

# DATA SHEET



## Three Phase Induction Motor - Squirrel Cage

|  |                                       |                             |                         |  |                         |                         |                         |
|--|---------------------------------------|-----------------------------|-------------------------|--|-------------------------|-------------------------|-------------------------|
| Customer   |                                       |                             |                         |  |                         |                         |                         |
| Product line   | : NEMA Premium Efficiency Three-Phase | Product code                | : 12385115              |  |                         |                         |                         |
|  |                                       | Catalog #                   | : 01518ST3QIE254T-W22   |  |                         |                         |                         |
| Frame  | : 254/6T                              | 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>2</sup> | : 320 lb                |  |                         |                         |                         |
| Protection degree  | : IP55                                | Moment of inertia (J)       | : 2.62 sq.ft.lb         |  |                         |                         |                         |
| Design   | : B                                   |                             |                         |  |                         |                         |                         |
| Output [HP]  | 15                                    | 10                          | 10                      | 10   | 15                      | 15                      | 15                      |
| Poles  | 4                                     | 4                           | 4                       | 4  | 4                       | 4                       | 4                       |
| Frequency [Hz]   | 60                                    | 50                          | 50                      | 50   | 50                      | 50                      | 50                      |
| Rated voltage [V]  | 460                                   | 380                         | 400                     | 415  | 380                     | 400                     | 415                     |
| Rated current [A]  | 18.0                                  | 15.2                        | 14.8                    | 14.5   | 21.5                    | 20.5                    | 20.0                    |
| L. R. Amperes [A]  | 115                                   | 109                         | 115                     | 120  | 105                     | 111                     | 118                     |
| LRC [A]  | 6.4x(Code G)                          | 7.2x(Code J)                | 7.8x(Code J)            | 8.3x(Code K)   | 4.9x(Code E)            | 5.4x(Code F)            | 5.9x(Code G)            |
| No load current [A]  | 7.20                                  | 6.70                        | 7.10                    | 7.40   | 7.10                    | 7.60                    | 7.40                    |
| Rated speed [RPM]  | 1770                                  | 1475                        | 1480                    | 1480   | 1455                    | 1460                    | 1465                    |
| Slip [%]   | 1.67                                  | 1.67                        | 1.33                    | 1.33   | 3.00                    | 2.67                    | 2.33                    |
| Rated torque [ft.lb]   | 44.6                                  | 35.6                        | 35.5                    | 35.5   | 54.1                    | 54.0                    | 53.8                    |
| Locked rotor torque [%]  | 220                                   | 250                         | 280                     | 310  | 160                     | 200                     | 210                     |
| Breakdown torque [%]   | 260                                   | 300                         | 340                     | 370  | 200                     | 220                     | 240                     |
| Service factor   | 1.25                                  | 1.25                        | 1.25                    | 1.25   | 1.00                    | 1.00                    | 1.00                    |
| Temperature rise   | 80 K                                  | 80 K                        | 80 K                    | 80 K   | 80 K                    | 80 K                    | 80 K                    |
| Locked rotor time  | 55s (cold)<br>31s (hot)               | 72s (cold)<br>40s (hot)     | 63s (cold)<br>35s (hot) | 57s (cold)<br>32s (hot)  | 43s (cold)<br>24s (hot) | 41s (cold)<br>23s (hot) | 37s (cold)<br>21s (hot) |
| Noise level <sup>2</sup>   | 64.0 dB(A)                            | 61.0 dB(A)                  | 61.0 dB(A)              | 61.0 dB(A)   | 61.0 dB(A)              | 61.0 dB(A)              | 61.0 dB(A)              |
| Efficiency (%)   | 25%                                   | 90.2                        | 88.5                    | 88.1   | 87.6                    | 90.8                    | 90.8                    |
|  | 50%                                   | 91.0                        | 88.8                    | 88.6   | 88.3                    | 91.0                    | 91.0                    |
|  | 75%                                   | 91.7                        | 90.3                    | 90.3   | 90.3                    | 90.2                    | 91.0                    |
|  | 100%                                  | 92.4                        | 90.4                    | 90.6   | 90.8                    | 90.2                    | 91.0                    |
| Power Factor   | 25%                                   | 0.43                        | 0.40                    | 0.37   | 0.35                    | 0.49                    | 0.45                    |
|  | 50%                                   | 0.68                        | 0.65                    | 0.62   | 0.59                    | 0.74                    | 0.71                    |
|  | 75%                                   | 0.78                        | 0.77                    | 0.74   | 0.72                    | 0.82                    | 0.80                    |
|  | 100%                                  | 0.83                        | 0.83                    | 0.81   | 0.79                    | 0.86                    | 0.85                    |
| Bearing type   | : Drive end : 6309 C3                 | Non drive end : 6209 C3     | Foundation loads        |  |                         |                         |                         |
| Sealing  | : Inpro/Seal                          | Inpro/Seal                  | Max. traction           | : 459 lb   |                         |                         |                         |
| Lubrication interval   | : 20000 h                             | 20000 h                     | Max. compression        | : 779 lb   |                         |                         |                         |
| Lubricant amount   | : 13 g                                | 9 g                         |                         |  |                         |                         |                         |
| Lubricant type   | : Mobil Polyrex EM                    |                             |                         |  |                         |                         |                         |
| Notes  |                                       |                             |                         |  |                         |                         |                         |
| 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   | 13/04/2022                            |                             |                         |  | 1 / 36                  |                         |                         |

# TORQUE AND CURRENT VS SPEED CURVE

## Three Phase Induction Motor - Squirrel Cage



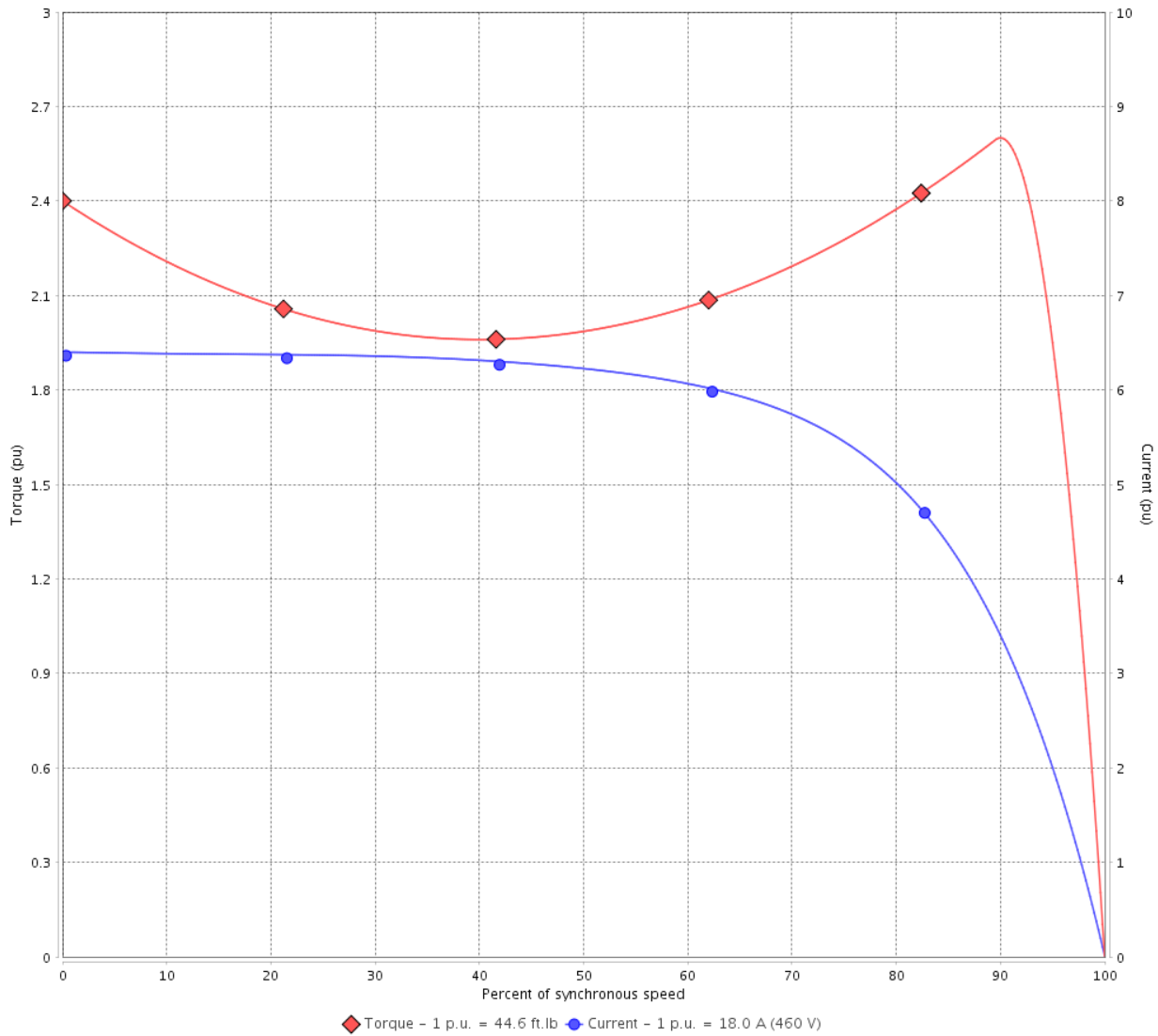
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12385115

Catalog # : 01518ST3QIE254T-W22

TORQUE AND CURRENT VS SPEED CURVE



Performance : 460 V 60 Hz 4P

|                     |              |                       |                 |
|---------------------|--------------|-----------------------|-----------------|
| Rated current       | : 18.0 A     | Moment of inertia (J) | : 2.62 sq.ft.lb |
| LRC                 | : 6.4        | Duty cycle            | : Cont.(S1)     |
| Rated torque        | : 44.6 ft.lb | Insulation class      | : F             |
| Locked rotor torque | : 220 %      | Service factor        | : 1.25          |
| Breakdown torque    | : 260 %      | Temperature rise      | : 80 K          |
| Rated speed         | : 1770 rpm   | Design                | : B             |

Locked rotor time : 55s (cold) 31s (hot)

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



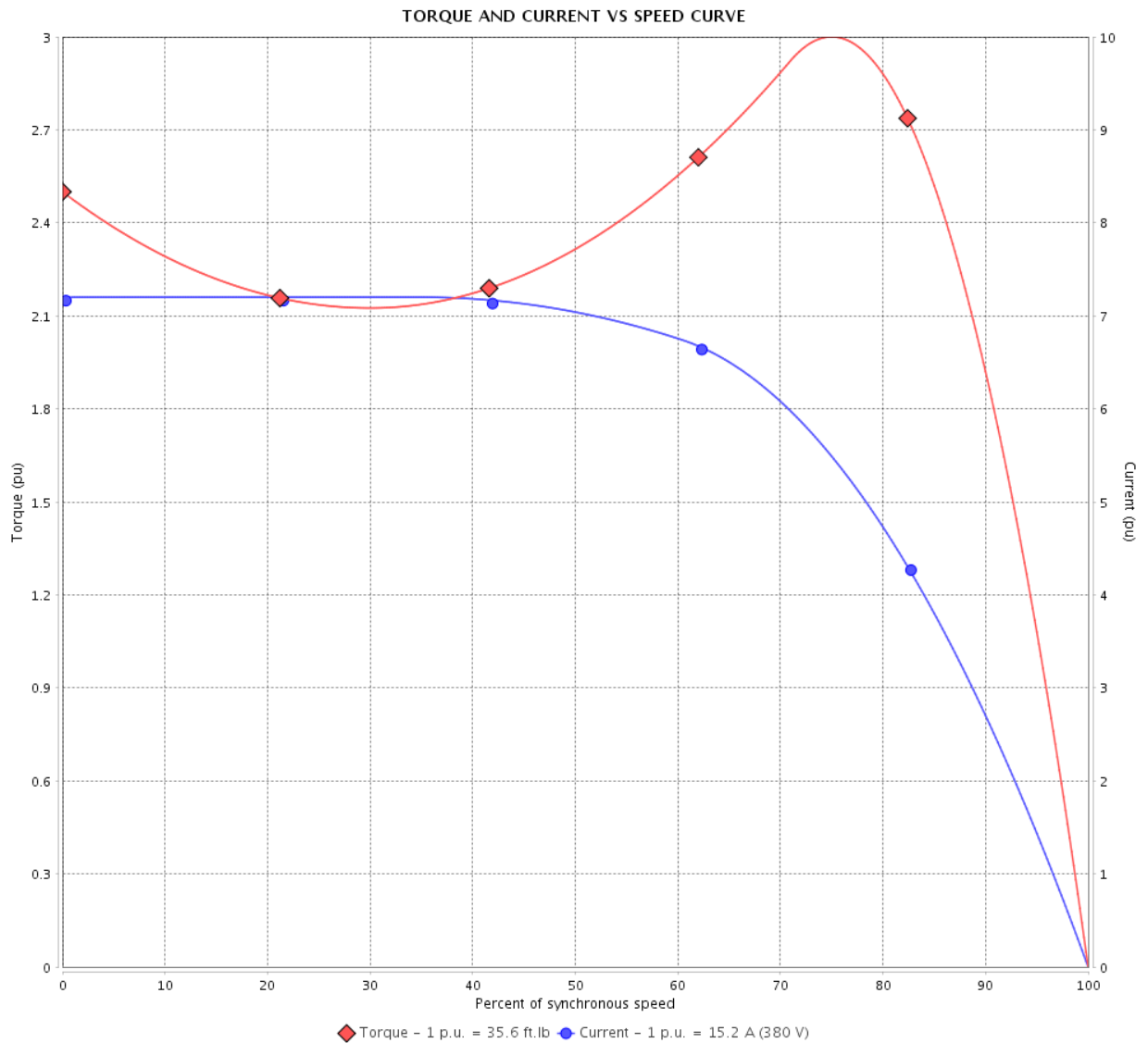
## Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12385115

Catalog # : 01518ST3QIE254T-W22



Performance : 380 V 50 Hz 4P IE3

Rated current : 15.2 A  
 LRC : 7.2  
 Rated torque : 35.6 ft.lb  
 Locked rotor torque : 250 %  
 Breakdown torque : 300 %  
 Rated speed : 1475 rpm

Moment of inertia (J) : 2.62 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.25  
 Temperature rise : 80 K  
 Design : B

Locked rotor time : 72s (cold) 40s (hot)

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# TORQUE AND CURRENT VS SPEED CURVE

## Three Phase Induction Motor - Squirrel Cage



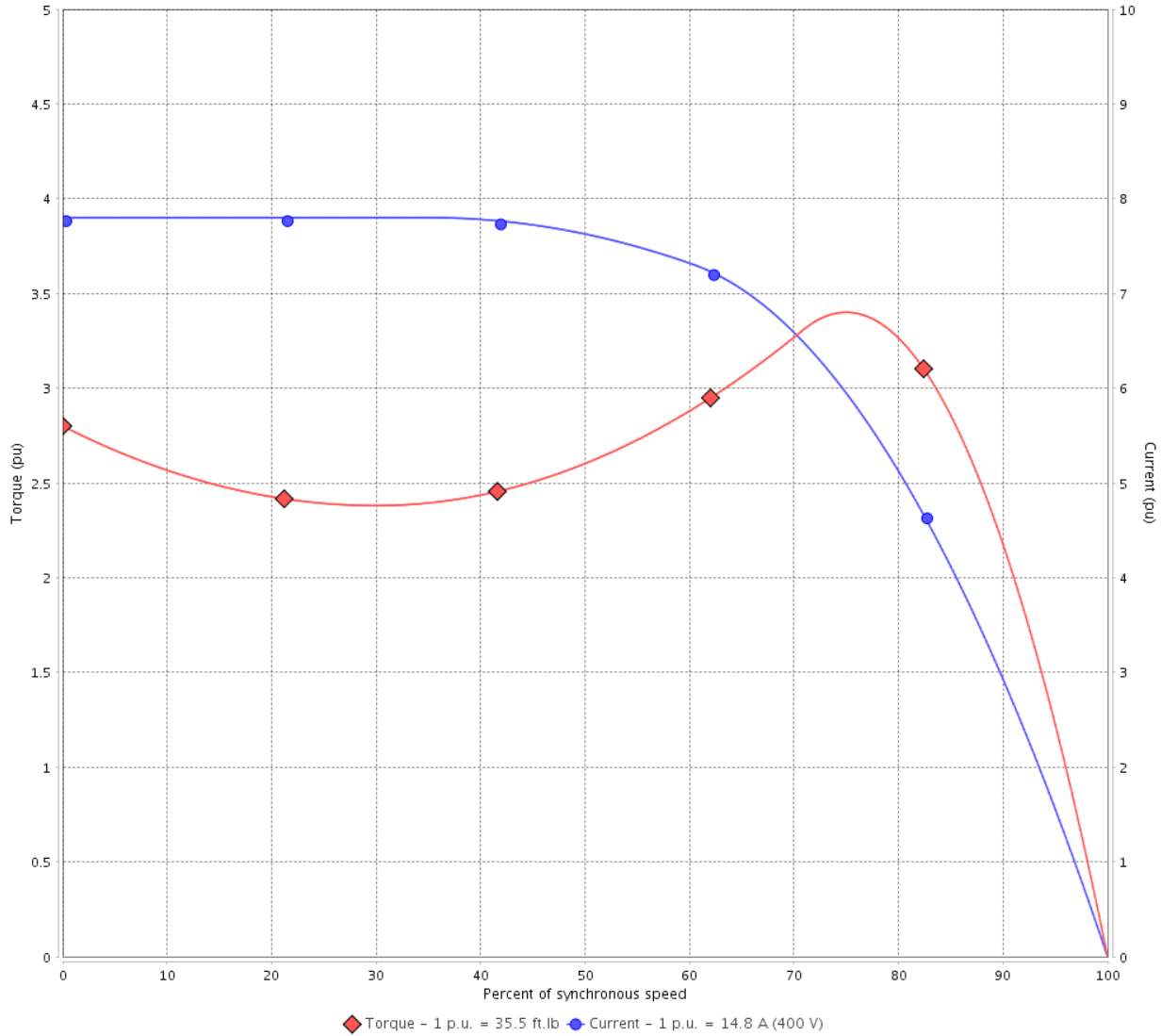
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12385115

Catalog # : 01518ST3QIE254T-W22

TORQUE AND CURRENT VS SPEED CURVE



Performance : 400 V 50 Hz 4P IE3

|                     |              |                       |                 |
|---------------------|--------------|-----------------------|-----------------|
| Rated current       | : 14.8 A     | Moment of inertia (J) | : 2.62 sq.ft.lb |
| LRC                 | : 7.8        | Duty cycle            | : Cont.(S1)     |
| Rated torque        | : 35.5 ft.lb | Insulation class      | : F             |
| Locked rotor torque | : 280 %      | Service factor        | : 1.25          |
| Breakdown torque    | : 340 %      | Temperature rise      | : 80 K          |
| Rated speed         | : 1480 rpm   | Design                | : B             |

Locked rotor time : 63s (cold) 35s (hot)

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# TORQUE AND CURRENT VS SPEED CURVE



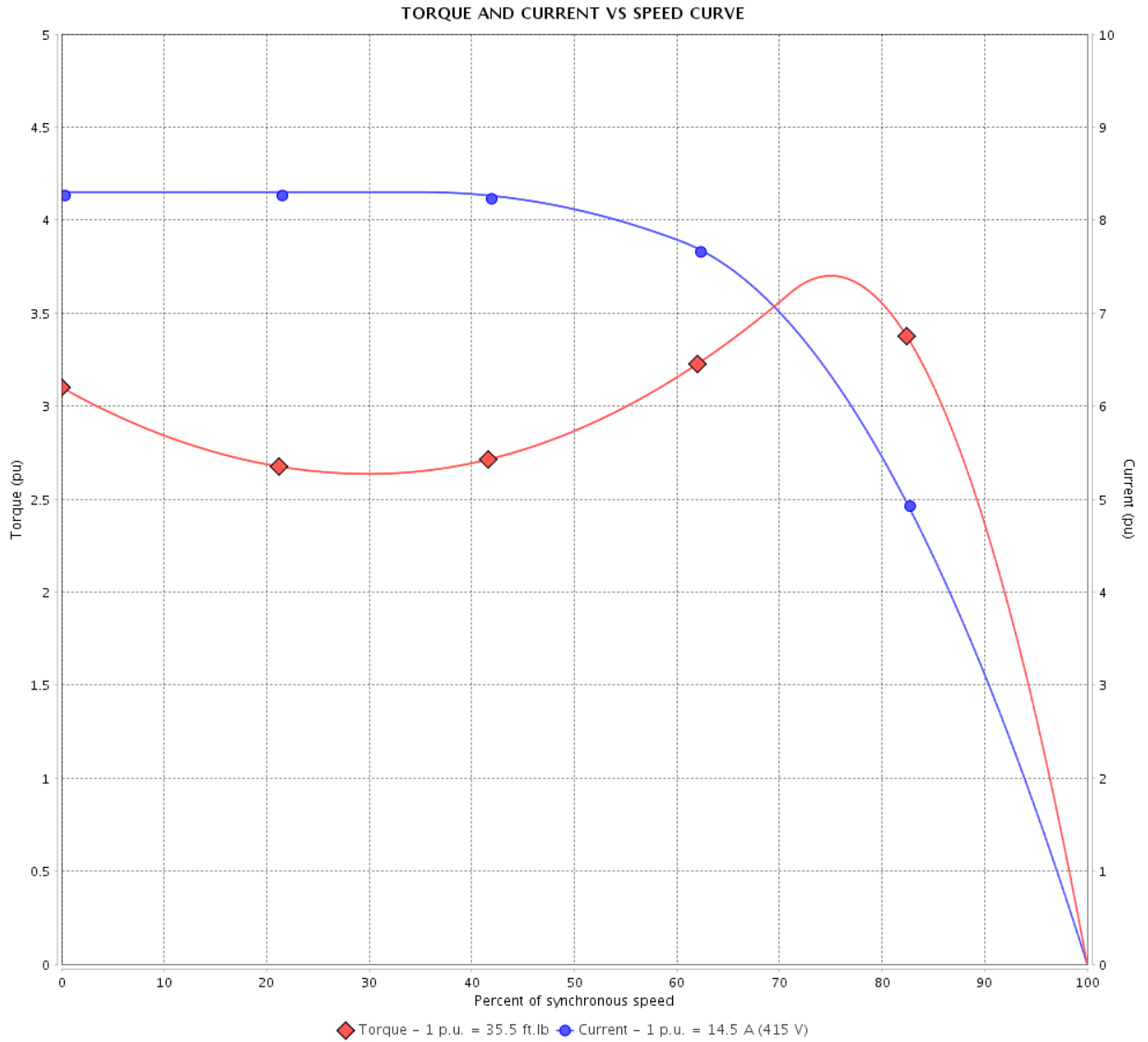
## Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12385115

Catalog # : 01518ST3QIE254T-W22



Performance : 415 V 50 Hz 4P IE3

|                     |              |                       |                 |
|---------------------|--------------|-----------------------|-----------------|
| Rated current       | : 14.5 A     | Moment of inertia (J) | : 2.62 sq.ft.lb |
| LRC                 | : 8.3        | Duty cycle            | : Cont.(S1)     |
| Rated torque        | : 35.5 ft.lb | Insulation class      | : F             |
| Locked rotor torque | : 310 %      | Service factor        | : 1.25          |
| Breakdown torque    | : 370 %      | Temperature rise      | : 80 K          |
| Rated speed         | : 1480 rpm   | Design                | : B             |

Locked rotor time : 57s (cold) 32s (hot)

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# TORQUE AND CURRENT VS SPEED CURVE

Three Phase Induction Motor - Squirrel Cage

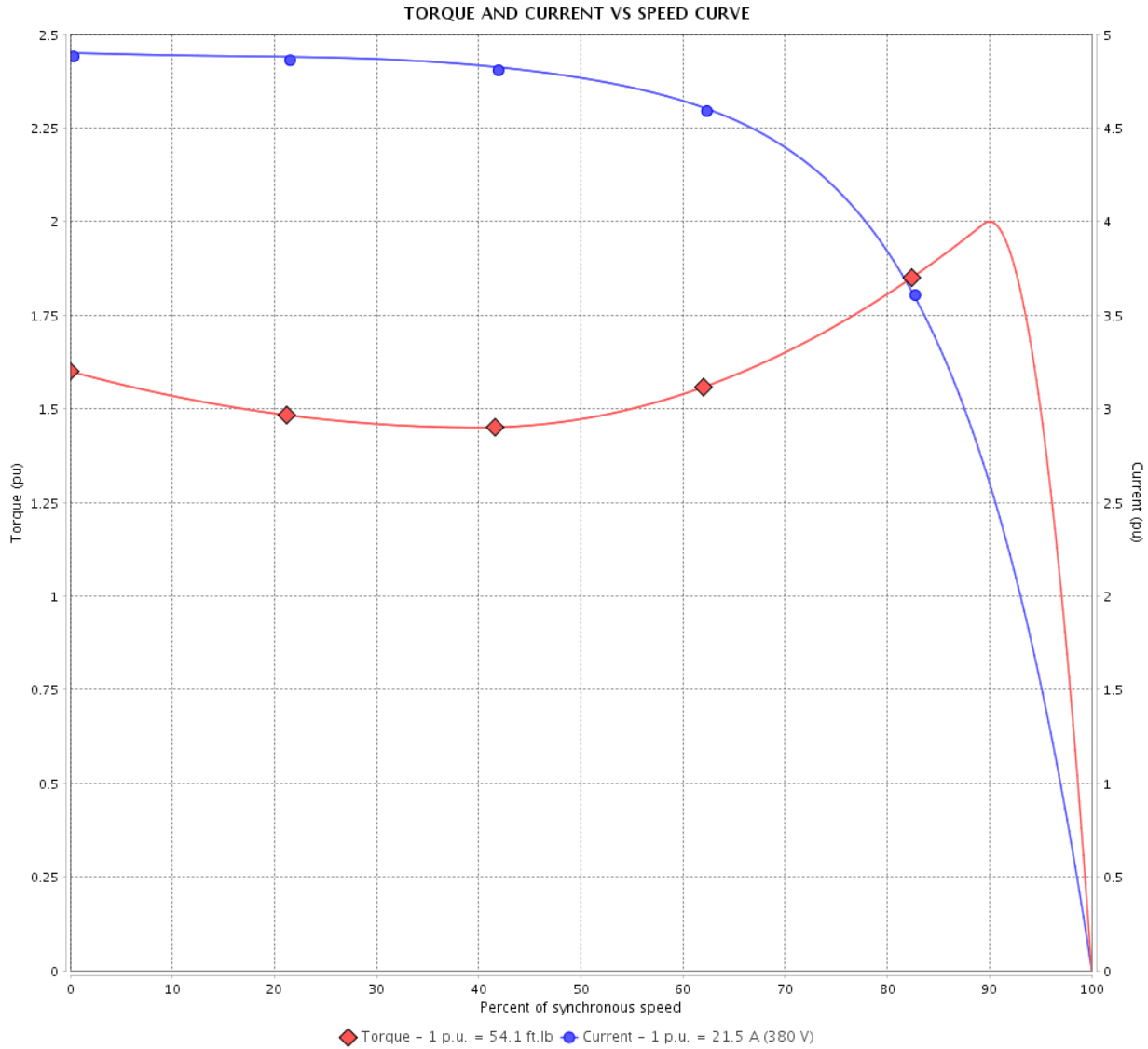


Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12385115

Catalog # : 01518ST3QIE254T-W22



Performance : 380 V 50 Hz 4P IE2

|                     |              |                       |                 |
|---------------------|--------------|-----------------------|-----------------|
| Rated current       | : 21.5 A     | Moment of inertia (J) | : 2.62 sq.ft.lb |
| LRC                 | : 4.9        | Duty cycle            | : Cont.(S1)     |
| Rated torque        | : 54.1 ft.lb | Insulation class      | : F             |
| Locked rotor torque | : 160 %      | Service factor        | : 1.00          |
| Breakdown torque    | : 200 %      | Temperature rise      | : 80 K          |
| Rated speed         | : 1455 rpm   | Design                | : B             |

Locked rotor time : 43s (cold) 24s (hot)

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# TORQUE AND CURRENT VS SPEED CURVE



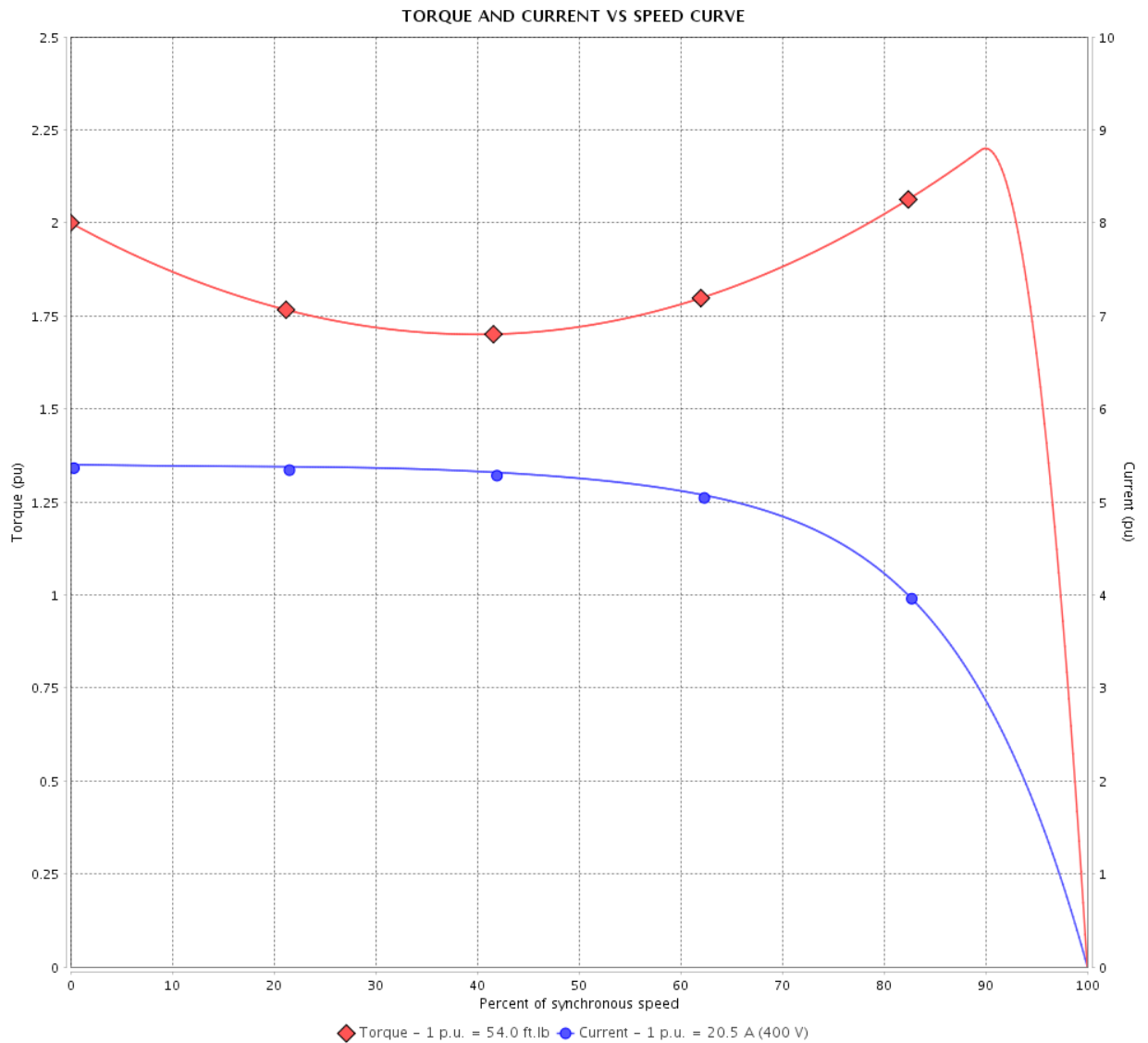
## Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12385115

Catalog # : 01518ST3QIE254T-W22



Performance : 400 V 50 Hz 4P IE2

|                     |              |                       |                 |
|---------------------|--------------|-----------------------|-----------------|
| Rated current       | : 20.5 A     | Moment of inertia (J) | : 2.62 sq.ft.lb |
| LRC                 | : 5.4        | Duty cycle            | : Cont.(S1)     |
| Rated torque        | : 54.0 ft.lb | Insulation class      | : F             |
| Locked rotor torque | : 200 %      | Service factor        | : 1.00          |
| Breakdown torque    | : 220 %      | Temperature rise      | : 80 K          |
| Rated speed         | : 1460 rpm   | Design                | : B             |

Locked rotor time : 41s (cold) 23s (hot)

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

## Three Phase Induction Motor - Squirrel Cage



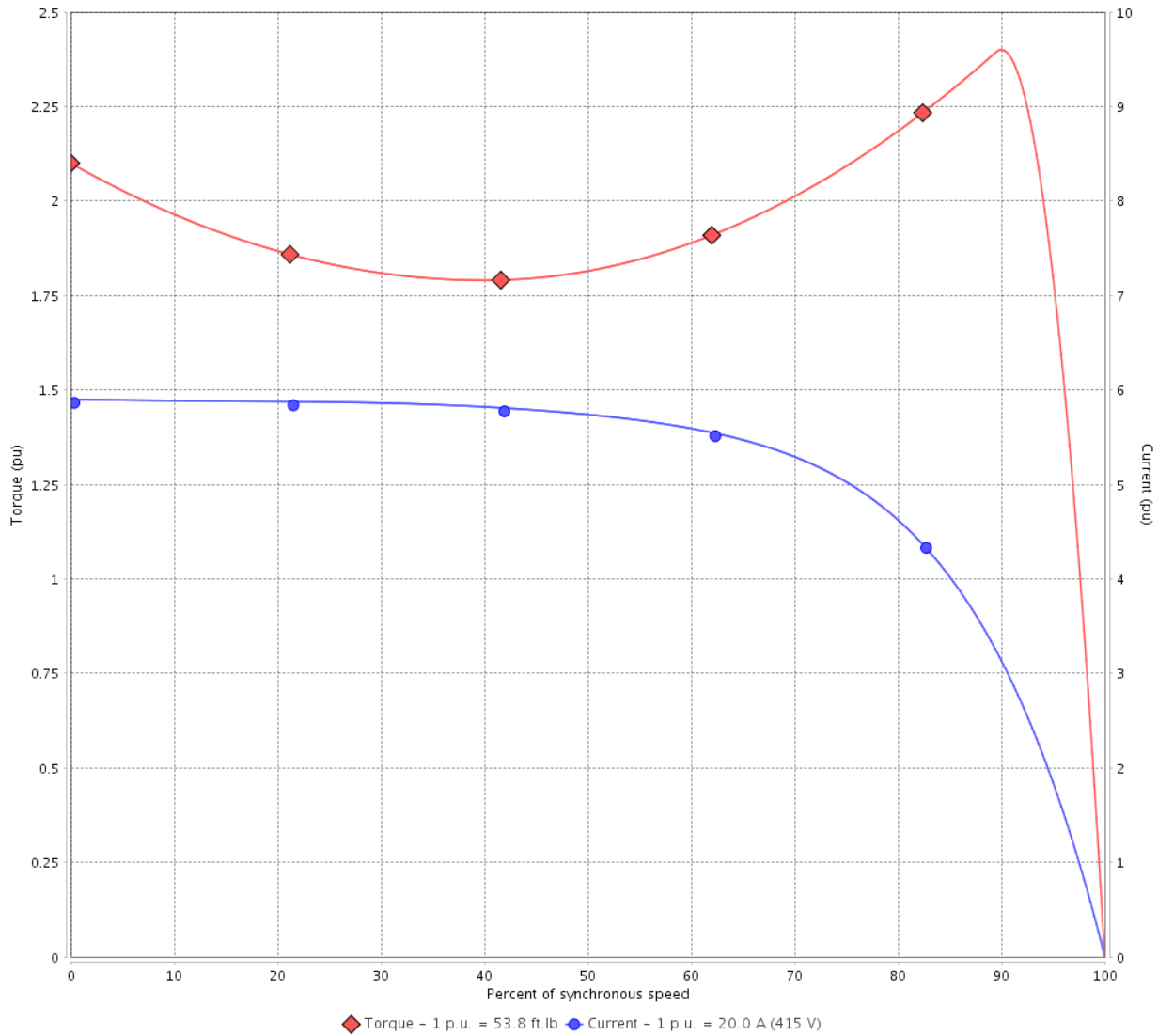
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12385115

Catalog # : 01518ST3QIE254T-W22

TORQUE AND CURRENT VS SPEED CURVE



Performance : 415 V 50 Hz 4P IE2

|                     |              |                       |                 |
|---------------------|--------------|-----------------------|-----------------|
| Rated current       | : 20.0 A     | Moment of inertia (J) | : 2.62 sq.ft.lb |
| LRC                 | : 5.9        | Duty cycle            | : Cont.(S1)     |
| Rated torque        | : 53.8 ft.lb | Insulation class      | : F             |
| Locked rotor torque | : 210 %      | Service factor        | : 1.00          |
| Breakdown torque    | : 240 %      | Temperature rise      | : 80 K          |
| Rated speed         | : 1465 rpm   | Design                | : B             |

Locked rotor time : 37s (cold) 21s (hot)

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# LOAD PERFORMANCE CURVE

## Three Phase Induction Motor - Squirrel Cage

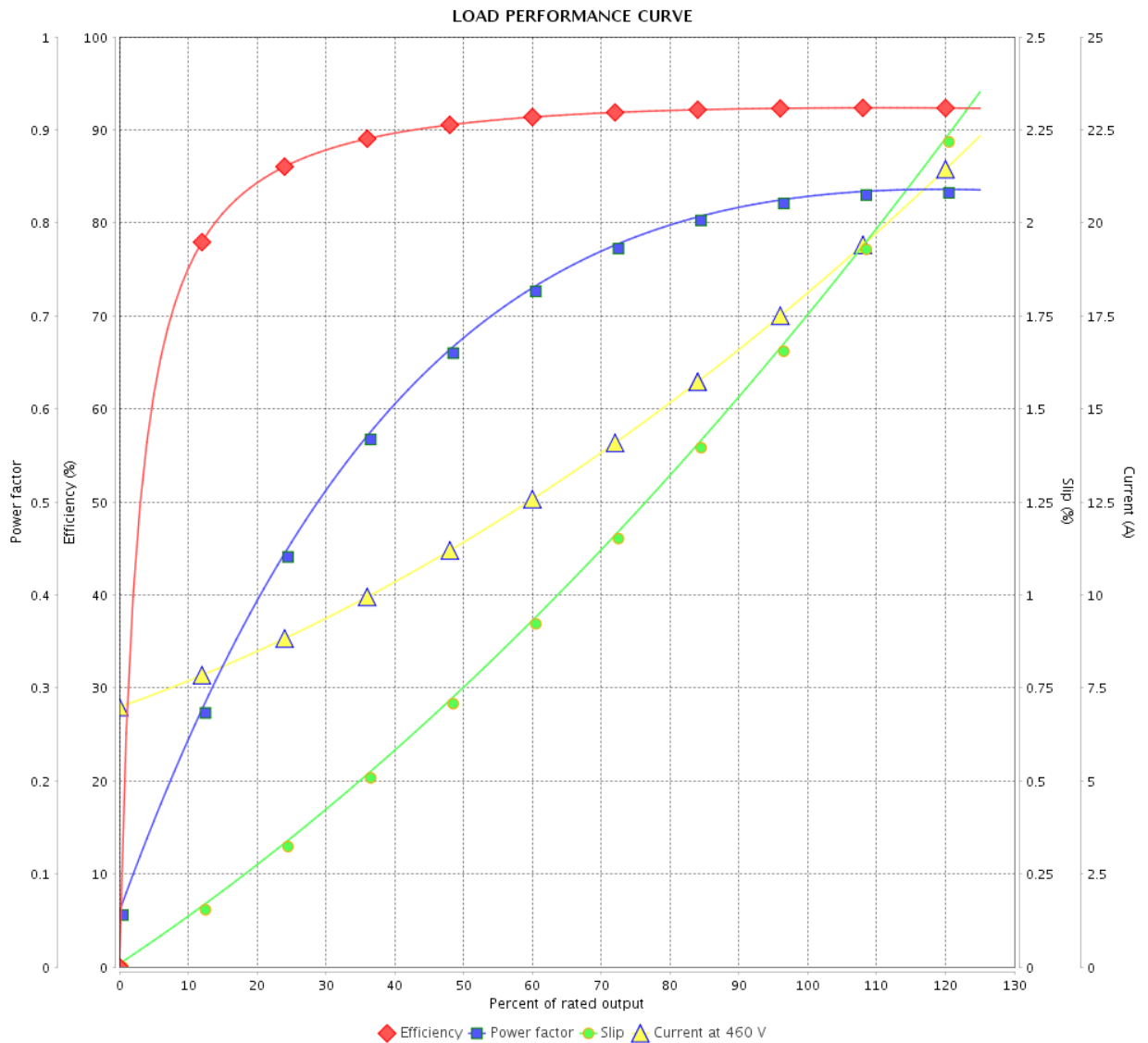


Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12385115

Catalog # : 01518ST3QIE254T-W22



Performance : 460 V 60 Hz 4P

Rated current : 18.0 A  
 LRC : 6.4  
 Rated torque : 44.6 ft.lb  
 Locked rotor torque : 220 %  
 Breakdown torque : 260 %  
 Rated speed : 1770 rpm

Moment of inertia (J) : 2.62 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.25  
 Temperature rise : 80 K  
 Design : B

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

Three Phase Induction Motor - Squirrel Cage



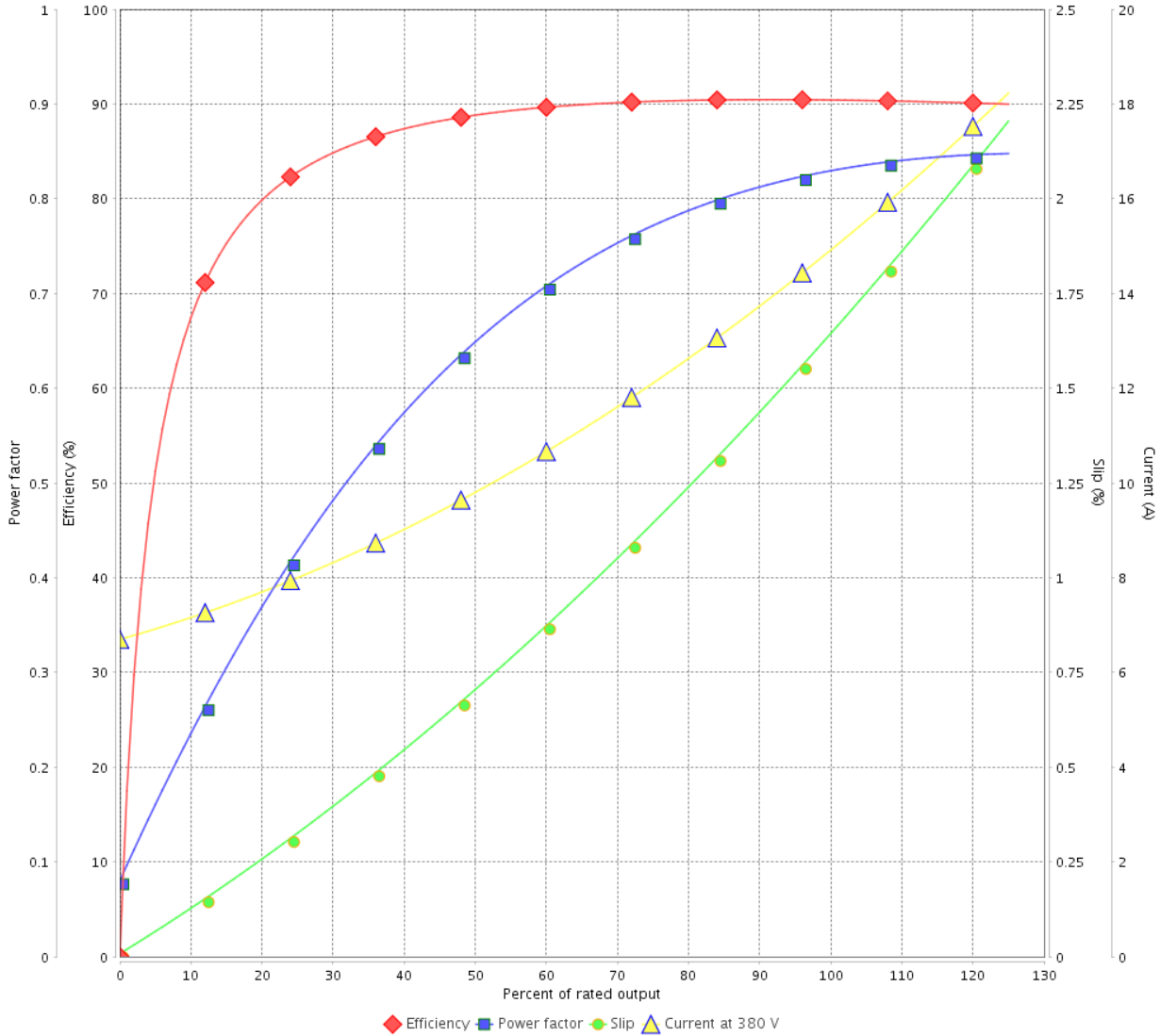
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12385115

Catalog # : 01518ST3QIE254T-W22

LOAD PERFORMANCE CURVE



Performance : 380 V 50 Hz 4P IE3

Rated current : 15.2 A  
 LRC : 7.2  
 Rated torque : 35.6 ft.lb  
 Locked rotor torque : 250 %  
 Breakdown torque : 300 %  
 Rated speed : 1475 rpm

Moment of inertia (J) : 2.62 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.25  
 Temperature rise : 80 K  
 Design : B

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# LOAD PERFORMANCE CURVE

## Three Phase Induction Motor - Squirrel Cage

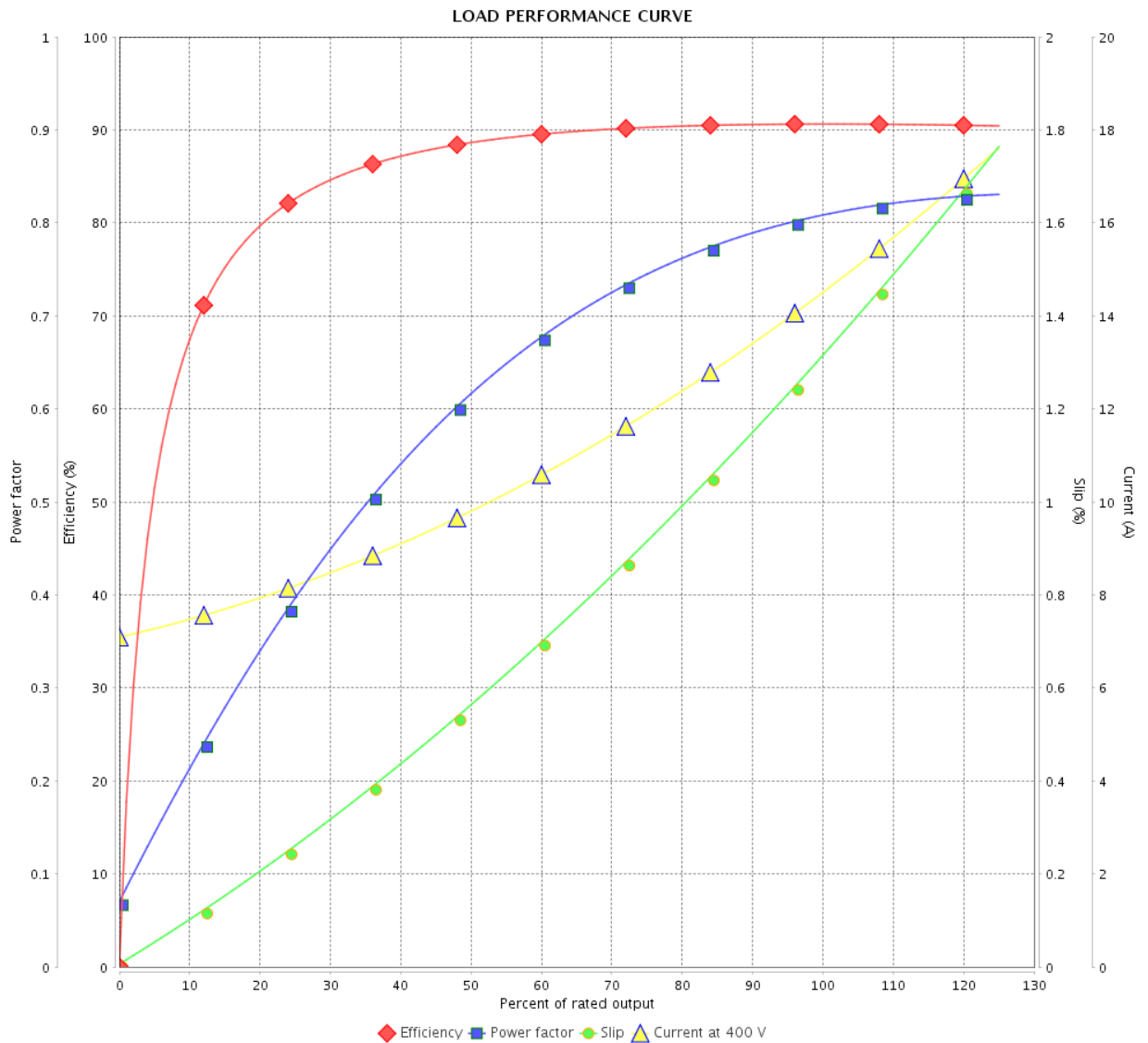


Customer : \_\_\_\_\_

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12385115

Catalog # : 01518ST3QIE254T-W22



Performance : 400 V 50 Hz 4P IE3

Rated current : 14.8 A  
 LRC : 7.8  
 Rated torque : 35.5 ft.lb  
 Locked rotor torque : 280 %  
 Breakdown torque : 340 %  
 Rated speed : 1480 rpm

Moment of inertia (J) : 2.62 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.25  
 Temperature rise : 80 K  
 Design : B

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

Three Phase Induction Motor - Squirrel Cage



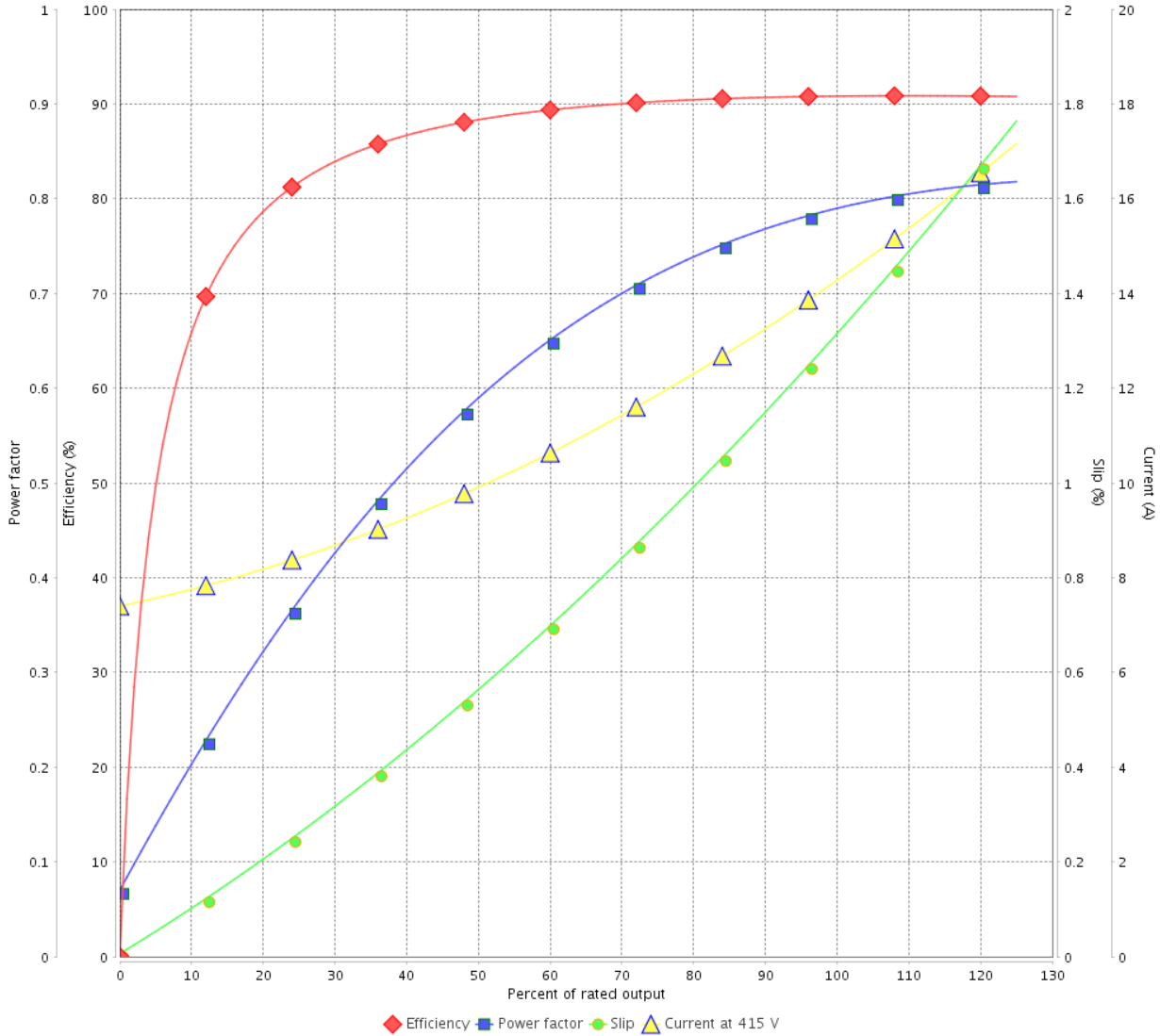
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Product code : 12385115

Catalog # : 01518ST3QIE254T-W22

LOAD PERFORMANCE CURVE



Performance : 415 V 50 Hz 4P IE3

Rated current : 14.5 A  
 LRC : 8.3  
 Rated torque : 35.5 ft.lb  
 Locked rotor torque : 310 %  
 Breakdown torque : 370 %  
 Rated speed : 1480 rpm

Moment of inertia (J) : 2.62 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.25  
 Temperature rise : 80 K  
 Design : B

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

## Three Phase Induction Motor - Squirrel Cage

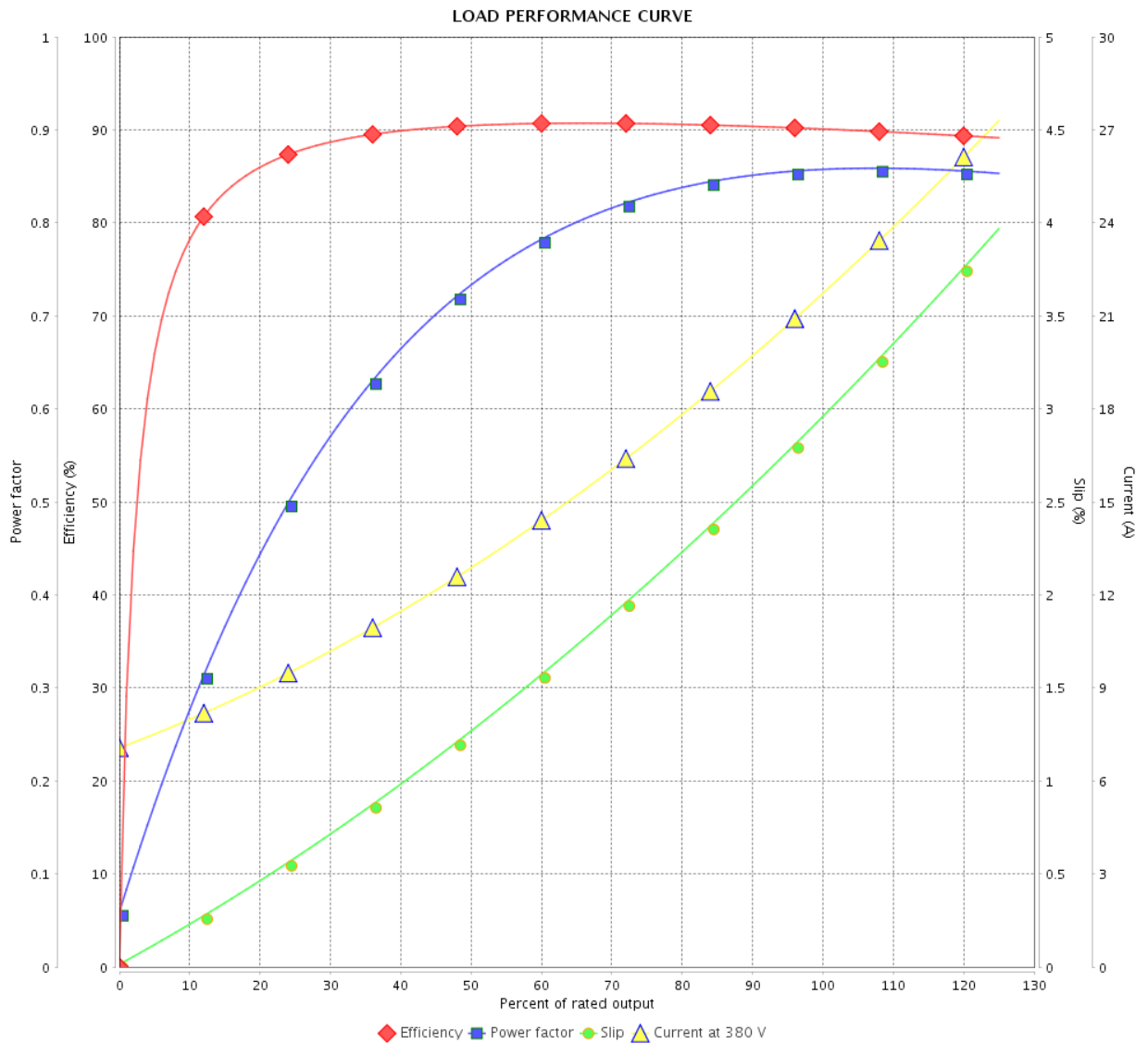


Customer : \_\_\_\_\_

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12385115

Catalog # : 01518ST3QIE254T-W22



Performance : 380 V 50 Hz 4P IE2

Rated current : 21.5 A  
 LRC : 4.9  
 Rated torque : 54.1 ft.lb  
 Locked rotor torque : 160 %  
 Breakdown torque : 200 %  
 Rated speed : 1455 rpm

Moment of inertia (J) : 2.62 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : B

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# LOAD PERFORMANCE CURVE

Three Phase Induction Motor - Squirrel Cage



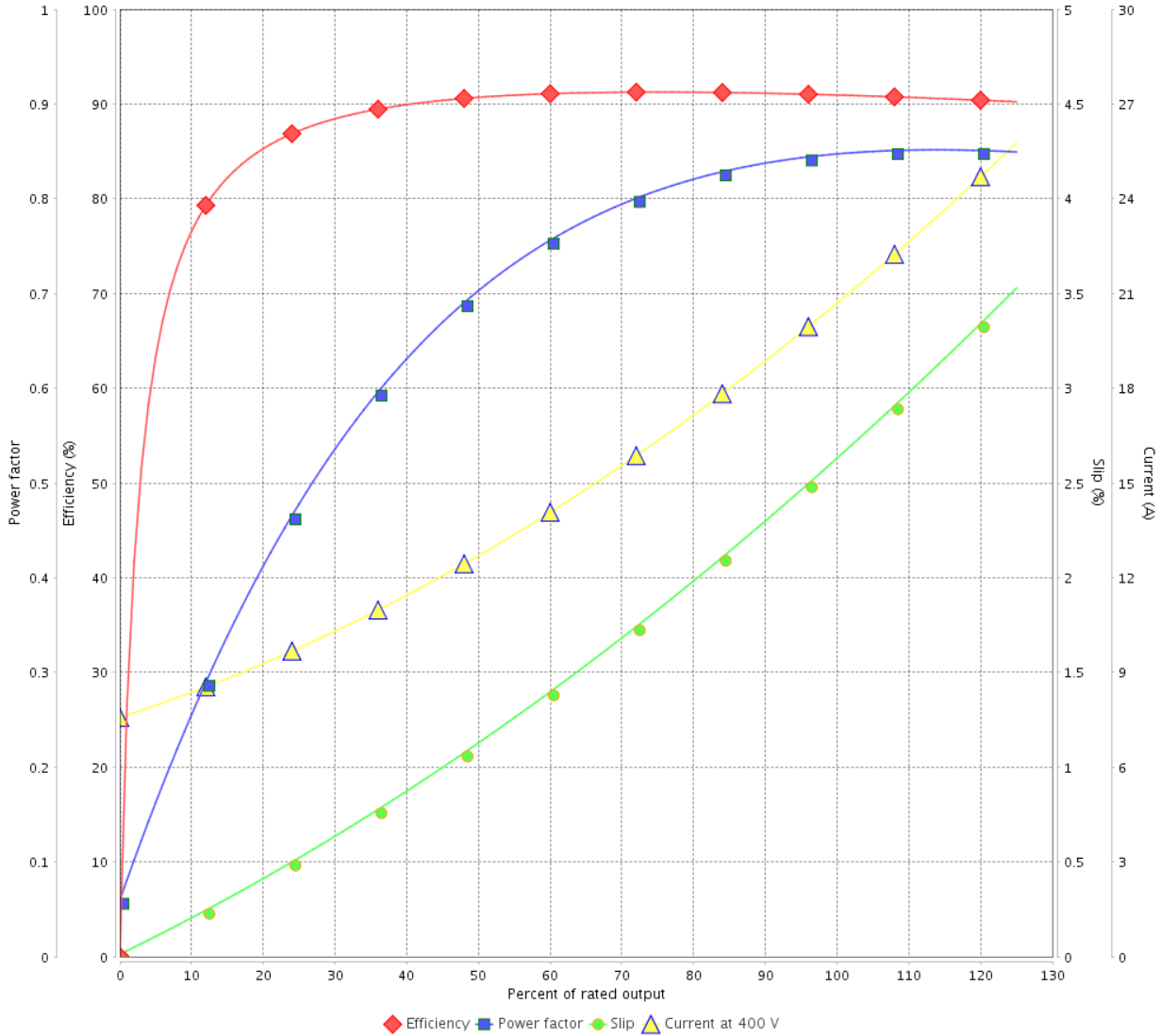
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Catalog # : 01518ST3QIE254T-W22

LOAD PERFORMANCE CURVE



Performance : 400 V 50 Hz 4P IE2

Rated current : 20.5 A  
 LRC : 5.4  
 Rated torque : 54.0 ft.lb  
 Locked rotor torque : 200 %  
 Breakdown torque : 220 %  
 Rated speed : 1460 rpm

Moment of inertia (J) : 2.62 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : B

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# LOAD PERFORMANCE CURVE

## Three Phase Induction Motor - Squirrel Cage

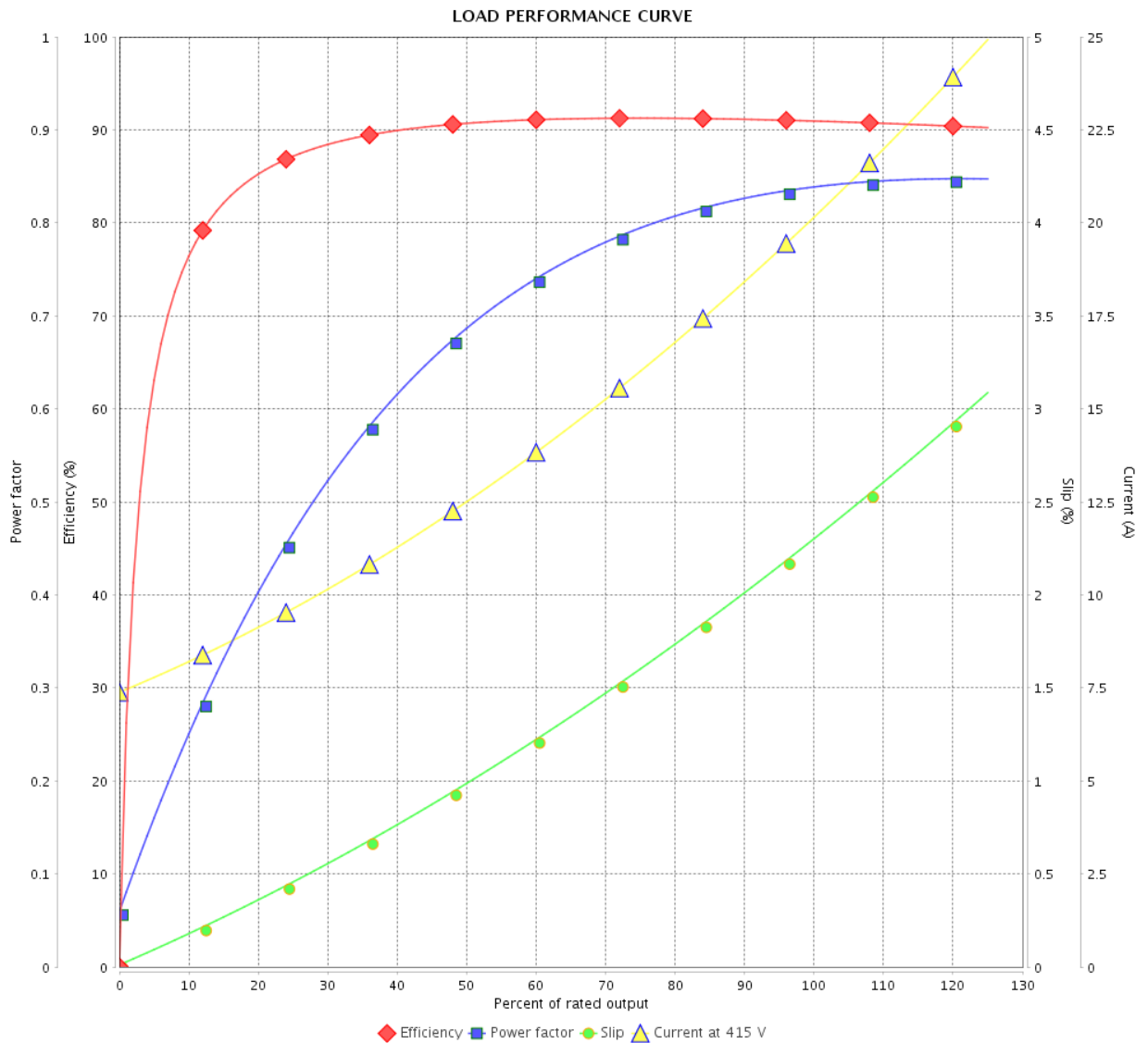


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Rated current : 20.0 A  
 LRC : 5.9  
 Rated torque : 53.8 ft.lb  
 Locked rotor torque : 210 %  
 Breakdown torque : 240 %  
 Rated speed : 1465 rpm

Moment of inertia (J) : 2.62 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : B

| Rev.         | Changes Summary | Performed | Checked  | Date |
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# THERMAL LIMIT CURVE



## Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : NEMA Premium Efficiency Three-Phase  
 Product code : 12385115  
 Catalog # : 01518ST3QIE254T-W22

Performance : 460 V 60 Hz 4P

|                             |                                       |
|-----------------------------|---------------------------------------|
| Rated current : 18.0 A      | Moment of inertia (J) : 2.62 sq.ft.lb |
| LRC : 6.4                   | Duty cycle : Cont.(S1)                |
| Rated torque : 44.6 ft.lb   | Insulation class : F                  |
| Locked rotor torque : 220 % | Service factor : 1.25                 |
| Breakdown torque : 260 %    | Temperature rise : 80 K               |
| Rated speed : 1770 rpm      | Design : B                            |

Heating constant

Cooling constant

| Rev.         | Changes Summary | Performed | Checked         | Date     |
|--------------|-----------------|-----------|-----------------|----------|
|              |                 |           |                 |          |
| Performed by |                 |           | Page<br>16 / 36 | Revision |
| Checked by   |                 |           |                 |          |
| Date         | 13/04/2022      |           |                 |          |

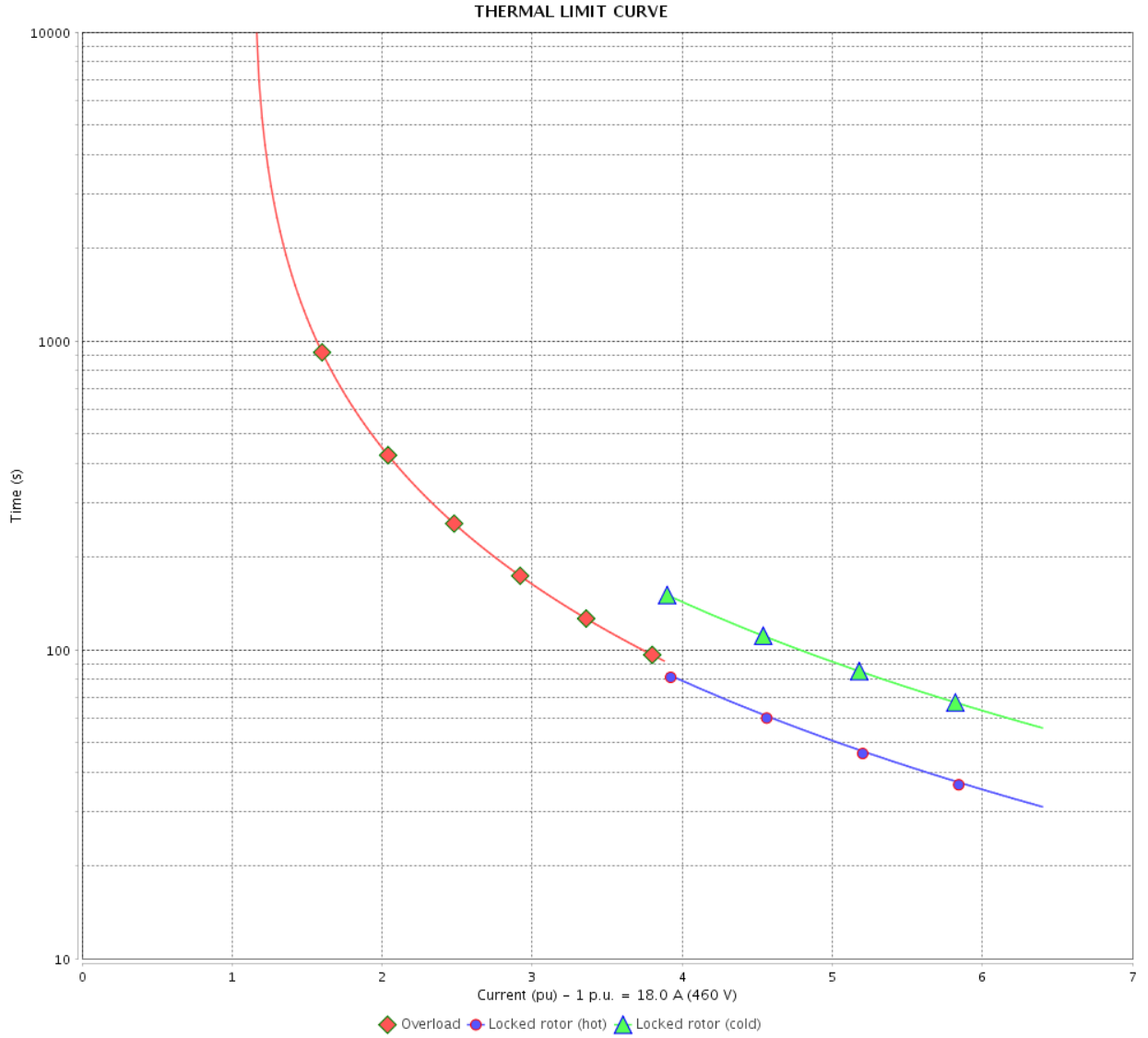


# THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



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



| Rev.         | Changes Summary | Performed  | Checked | Date     |
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| Date         |                 | 13/04/2022 |         |          |

# THERMAL LIMIT CURVE



## Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : NEMA Premium Efficiency Three-Phase  
Product code : 12385115  
Catalog # : 01518ST3QIE254T-W22

Performance : 380 V 50 Hz 4P IE3

|                     |              |                       |                 |
|---------------------|--------------|-----------------------|-----------------|
| Rated current       | : 15.2 A     | Moment of inertia (J) | : 2.62 sq.ft.lb |
| LRC                 | : 7.2        | Duty cycle            | : Cont.(S1)     |
| Rated torque        | : 35.6 ft.lb | Insulation class      | : F             |
| Locked rotor torque | : 250 %      | Service factor        | : 1.25          |
| Breakdown torque    | : 300 %      | Temperature rise      | : 80 K          |
| Rated speed         | : 1475 rpm   | Design                | : B             |

Heating constant

Cooling constant

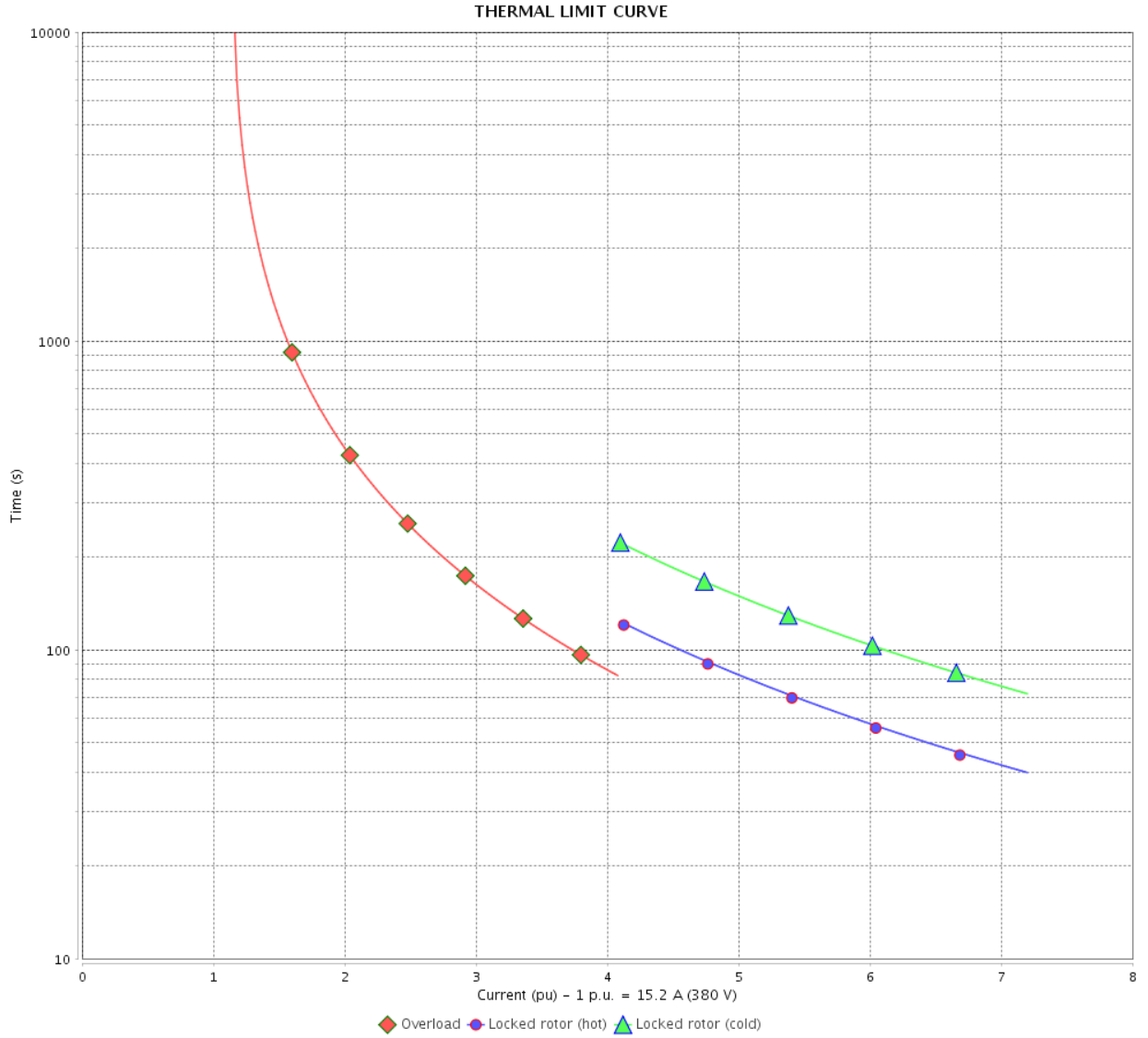
| Rev.         | Changes Summary | Performed | Checked | Date     |
|--------------|-----------------|-----------|---------|----------|
| Performed by |                 |           |         |          |
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# THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



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



| Rev.         | Changes Summary | Performed       | Checked | Date     |
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| Checked by   |                 |                 |         |          |
| Date         |                 |                 |         |          |

# THERMAL LIMIT CURVE



## Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : NEMA Premium Efficiency Three-Phase  
Product code : 12385115  
Catalog # : 01518ST3QIE254T-W22

Performance : 400 V 50 Hz 4P IE3

|                     |              |                       |                 |
|---------------------|--------------|-----------------------|-----------------|
| Rated current       | : 14.8 A     | Moment of inertia (J) | : 2.62 sq.ft.lb |
| LRC                 | : 7.8        | Duty cycle            | : Cont.(S1)     |
| Rated torque        | : 35.5 ft.lb | Insulation class      | : F             |
| Locked rotor torque | : 280 %      | Service factor        | : 1.25          |
| Breakdown torque    | : 340 %      | Temperature rise      | : 80 K          |
| Rated speed         | : 1480 rpm   | Design                | : B             |

Heating constant

Cooling constant

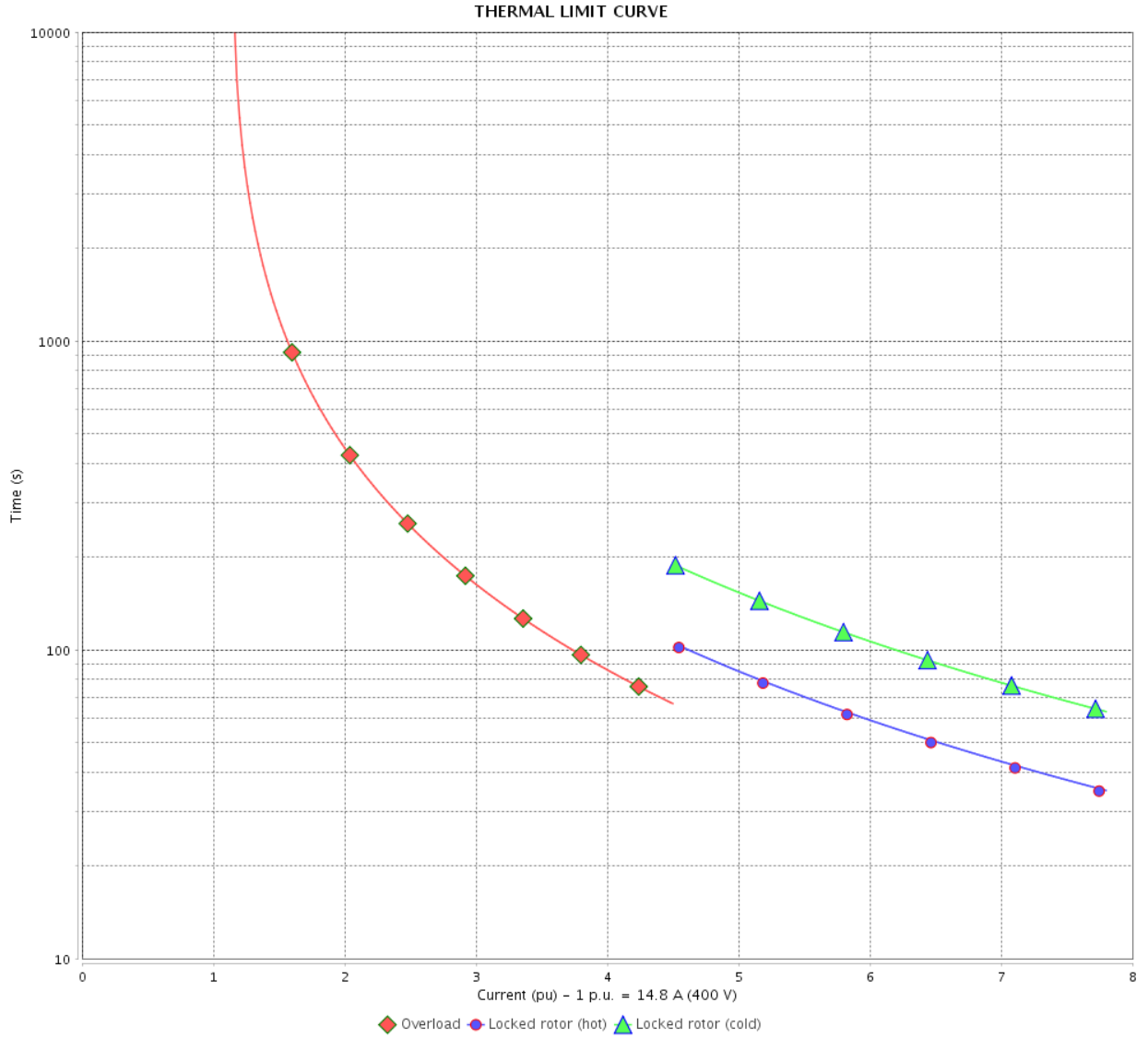
| Rev.         | Changes Summary | Performed | Checked | Date     |
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| Performed by |                 |           |         |          |
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# THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



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



| Rev.         | Changes Summary | Performed       | Checked | Date     |
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| Checked by   |                 |                 |         |          |
| Date         |                 |                 |         |          |

# THERMAL LIMIT CURVE

## Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : NEMA Premium Efficiency Three-Phase  
Product code : 12385115  
Catalog # : 01518ST3QIE254T-W22

Performance : 415 V 50 Hz 4P IE3

|                     |              |                       |                 |
|---------------------|--------------|-----------------------|-----------------|
| Rated current       | : 14.5 A     | Moment of inertia (J) | : 2.62 sq.ft.lb |
| LRC                 | : 8.3        | Duty cycle            | : Cont.(S1)     |
| Rated torque        | : 35.5 ft.lb | Insulation class      | : F             |
| Locked rotor torque | : 310 %      | Service factor        | : 1.25          |
| Breakdown torque    | : 370 %      | Temperature rise      | : 80 K          |
| Rated speed         | : 1480 rpm   | Design                | : B             |

Heating constant

Cooling constant

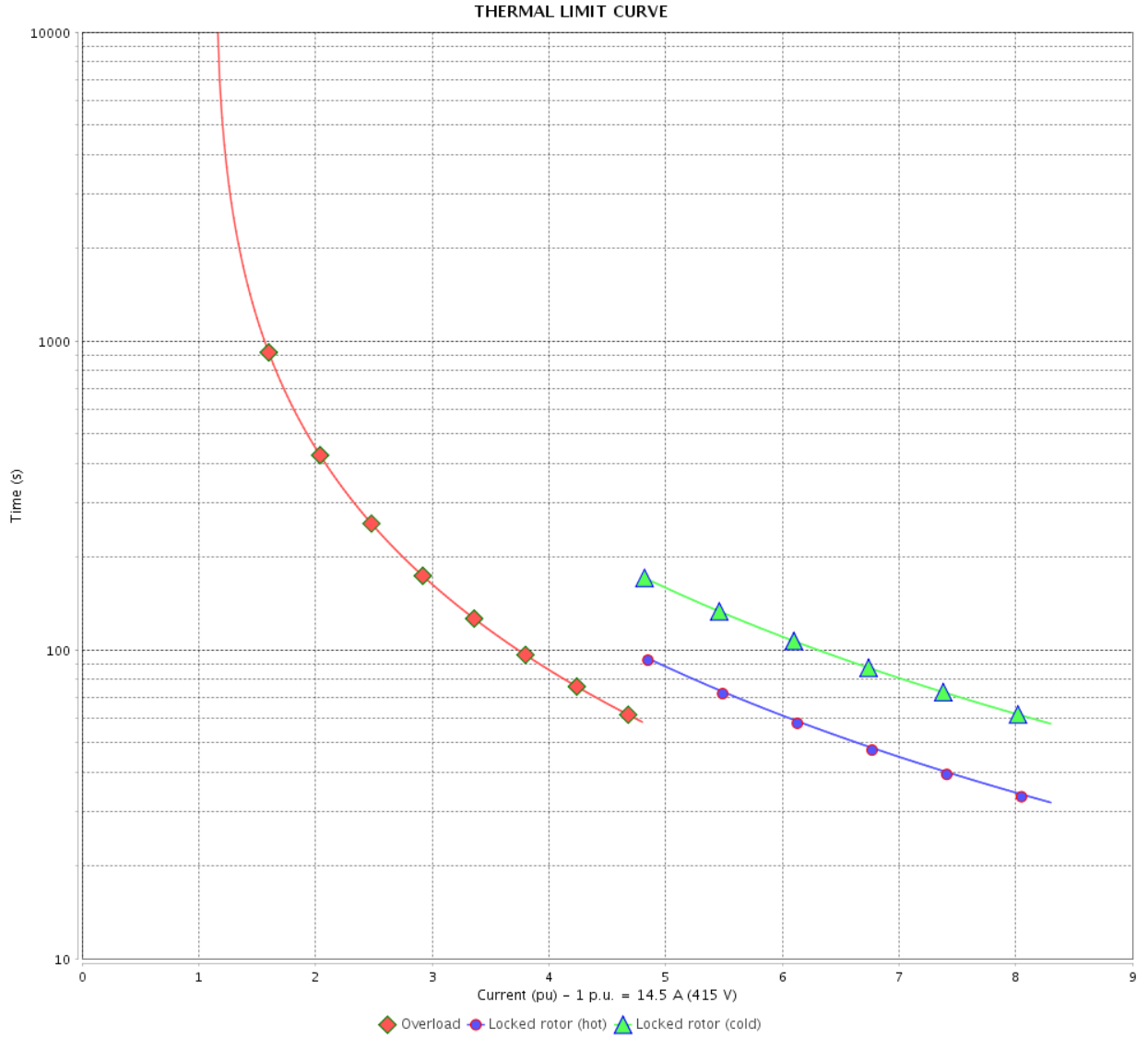
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| Checked by   |                 |           | Page    | Revision |
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# THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



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



| Rev.         | Changes Summary | Performed  | Checked | Date     |
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| Date         |                 | 13/04/2022 |         |          |

# THERMAL LIMIT CURVE

## Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : NEMA Premium Efficiency Three-Phase  
Product code : 12385115  
Catalog # : 01518ST3QIE254T-W22

Performance : 380 V 50 Hz 4P IE2

|                     |              |                       |                 |
|---------------------|--------------|-----------------------|-----------------|
| Rated current       | : 21.5 A     | Moment of inertia (J) | : 2.62 sq.ft.lb |
| LRC                 | : 4.9        | Duty cycle            | : Cont.(S1)     |
| Rated torque        | : 54.1 ft.lb | Insulation class      | : F             |
| Locked rotor torque | : 160 %      | Service factor        | : 1.00          |
| Breakdown torque    | : 200 %      | Temperature rise      | : 80 K          |
| Rated speed         | : 1455 rpm   | Design                | : B             |

Heating constant

Cooling constant

| Rev.         | Changes Summary | Performed | Checked | Date     |
|--------------|-----------------|-----------|---------|----------|
|              |                 |           |         |          |
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| Checked by   |                 |           | Page    | Revision |
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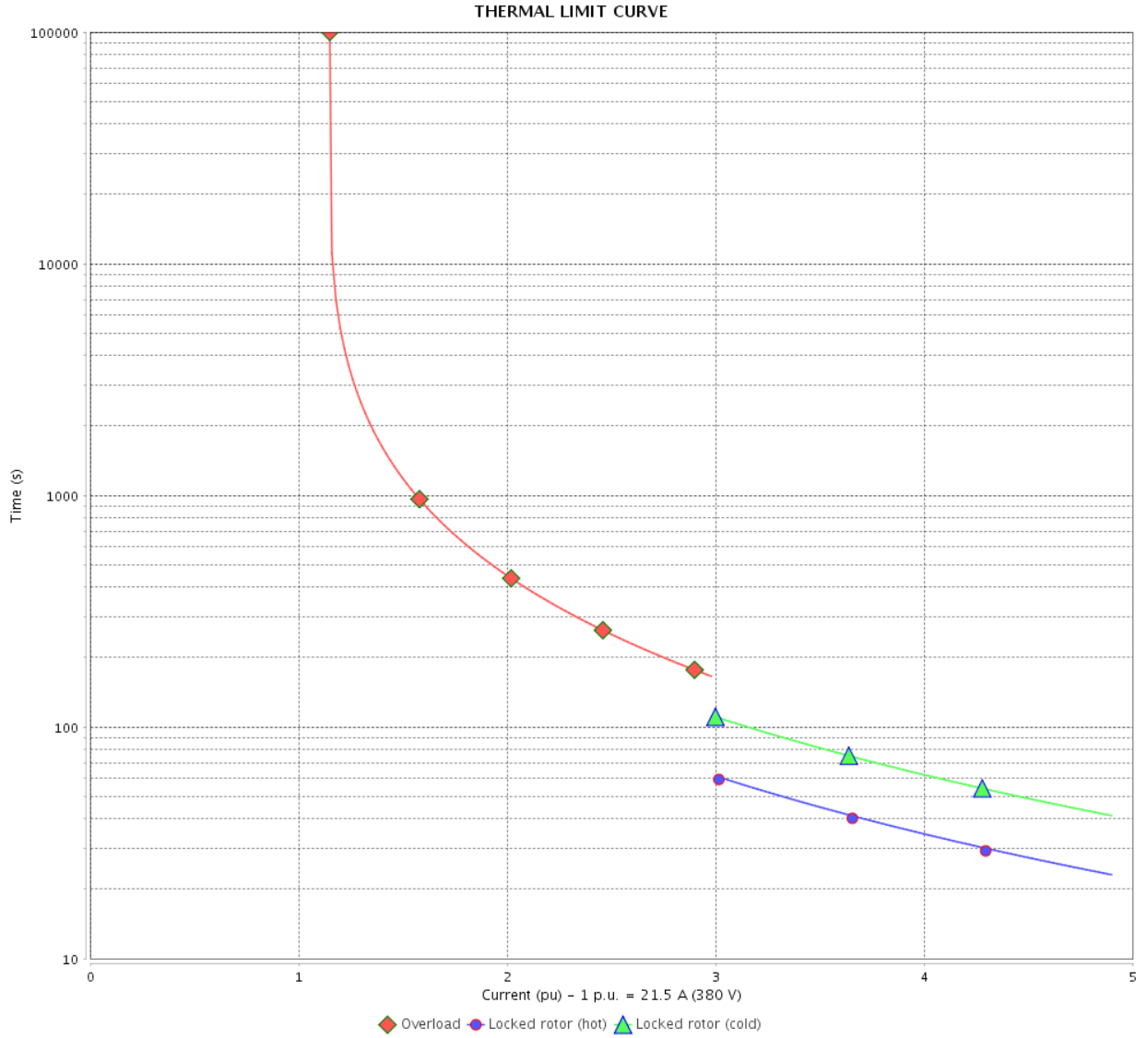


# THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



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



| Rev.         | Changes Summary | Performed       | Checked | Date     |
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| Date         |                 |                 |         |          |

# THERMAL LIMIT CURVE



## Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : NEMA Premium Efficiency Three-Phase  
Product code : 12385115  
Catalog # : 01518ST3QIE254T-W22

Performance : 400 V 50 Hz 4P IE2

|                     |              |                       |                 |
|---------------------|--------------|-----------------------|-----------------|
| Rated current       | : 20.5 A     | Moment of inertia (J) | : 2.62 sq.ft.lb |
| LRC                 | : 5.4        | Duty cycle            | : Cont.(S1)     |
| Rated torque        | : 54.0 ft.lb | Insulation class      | : F             |
| Locked rotor torque | : 200 %      | Service factor        | : 1.00          |
| Breakdown torque    | : 220 %      | Temperature rise      | : 80 K          |
| Rated speed         | : 1460 rpm   | Design                | : B             |

Heating constant

Cooling constant

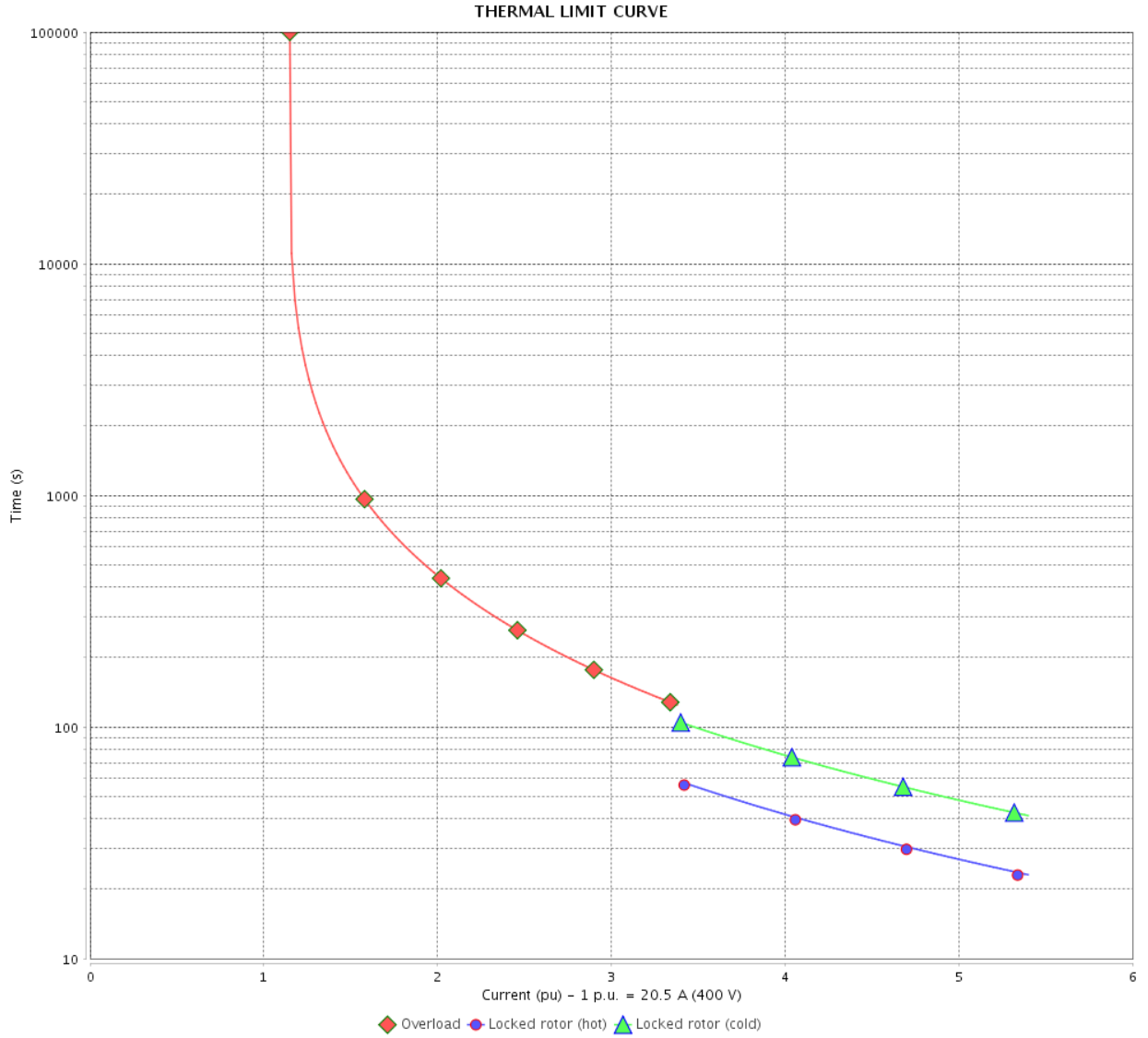
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|--------------|-----------------|-----------|-----------------|----------|
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| Checked by   |                 |           |                 |          |
| Date         | 13/04/2022      |           | Page<br>26 / 36 | Revision |

# THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



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



| Rev.         | Changes Summary | Performed       | Checked | Date     |
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| Checked by   |                 |                 |         |          |
| Date         |                 |                 |         |          |

# THERMAL LIMIT CURVE



## Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : NEMA Premium Efficiency Three-Phase  
Product code : 12385115  
Catalog # : 01518ST3QIE254T-W22

Performance : 415 V 50 Hz 4P IE2

|                     |              |                       |                 |
|---------------------|--------------|-----------------------|-----------------|
| Rated current       | : 20.0 A     | Moment of inertia (J) | : 2.62 sq.ft.lb |
| LRC                 | : 5.9        | Duty cycle            | : Cont.(S1)     |
| Rated torque        | : 53.8 ft.lb | Insulation class      | : F             |
| Locked rotor torque | : 210 %      | Service factor        | : 1.00          |
| Breakdown torque    | : 240 %      | Temperature rise      | : 80 K          |
| Rated speed         | : 1465 rpm   | Design                | : B             |

Heating constant

Cooling constant

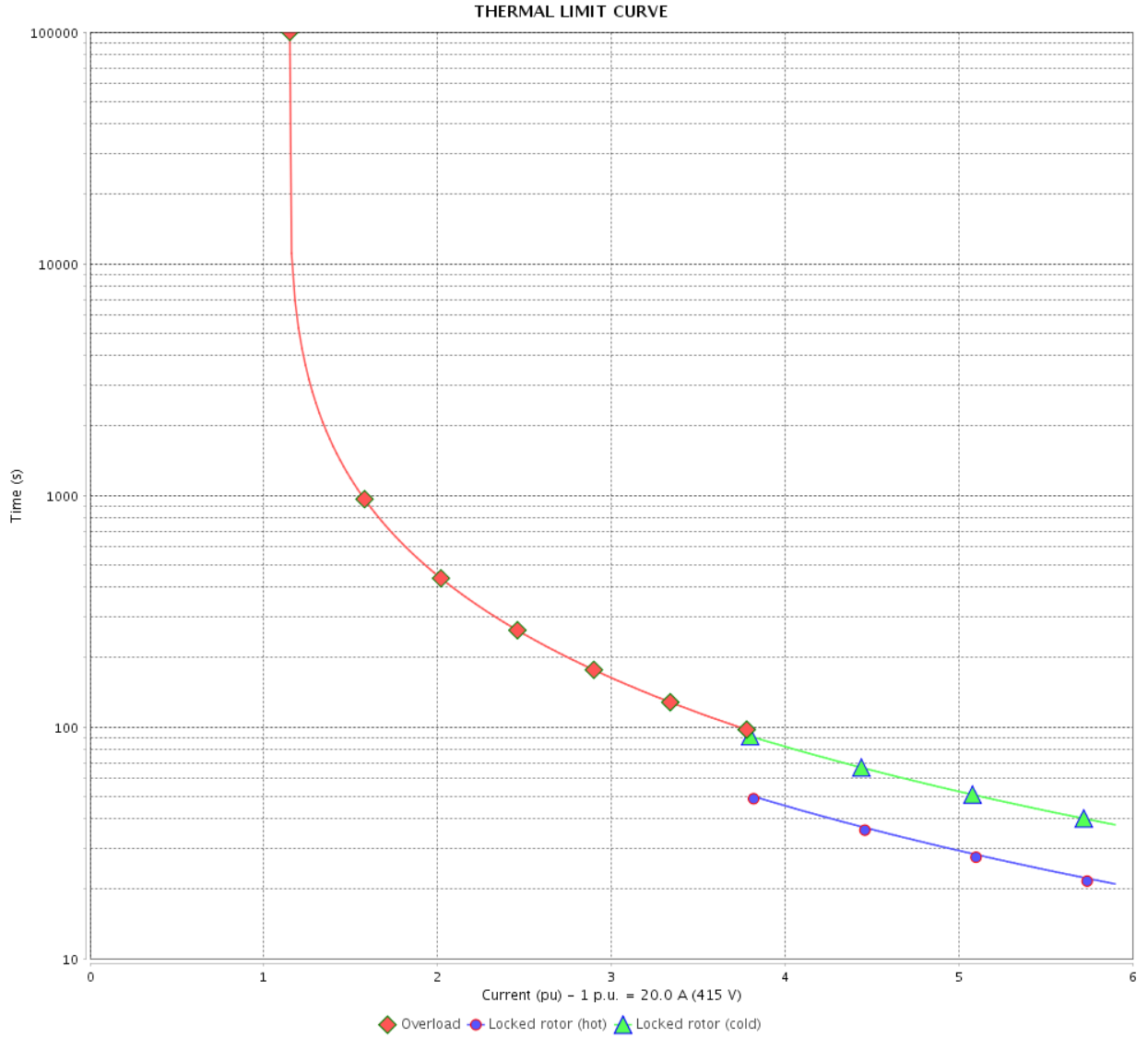
| Rev.         | Changes Summary | Performed | Checked | Date     |
|--------------|-----------------|-----------|---------|----------|
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| Checked by   |                 |           | Page    | Revision |
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#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

Three Phase Induction Motor - Squirrel Cage



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



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| Checked by   |                 |                 |         |          |
| Date         |                 |                 |         |          |

# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage



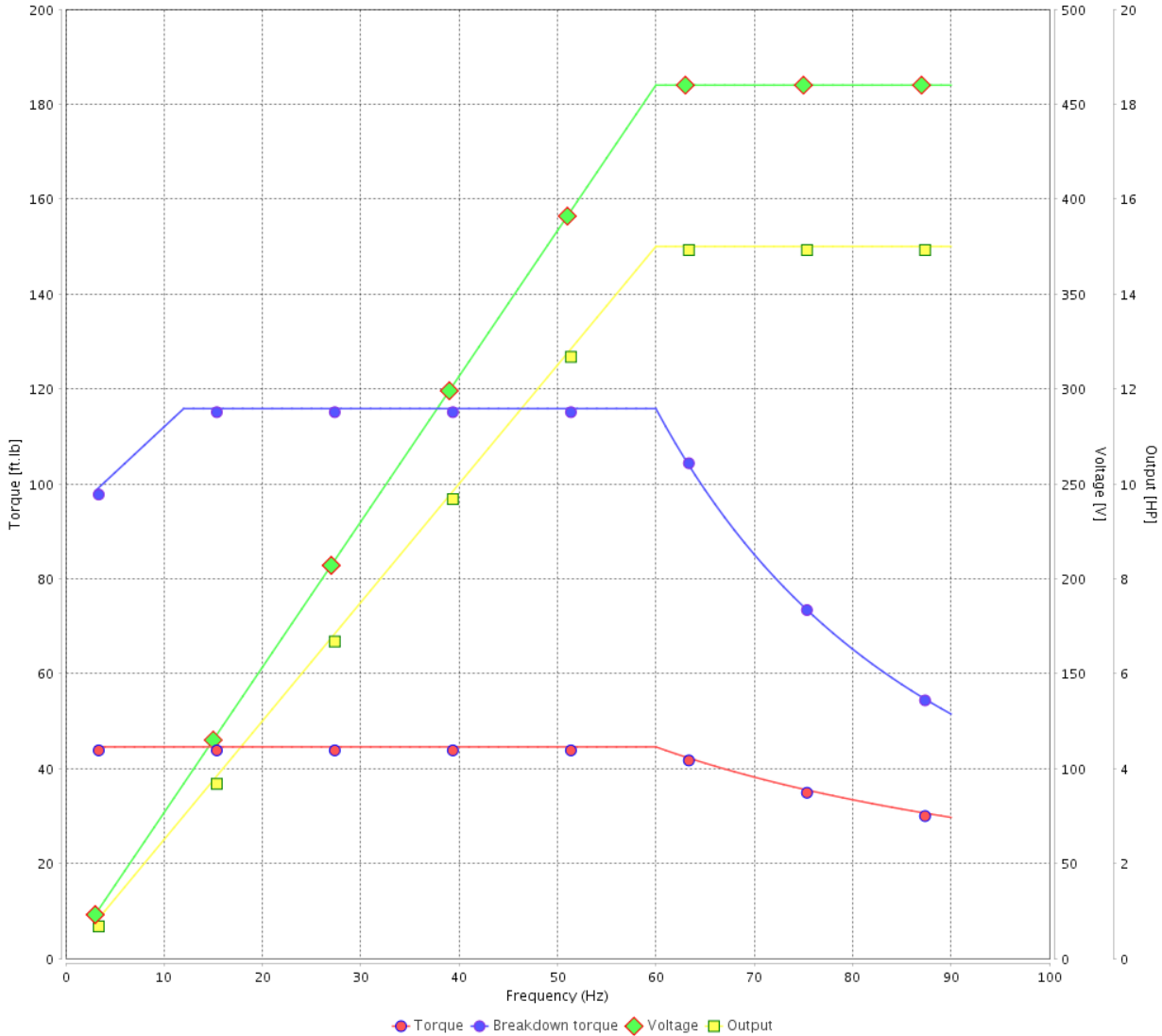
Customer : \_\_\_\_\_

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12385115

Catalog # : 01518ST3QIE254T-W22

VFD OPERATION CURVE



Performance : 460 V 60 Hz 4P

Rated current : 18.0 A  
 LRC : 6.4  
 Rated torque : 44.6 ft.lb  
 Locked rotor torque : 220 %  
 Breakdown torque : 260 %  
 Rated speed : 1770 rpm

Moment of inertia (J) : 2.62 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.25  
 Temperature rise : 80 K  
 Design : B

| Rev.         | Changes Summary | Performed | Checked | Date     |
|--------------|-----------------|-----------|---------|----------|
|              |                 |           |         |          |
| Performed by |                 |           | Page    | Revision |
| Checked by   |                 |           |         |          |
| Date         |                 |           |         |          |

# VFD OPERATION CURVE

## Three Phase Induction Motor - Squirrel Cage

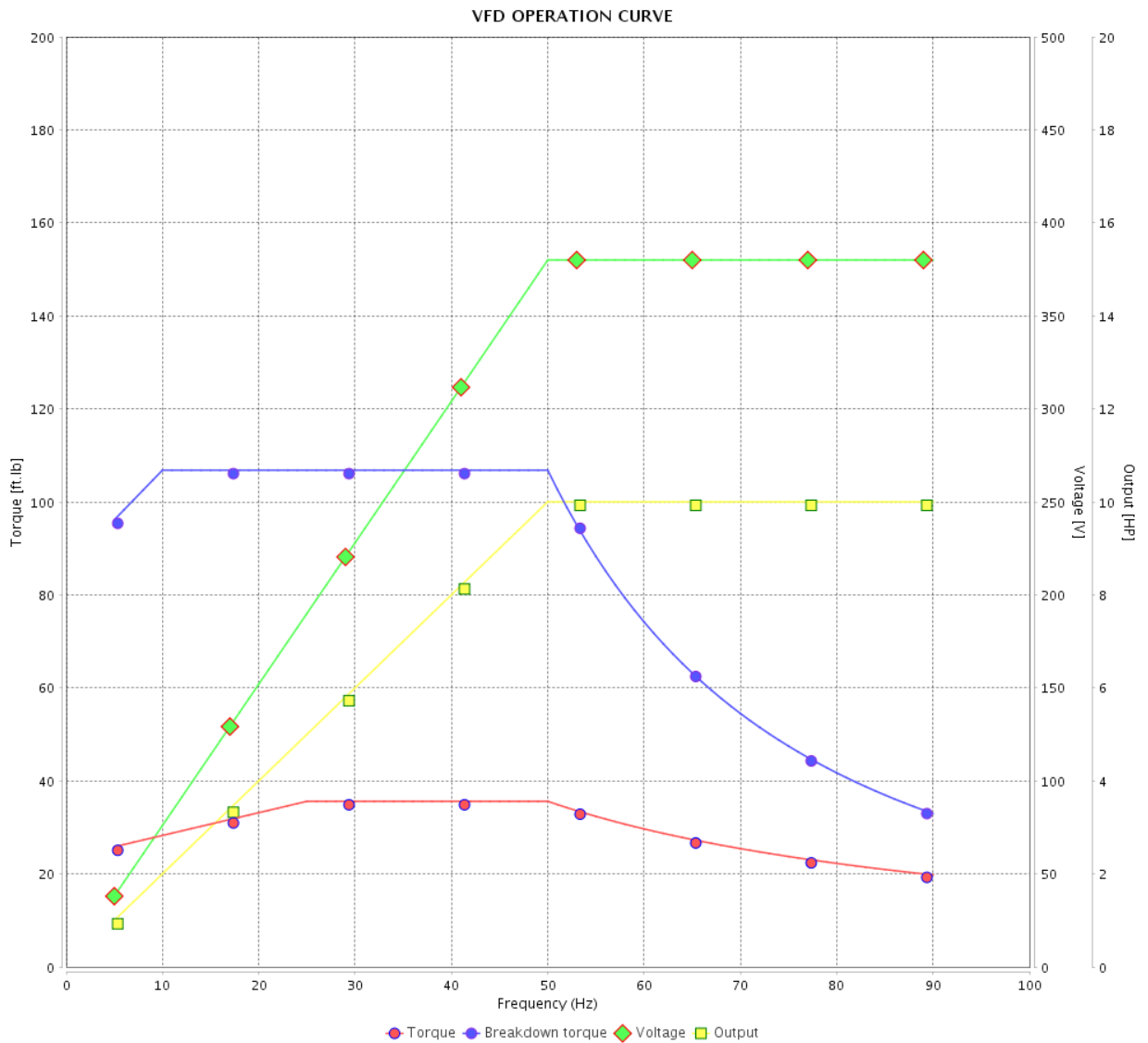


Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12385115

Catalog # : 01518ST3QIE254T-W22



Performance : 380 V 50 Hz 4P IE3

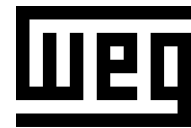
Rated current : 15.2 A  
 LRC : 7.2  
 Rated torque : 35.6 ft.lb  
 Locked rotor torque : 250 %  
 Breakdown torque : 300 %  
 Rated speed : 1475 rpm

Moment of inertia (J) : 2.62 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.25  
 Temperature rise : 80 K  
 Design : B

| Rev.         | Changes Summary | Performed | Checked | Date            |
|--------------|-----------------|-----------|---------|-----------------|
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| Date         | 13/04/2022      |           |         |                 |
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# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

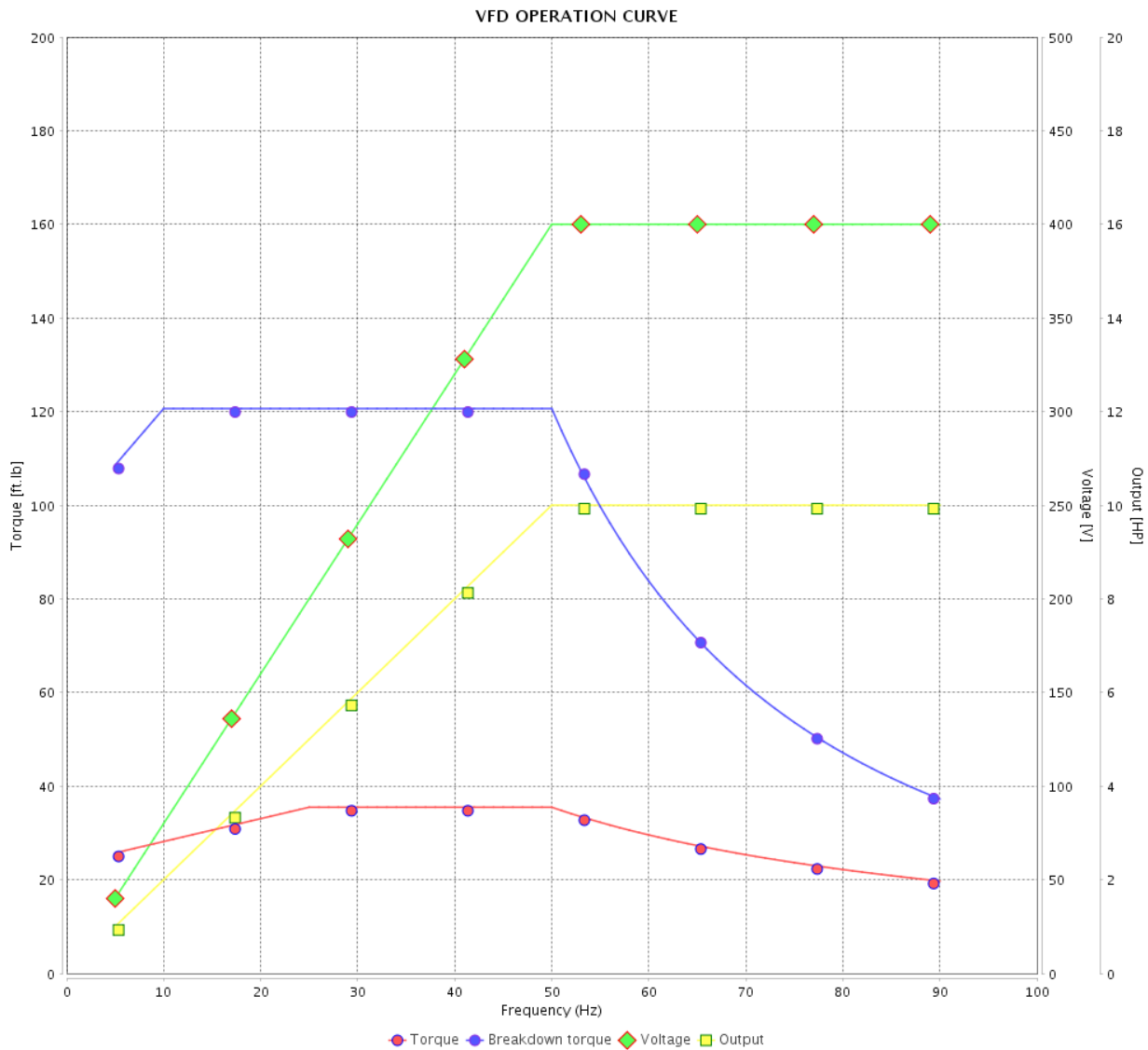


Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12385115

Catalog # : 01518ST3QIE254T-W22



Performance : 400 V 50 Hz 4P IE3

|                     |              |                       |                 |
|---------------------|--------------|-----------------------|-----------------|
| Rated current       | : 14.8 A     | Moment of inertia (J) | : 2.62 sq.ft.lb |
| LRC                 | : 7.8        | Duty cycle            | : Cont.(S1)     |
| Rated torque        | : 35.5 ft.lb | Insulation class      | : F             |
| Locked rotor torque | : 280 %      | Service factor        | : 1.25          |
| Breakdown torque    | : 340 %      | Temperature rise      | : 80 K          |
| Rated speed         | : 1480 rpm   | Design                | : B             |

| Rev.         | Changes Summary | Performed | Checked         | Date     |
|--------------|-----------------|-----------|-----------------|----------|
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# VFD OPERATION CURVE

## Three Phase Induction Motor - Squirrel Cage

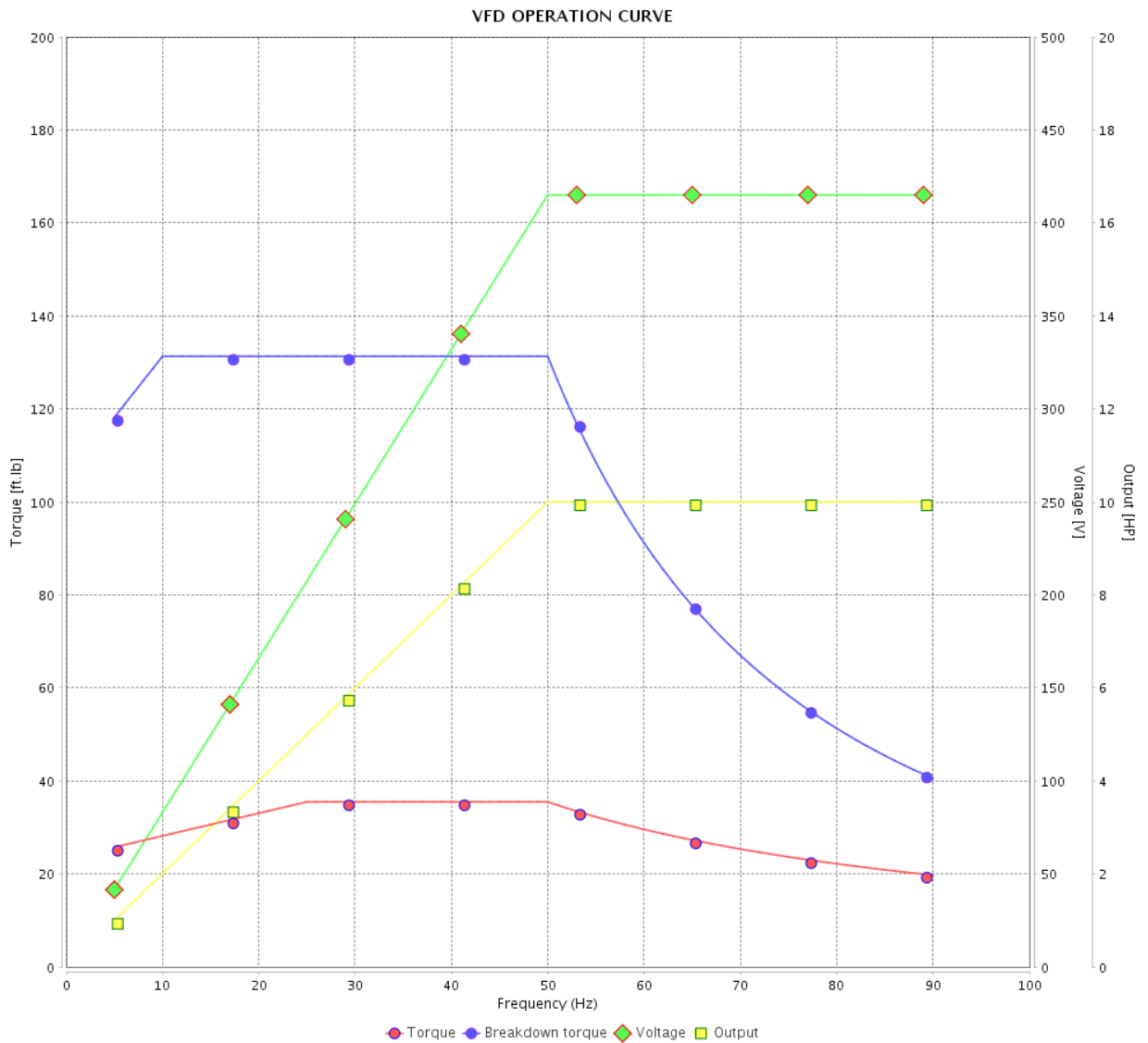


Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12385115

Catalog # : 01518ST3QIE254T-W22



Performance : 415 V 50 Hz 4P IE3

Rated current : 14.5 A  
 LRC : 8.3  
 Rated torque : 35.5 ft.lb  
 Locked rotor torque : 310 %  
 Breakdown torque : 370 %  
 Rated speed : 1480 rpm

Moment of inertia (J) : 2.62 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.25  
 Temperature rise : 80 K  
 Design : B

| Rev.         | Changes Summary | Performed | Checked         | Date     |
|--------------|-----------------|-----------|-----------------|----------|
|              |                 |           |                 |          |
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# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage



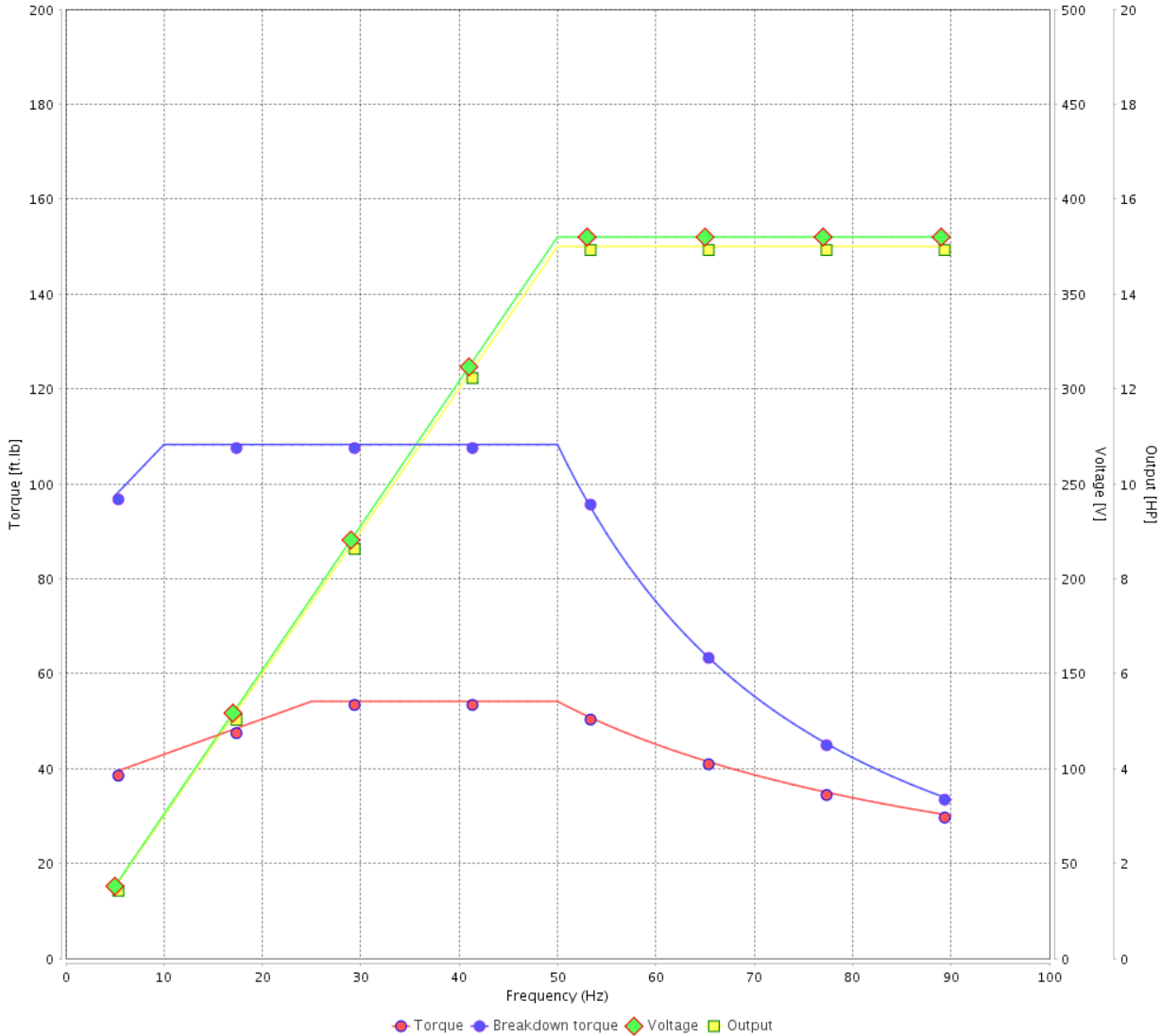
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12385115

Catalog # : 01518ST3QIE254T-W22

VFD OPERATION CURVE



Performance : 380 V 50 Hz 4P IE2

Rated current : 21.5 A  
 LRC : 4.9  
 Rated torque : 54.1 ft.lb  
 Locked rotor torque : 160 %  
 Breakdown torque : 200 %  
 Rated speed : 1455 rpm

Moment of inertia (J) : 2.62 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : B

| Rev.         | Changes Summary | Performed | Checked         | Date     |
|--------------|-----------------|-----------|-----------------|----------|
|              |                 |           |                 |          |
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| Checked by   |                 |           |                 |          |
| Date         | 13/04/2022      |           |                 |          |

# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

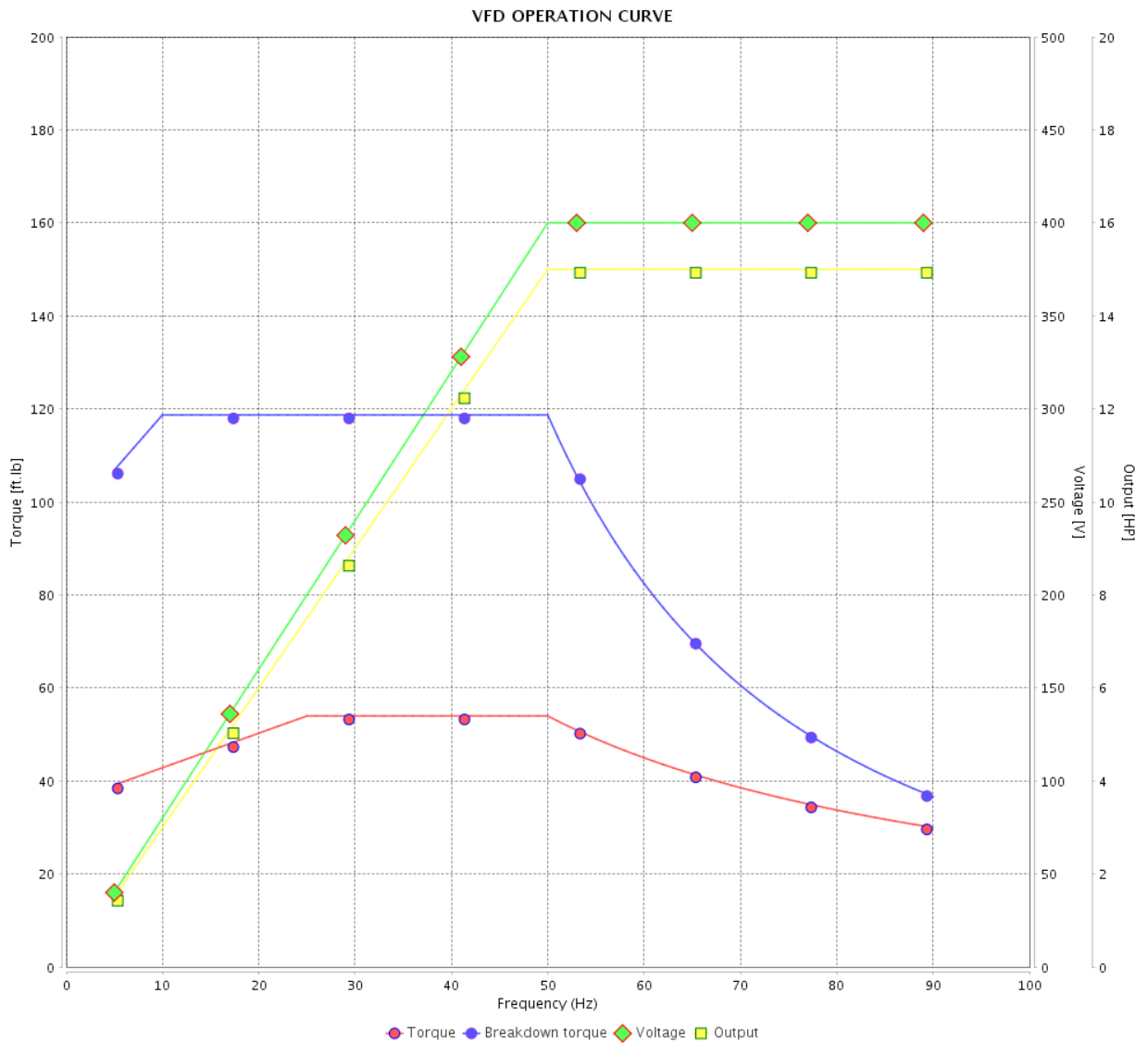


Customer : \_\_\_\_\_

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12385115

Catalog # : 01518ST3QIE254T-W22



Performance : 400 V 50 Hz 4P IE2

Rated current : 20.5 A  
 LRC : 5.4  
 Rated torque : 54.0 ft.lb  
 Locked rotor torque : 200 %  
 Breakdown torque : 220 %  
 Rated speed : 1460 rpm

Moment of inertia (J) : 2.62 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : B

| Rev.         | Changes Summary | Performed  | Checked | Date     |
|--------------|-----------------|------------|---------|----------|
|              |                 |            |         |          |
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# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage



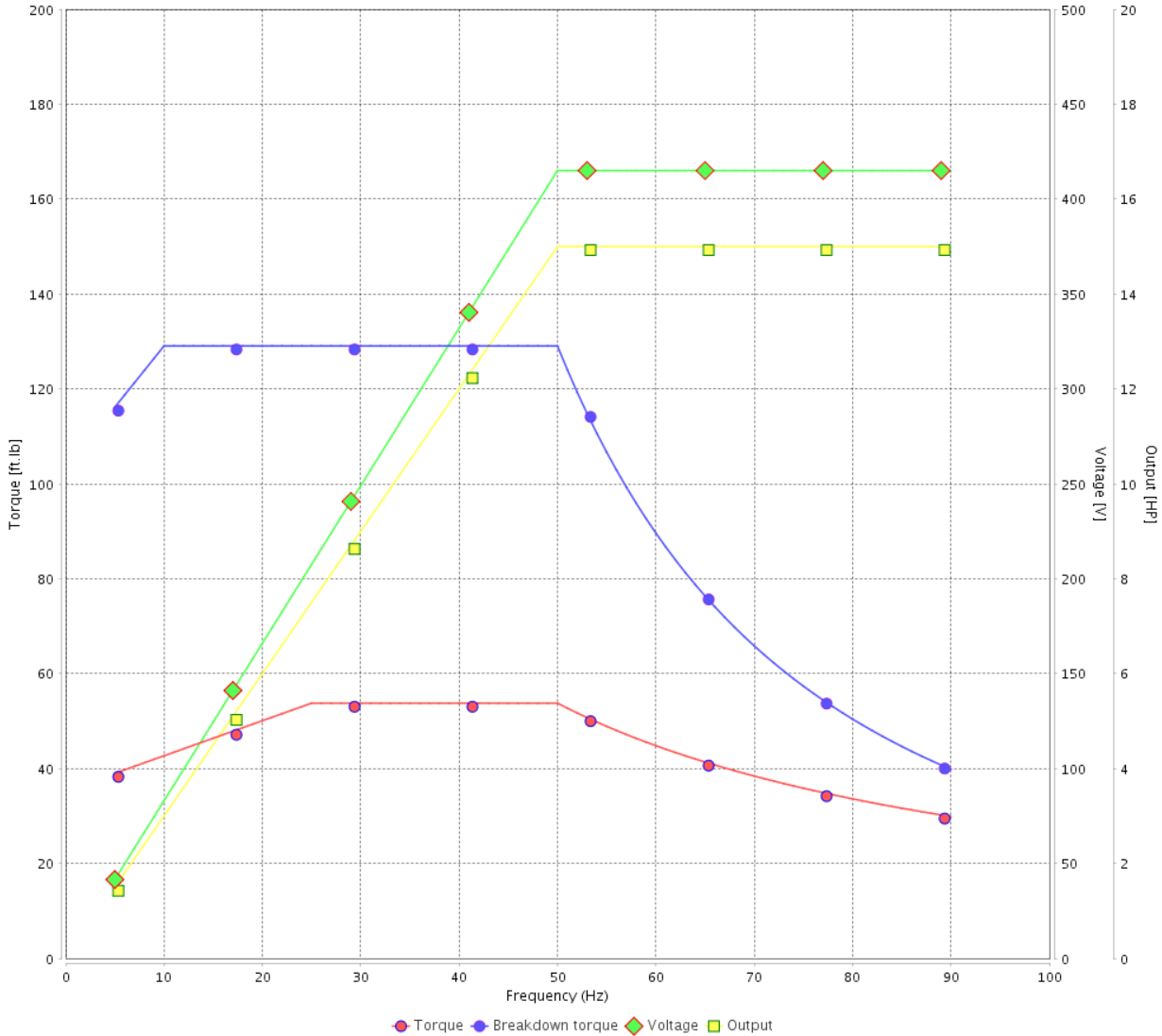
Customer : \_\_\_\_\_

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12385115

Catalog # : 01518ST3QIE254T-W22

VFD OPERATION CURVE



Performance : 415 V 50 Hz 4P IE2

Rated current : 20.0 A  
 LRC : 5.9  
 Rated torque : 53.8 ft.lb  
 Locked rotor torque : 210 %  
 Breakdown torque : 240 %  
 Rated speed : 1465 rpm

Moment of inertia (J) : 2.62 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : B

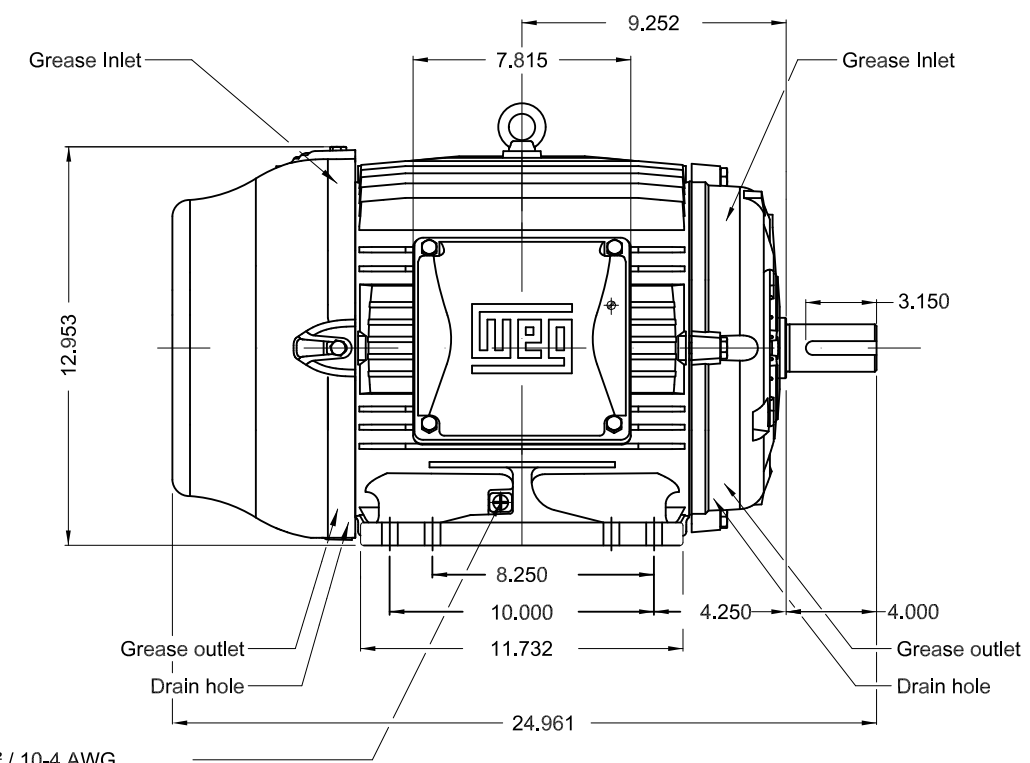
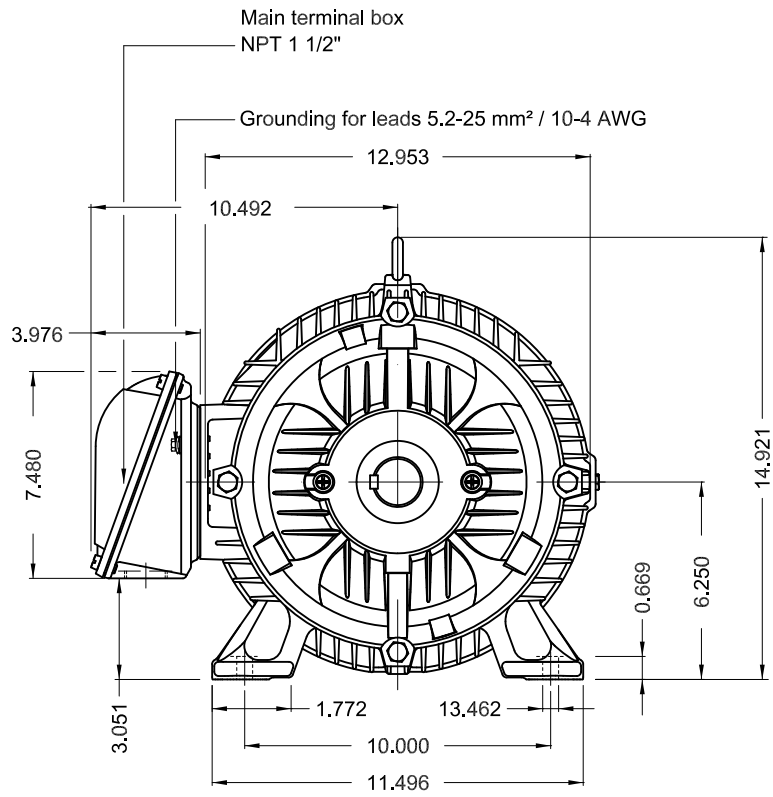
| Rev.         | Changes Summary | Performed | Checked         | Date     |
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| Checked by   |                 |           |                 |          |
| Date         | 13/04/2022      |           |                 |          |

1 2 3 4 5 6

A

B

C

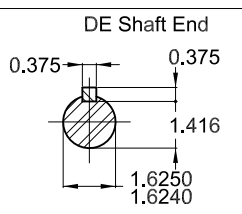


Grounding for leads 5.2-25 mm² / 10-4 AWG

D

E

Without vertical jackscrews  
 Color RAL 5009  
 Painting plan 202E  
 Mounting B3R(D)



15 HP 04 Poles 60 Hz A

| ECM      | LOC       | SUMMARY OF MODIFICATIONS                | EXECUTED            | CHECKED | RELEASED | DATE | VER |
|----------|-----------|---|---------------------|---------|----------|------|-----|
| EXECUTED | PIRWBUSER | THREE PH. MOTOR IEEE 841 W22 PREM. EFF. |                     |         |          |      |     |
| CHECKED  |           | FRAME 254/6T IP55 TEFC                  |                     |         |          |      |     |
| RELEASED |           |   |                     |         |          |      |     |
| REL DT.  | WMO       | Jaragua do Sul                          | Product Engineering | SHEET   | 1 / 1    |      |     |

**PREVIEW**  
WDD

