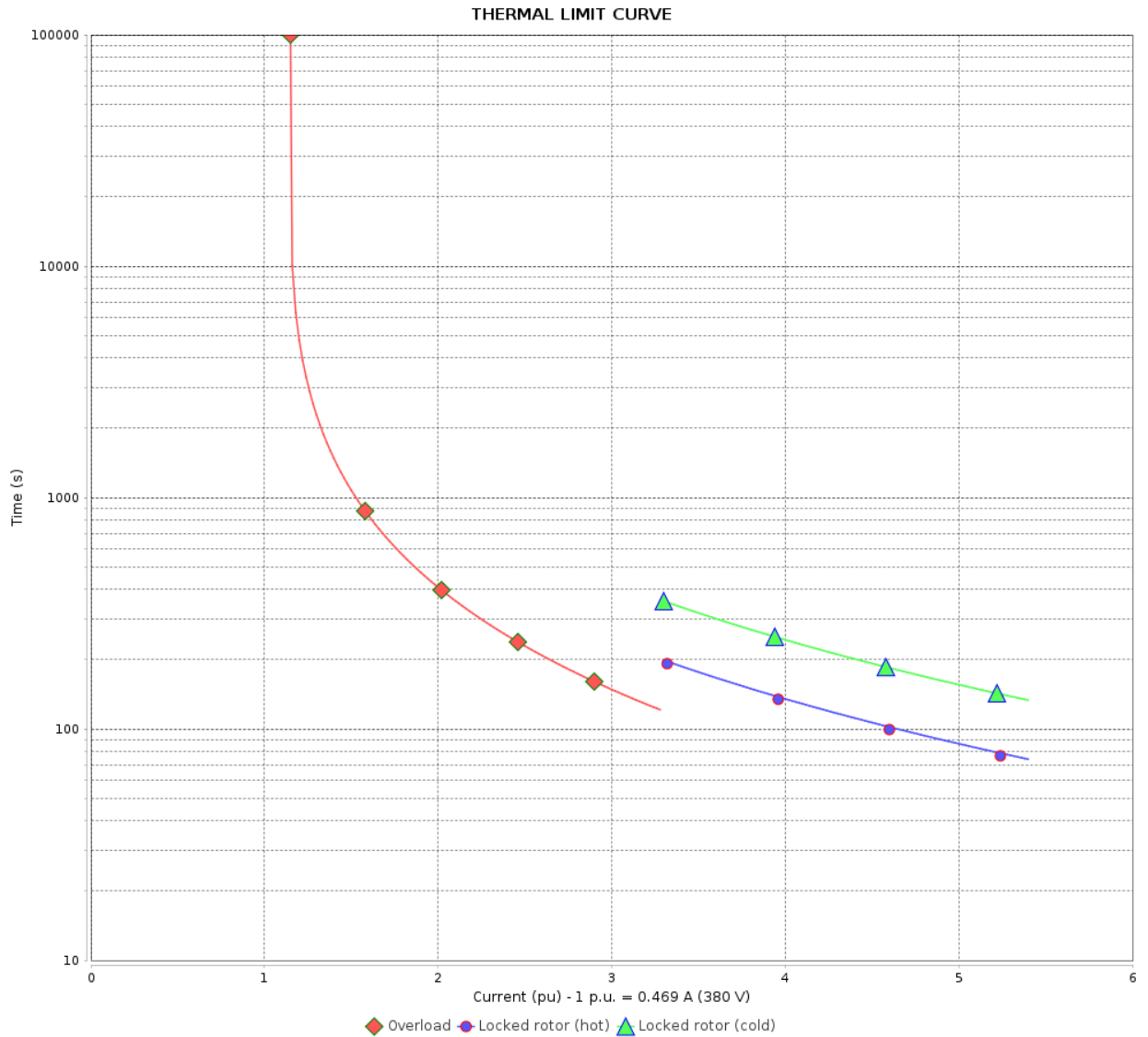
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# THERMAL LIMIT CURVE

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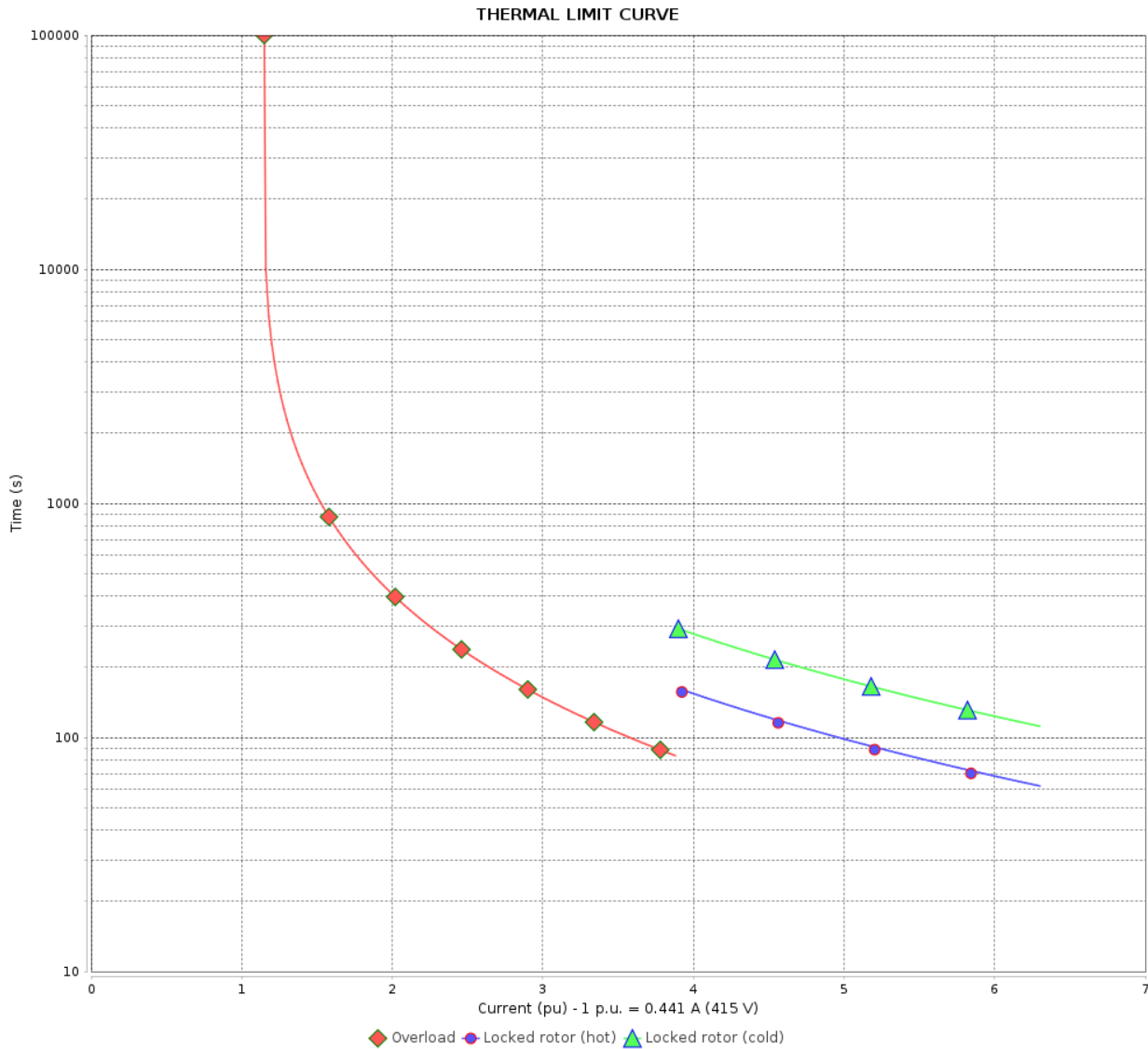
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Performance : 415 V 50 Hz 2P

Rated current : 0.441 A  
 LRC : 6.3  
 Rated torque : 0.455 ft.lb  
 Locked rotor torque : 240 %  
 Breakdown torque : 310 %  
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Moment of inertia (J) : 0.0389 sq.ft.lb  
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|              |                 |           |         |          |
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| Date         |                 |           |         |          |

# VFD OPERATION CURVE

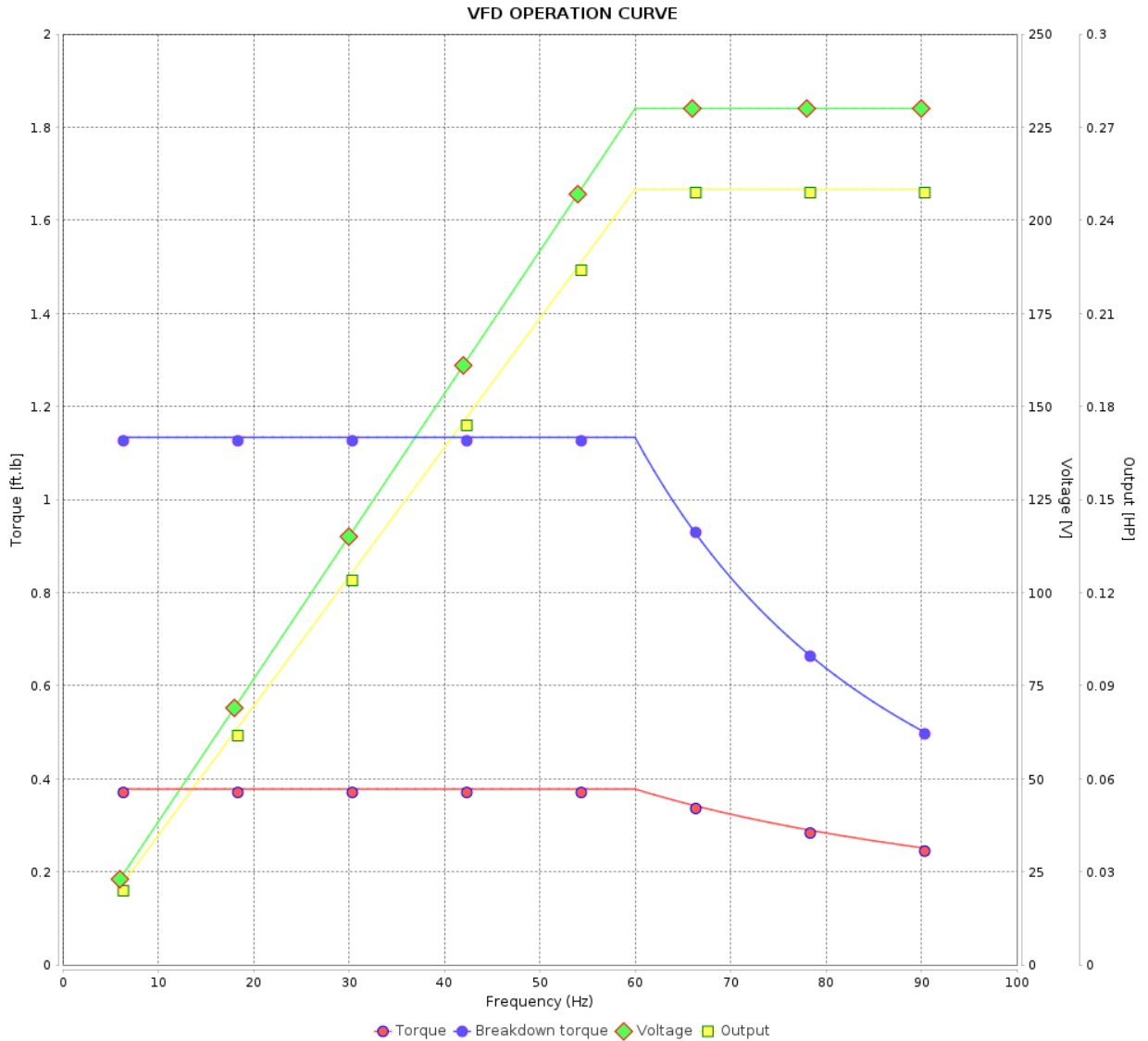
## Three Phase Induction Motor - Squirrel Cage



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Rated torque : 0.378 ft.lb  
Locked rotor torque : 250 %  
Breakdown torque : 300 %  
Rated speed : 3475 rpm

Moment of inertia (J) : 0.0389 sq.ft.lb  
Duty cycle : Cont.(S1)  
Insulation class : F  
Service factor :  
Temperature rise : 80 K

| Rev.         | Changes Summary | Performed | Checked         | Date     |
|--------------|-----------------|-----------|-----------------|----------|
|              |                 |           |                 |          |
| Performed by |                 |           | Page<br>11 / 13 | Revision |
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# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage



Customer :

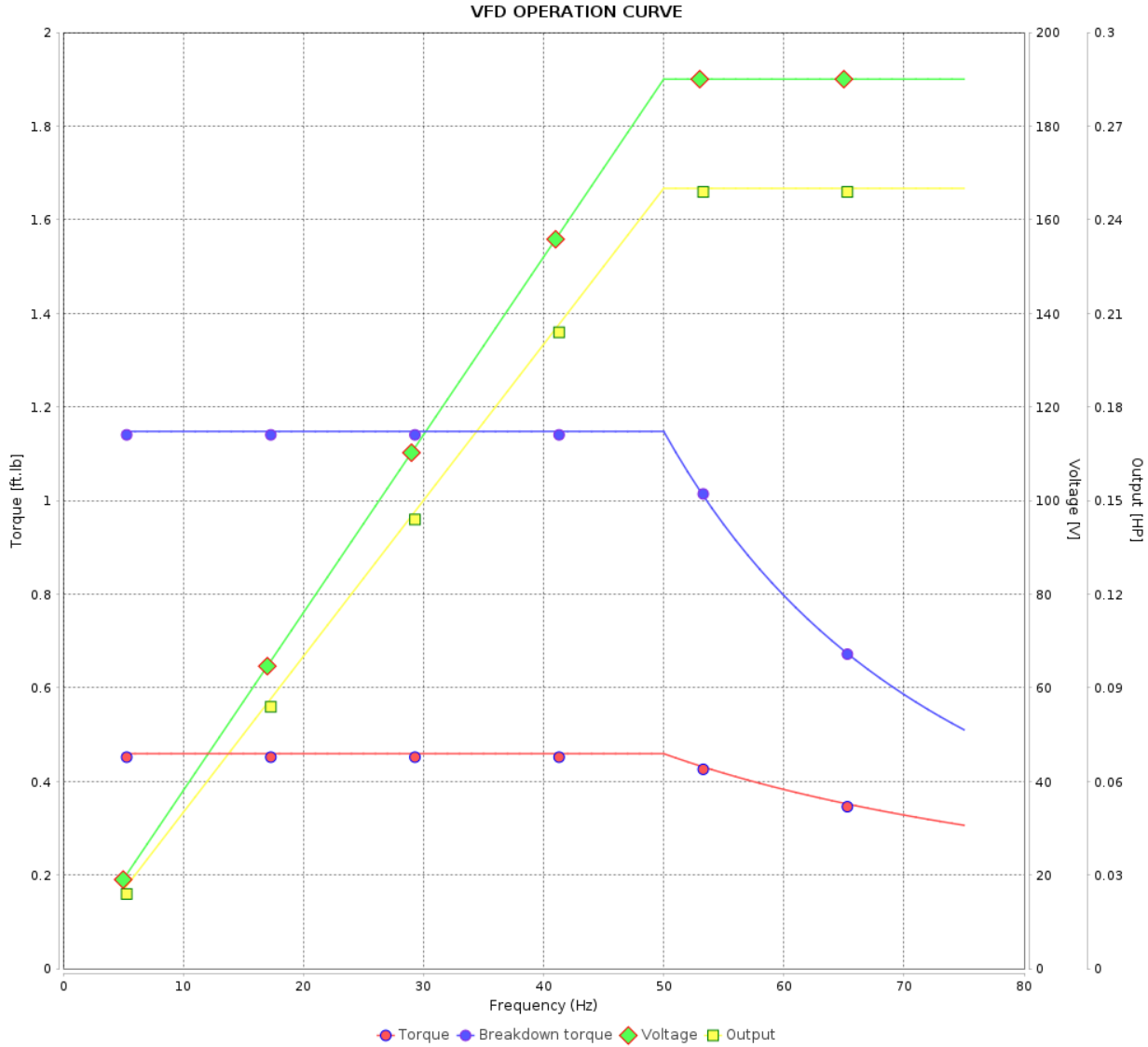
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# VFD OPERATION CURVE

## Three Phase Induction Motor - Squirrel Cage



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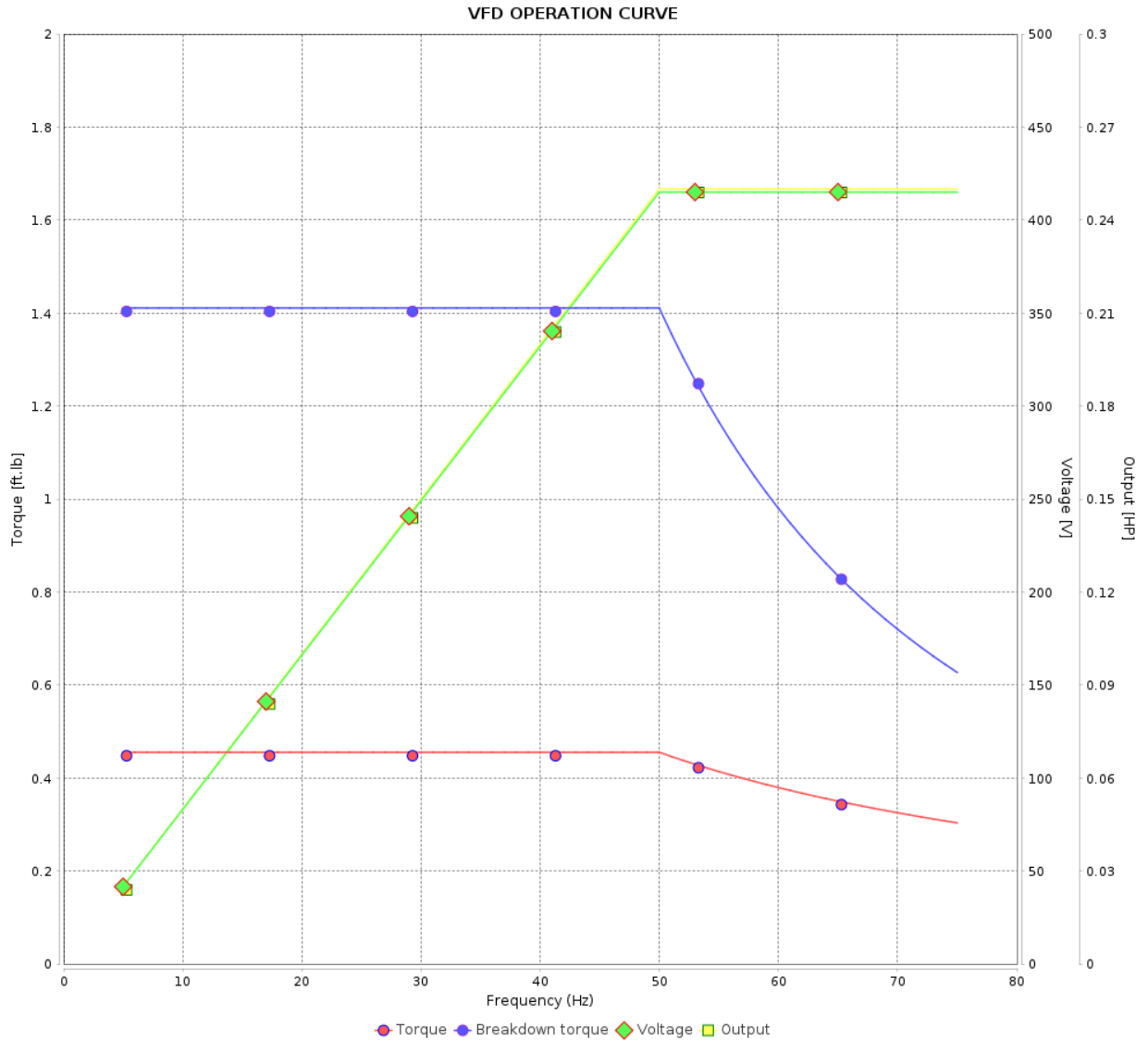
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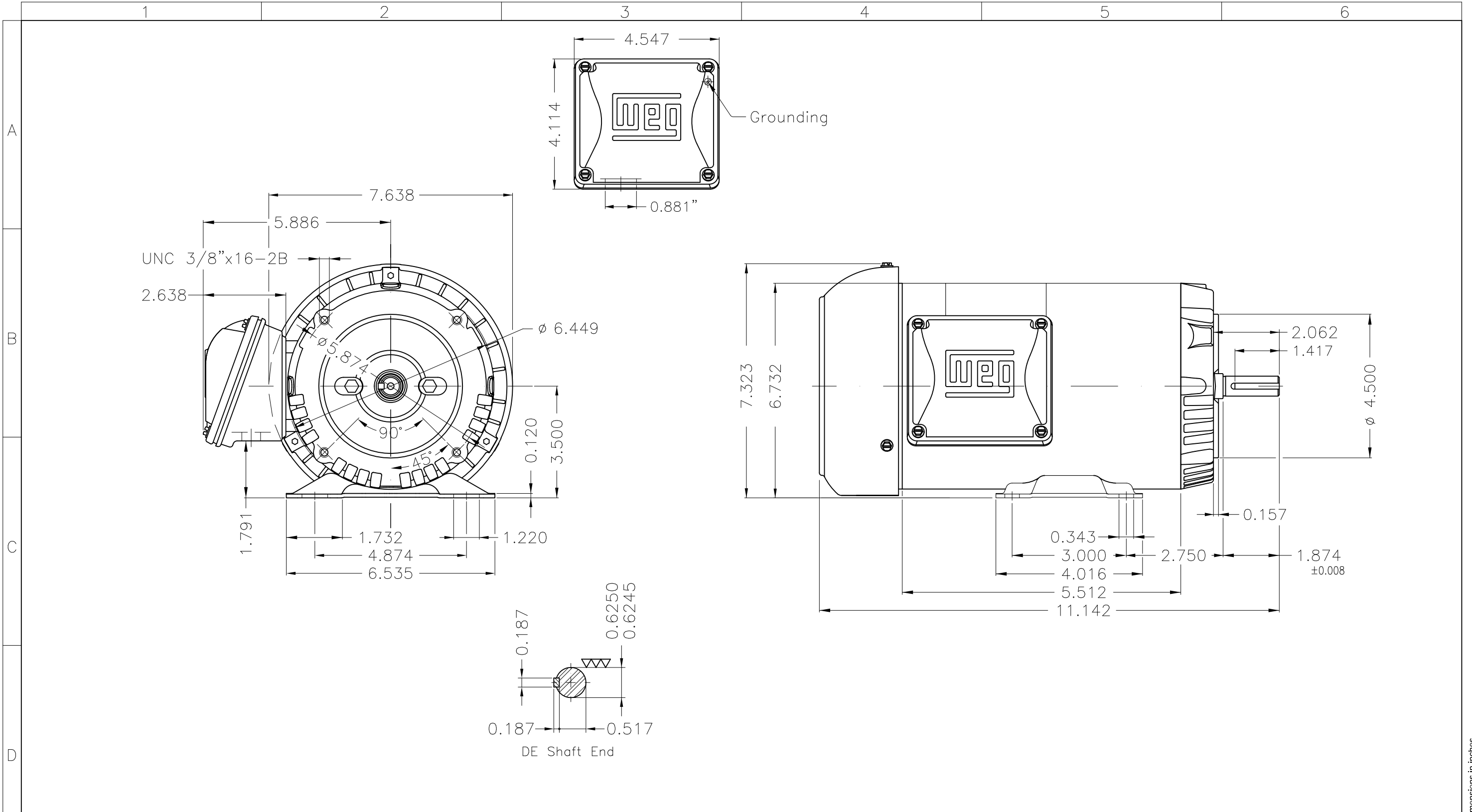


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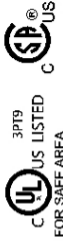
|                               |            |                              |                     |            |         |
|-------------------------------|------------|------------------------------|---------------------|------------|---------|
| Fan cover - steel plate       |            |                              |                     |            |         |
| Color Munsell N 1 matte black |            |                              |                     |            |         |
| Painting plan 207N            |            |                              |                     |            |         |
| Mounting F-1/B34R(D)          |            |                              |                     |            |         |
|                               |            |                              |                     |            |         |
|                               |            |                              |                     |            |         |
|                               |            |                              |                     | HYBRISUSER | 00      |
| ECM                           | LOC        | SUMMARY OF MODIFICATIONS     |                     | EXECUTED   | CHECKED |
| EXECUTED                      | HYBRISUSER | THREE PH. MOTOR ROLLED STEEL |                     | PREVIEW    | WDD 00  |
| CHECKED                       |            | FRAME 56C IP55 TEFC          |                     |            |         |
| RELEASED                      |            |                              |                     |            |         |
| REL. DATE                     | WMO        | Jaragua do Sul               | Product Engineering | SHEET      | 1 / 1   |

0.25 HP 02 Poles 60 Hz

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Dimensions in inches XME A3



MADE IN MEXICO

**MAT: 14796867**

**W01.TE0IC0X0X**

**MODEL 2536ES3E56C-S**

**04JUL2022 B/N:**

**For 60Hz: Class I, Zone 2, IIC  
Class I, Div.2, Gr. A,B,C,D - T3  
Div 2 Inverter Duty (SF1.00)**

**CT 2:1/VT 1000:1**

|                      |        |                        |
|----------------------|--------|------------------------|
| PH 3                 | Hz 60  | HP 0.25                |
| FR 56C               |        | KW 0.18                |
| DUTY CONT.           |        | V 208-230/460          |
| ALT 1000 m.a.s.l.    |        | A 1.01-0.914/0.457     |
| INS CL F AT 80K      | IP55   | SFA 1.01-1.05/0.526    |
| AMB 40°C             | DES -  | SF 1.15                |
| ENCL TEFC            | CODE L | PF 0.86                |
| USABLE @ 208V SF1.00 |        | RPM 3475               |
|                      |        | NEMA<br>NOM. EFF 57.5% |

|  |
|--|
| ALTERNATE RATING: 0.25HP 50Hz 190-220/380-415V SF1.15        |
| 0.938-0.832/0.489-0.441A 2860RPM EFF 84.8% (IE2) IEC 60034-1 |

For safe area-Inverter duty motor For 60Hz use on VPWM 1000:1 VT, 10:1 CT

|            |             |                  |
|------------|-------------|------------------|
| DE 6203-ZZ | ODE 6202-ZZ | MOBIL POLYREX EM |
|------------|-------------|------------------|



T1-BLU T2-WHT  
T3-ORG T4-YEL  
T5-BLK T6-GRY  
T7-PNK T8-RED  
T9-BRK RED

INTERCHANGE ANY TWO LINE WIRES TO REVERSE THE ROTATION

**WARNING:** Motor must be grounded in accordance with local and national electrical codes to prevent serious electrical shocks. Disconnect power source before servicing unit.



**AVERTISSEMENT:** Le moteur doit être mis à la terre conformément aux codes électriques locaux et nationaux afin d'éviter tout choc électrique grave. Déconnectez l'alimentation avant l'entretien de la machine.

