

# DATA SHEET

## Three Phase Induction Motor - Squirrel Cage



Customer :				
Product line	: Standard Efficiency Three-Phase	Product code :	14785546	
		Catalog # :	.3318ES3E56CFL-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>2</sup>	: 20.0 lb	
Protection degree	: IP55	Moment of inertia (J)	: 0.0517 sq.ft.lb	
Output [HP]	0.33	0.33	0.33	
Poles	4	4	4	
Frequency [Hz]	60	50	50	
Rated voltage [V]	208-230/460	190/380	220/415	
Rated current [A]	1.38-1.25/0.624	1.36/0.678	1.29/0.682	
L. R. Amperes [A]	9.80-8.86/4.43	7.59/3.80	7.59/4.02	
LRC [A]	7.1x(Code M)	5.6x(Code J)	5.9x(Code K)	
No load current [A]	0.810-0.940/0.470	0.924/0.462	0.941/0.499	
Rated speed [RPM]	1765	1455	1460	
Slip [%]	1.94	3.00	2.67	
Rated torque [ft.lb]	0.982	1.19	1.19	
Locked rotor torque [%]	229	170	190	
Breakdown torque [%]	300	260	290	
Service factor		1.00	1.00	
Temperature rise	80 K	80 K	80 K	
Locked rotor time	55s (cold) 31s (hot)	0s (cold) 0s (hot)	0s (cold) 0s (hot)	
Noise level <sup>2</sup>	52.0 dB(A)	49.0 dB(A)	49.0 dB(A)	
Efficiency (%)	25%	62.0	64.9	62.8
	50%	64.0	66.7	65.0
	75%	72.0	72.0	71.1
	100%	74.0	73.7	73.5
Power Factor	25%	0.26	0.31	0.28
	50%	0.47	0.55	0.51
	75%	0.58	0.67	0.63
	100%	0.68	0.76	0.72
Bearing type	: Drive end 6203 ZZ Non drive end 6202 ZZ	Foundation loads		
Sealing	: V'Ring Without Bearing Seal	Max. traction	: 23 lb	
		Max. compression	: 43 lb	
Lubrication interval	: - -			
Lubricant amount	: - -			
Lubricant type	: Mobil Polyrex EM			
Notes USABLE @208V SF 1.00				
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
Performed by				
Checked by			Page	Revision
Date	11/04/2022		1 / 13	

# TORQUE AND CURRENT VS SPEED CURVE

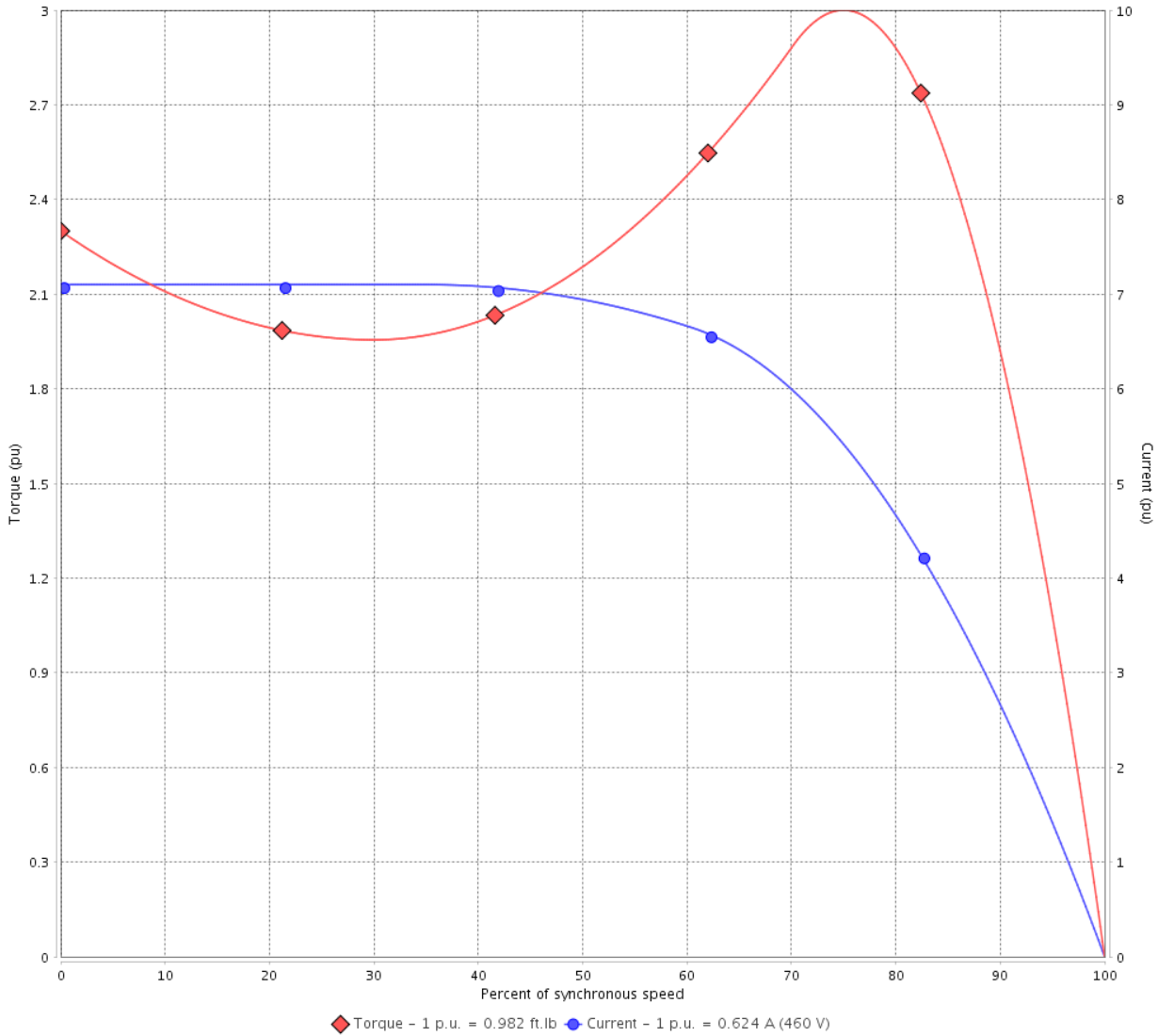
Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : Standard Efficiency Three-Phase      Product code : 14785546  
 Catalog # : .3318ES3E56CFL-S

TORQUE AND CURRENT VS SPEED CURVE



Performance : 208-230/460 V 60 Hz 4P

Rated current	: 1.38-1.25/0.624 A	Moment of inertia (J)	: 0.0517 sq.ft.lb
LRC	: 7.1	Duty cycle	: Cont.(S1)
Rated torque	: 0.982 ft.lb	Insulation class	: F
Locked rotor torque	: 229 %	Service factor	:
Breakdown torque	: 300 %	Temperature rise	: 80 K
Rated speed	: 1765 rpm		

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

Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page 2 / 13	Revision
Checked by				
Date	11/04/2022			

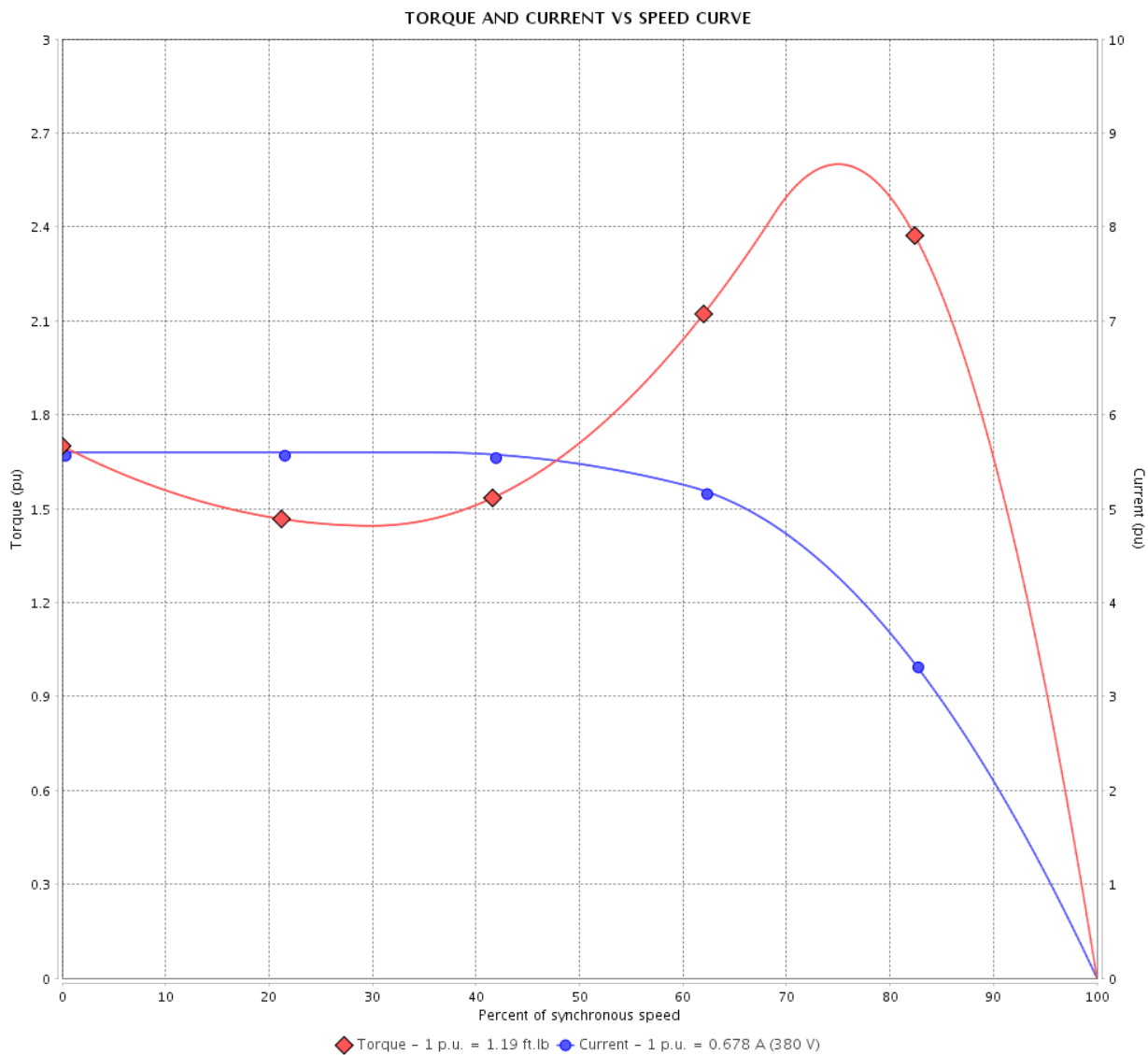
# TORQUE AND CURRENT VS SPEED CURVE



## Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : Standard Efficiency Three-Phase      Product code : 14785546  
 Catalog # : .3318ES3E56CFL-S



Performance : 190/380 V 50 Hz 4P

Rated current	: 1.36/0.678 A	Moment of inertia (J)	: 0.0517 sq.ft.lb
LRC	: 5.6	Duty cycle	: Cont.(S1)
Rated torque	: 1.19 ft.lb	Insulation class	: F
Locked rotor torque	: 170 %	Service factor	: 1.00
Breakdown torque	: 260 %	Temperature rise	: 80 K
Rated speed	: 1455 rpm		

Locked rotor time : 0s (cold) 0s (hot)

Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page 3 / 13	Revision
Checked by				
Date	11/04/2022			

# TORQUE AND CURRENT VS SPEED CURVE

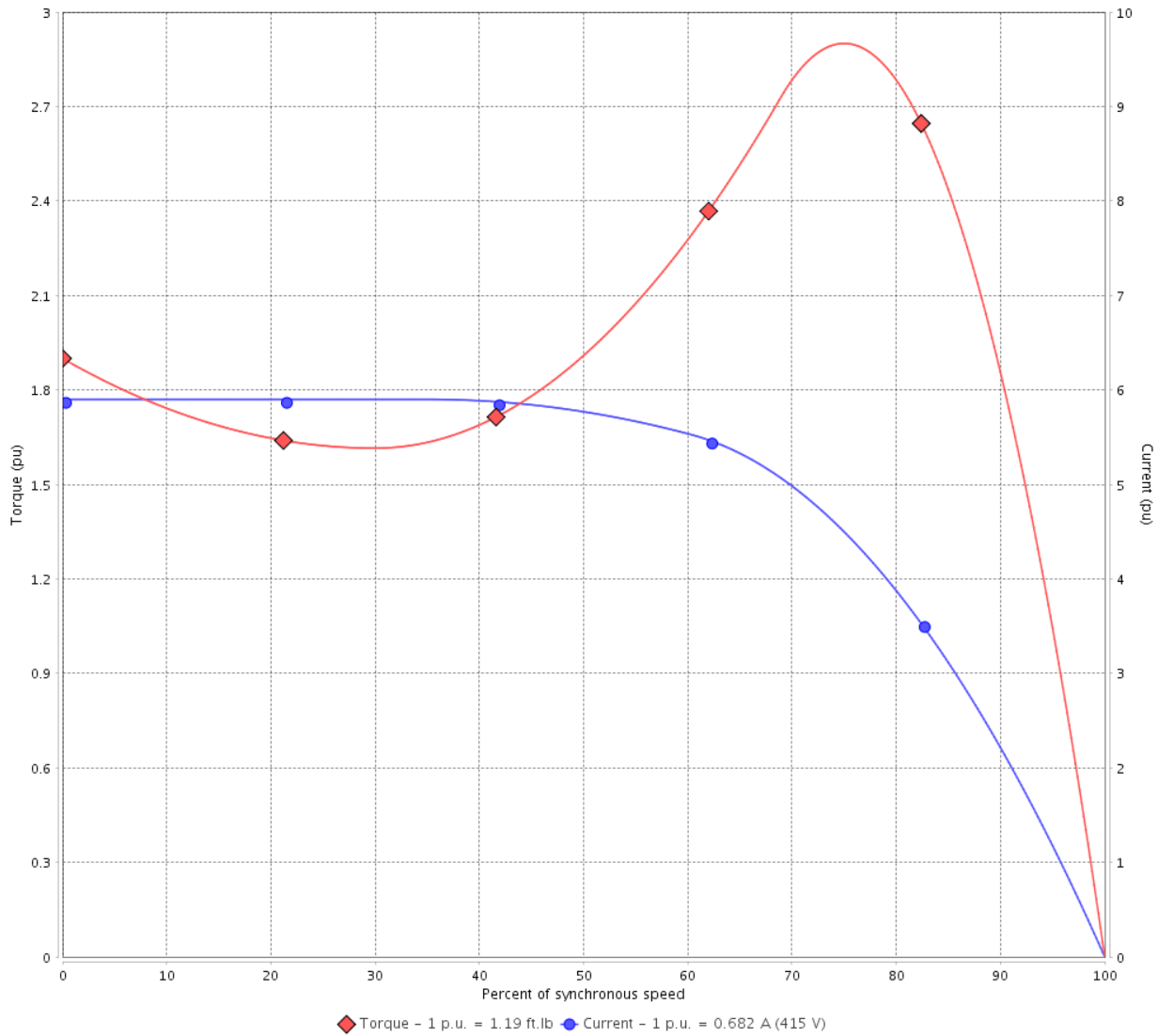
Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : Standard Efficiency Three-Phase      Product code : 14785546  
 Catalog # : .3318ES3E56CFL-S

TORQUE AND CURRENT VS SPEED CURVE



Performance : 220/415 V 50 Hz 4P

Rated current	: 1.29/0.682 A	Moment of inertia (J)	: 0.0517 sq.ft.lb
LRC	: 5.9	Duty cycle	: Cont.(S1)
Rated torque	: 1.19 ft.lb	Insulation class	: F
Locked rotor torque	: 190 %	Service factor	: 1.00
Breakdown torque	: 290 %	Temperature rise	: 80 K
Rated speed	: 1460 rpm		

Locked rotor time : 0s (cold) 0s (hot)

Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page 4 / 13	Revision
Checked by				
Date	11/04/2022			

# LOAD PERFORMANCE CURVE

## Three Phase Induction Motor - Squirrel Cage



Customer :

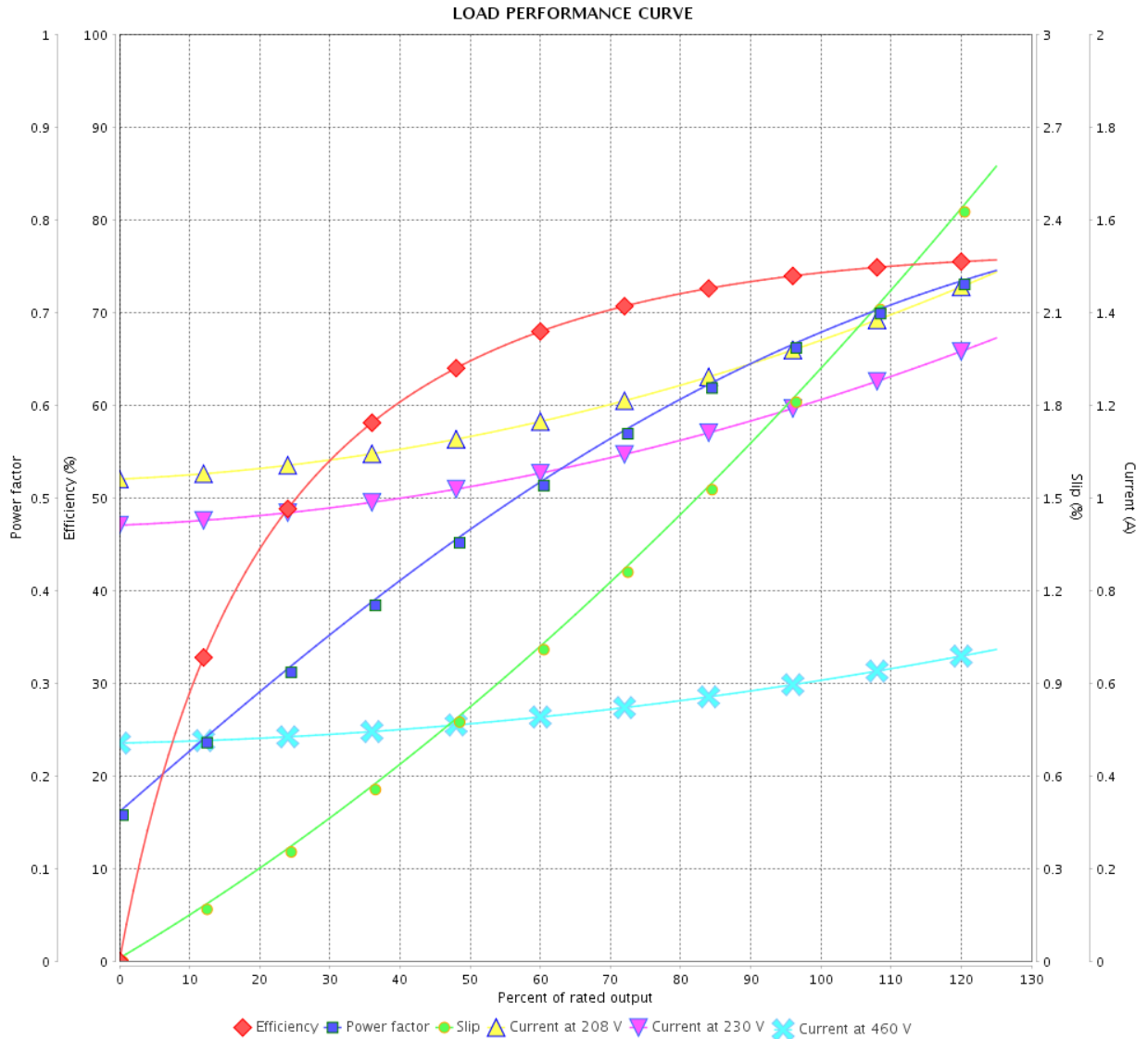
Product line : Standard Efficiency Three-Phase

Product code :

14785546

Catalog # :

.3318ES3E56CFL-S



Performance : 208-230/460 V 60 Hz 4P

Rated current : 1.38-1.25/0.624 A  
 LRC : 7.1  
 Rated torque : 0.982 ft.lb  
 Locked rotor torque : 229 %  
 Breakdown torque : 300 %  
 Rated speed : 1765 rpm

Moment of inertia (J) : 0.0517 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		Revision
Checked by		5 / 13		
Date		11/04/2022		

# LOAD PERFORMANCE CURVE

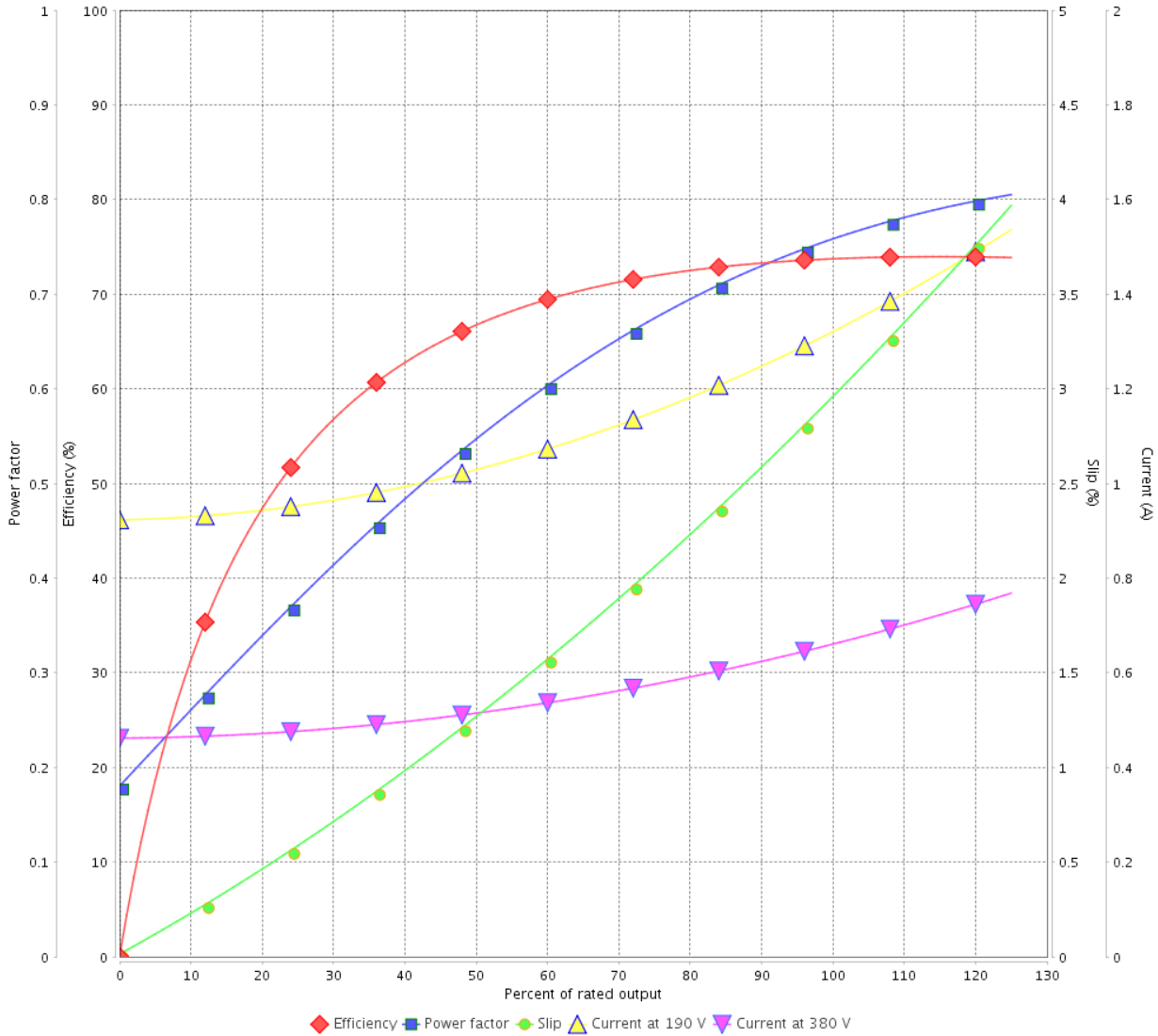
Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : Standard Efficiency Three-Phase      Product code : 14785546  
 Catalog # : .3318ES3E56CFL-S

LOAD PERFORMANCE CURVE



Performance : 190/380 V 50 Hz 4P

Rated current	: 1.36/0.678 A	Moment of inertia (J)	: 0.0517 sq.ft.lb
LRC	: 5.6	Duty cycle	: Cont.(S1)
Rated torque	: 1.19 ft.lb	Insulation class	: F
Locked rotor torque	: 170 %	Service factor	: 1.00
Breakdown torque	: 260 %	Temperature rise	: 80 K
Rated speed	: 1455 rpm		

Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page 6 / 13	Revision
Checked by				
Date	11/04/2022			

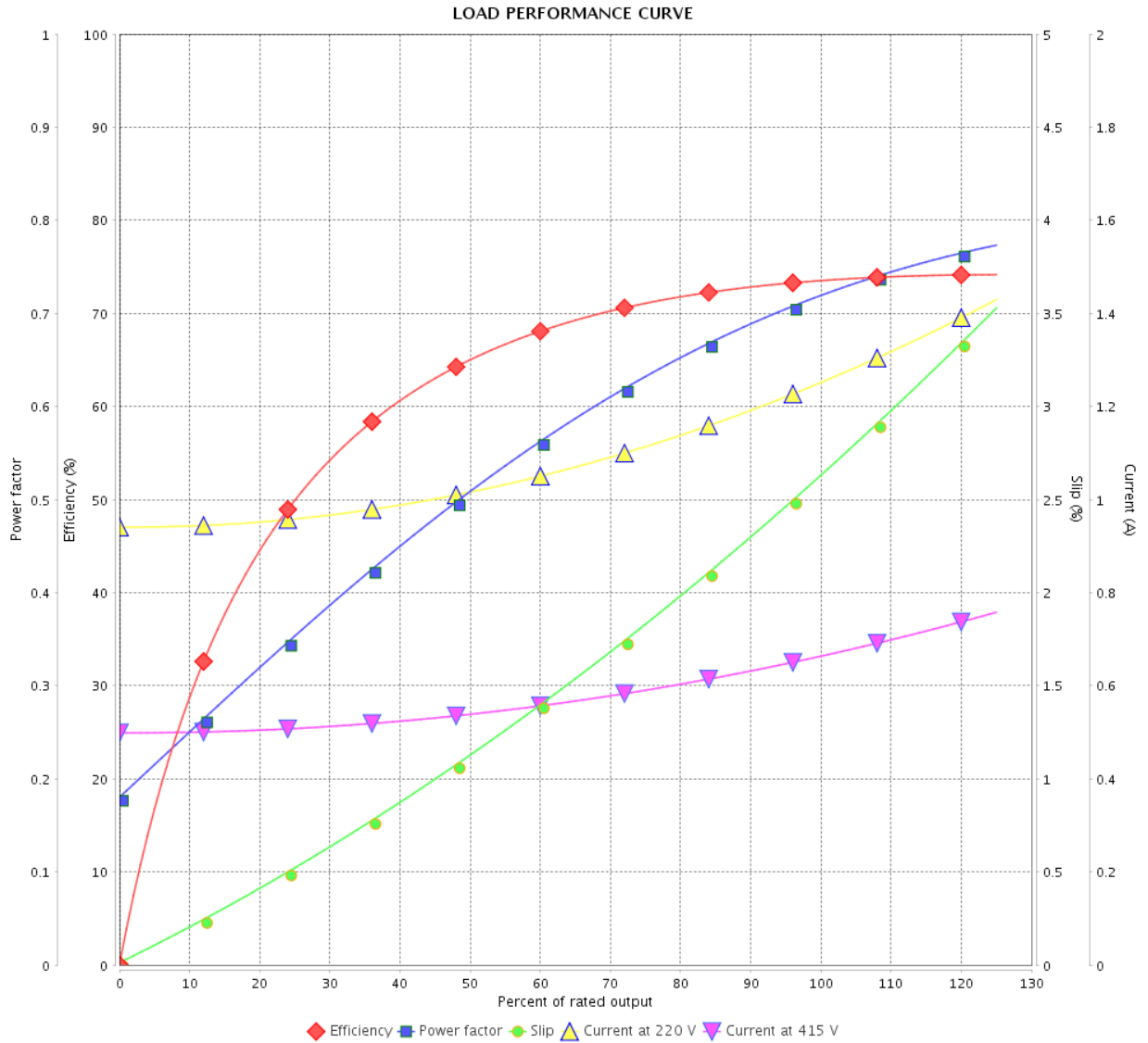
# LOAD PERFORMANCE CURVE

Three Phase Induction Motor - Squirrel Cage



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

Product line : Standard Efficiency Three-Phase      Product code : 14785546  
 Catalog # : .3318ES3E56CFL-S



Performance : 220/415 V 50 Hz 4P

Rated current : 1.29/0.682 A  
 LRC : 5.9  
 Rated torque : 1.19 ft.lb  
 Locked rotor torque : 190 %  
 Breakdown torque : 290 %  
 Rated speed : 1460 rpm

Moment of inertia (J) : 0.0517 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K

Rev.	Changes Summary	Performed	Checked	Date
Performed by		Page		Revision
Checked by		7 / 13		
Date		11/04/2022		

# THERMAL LIMIT CURVE

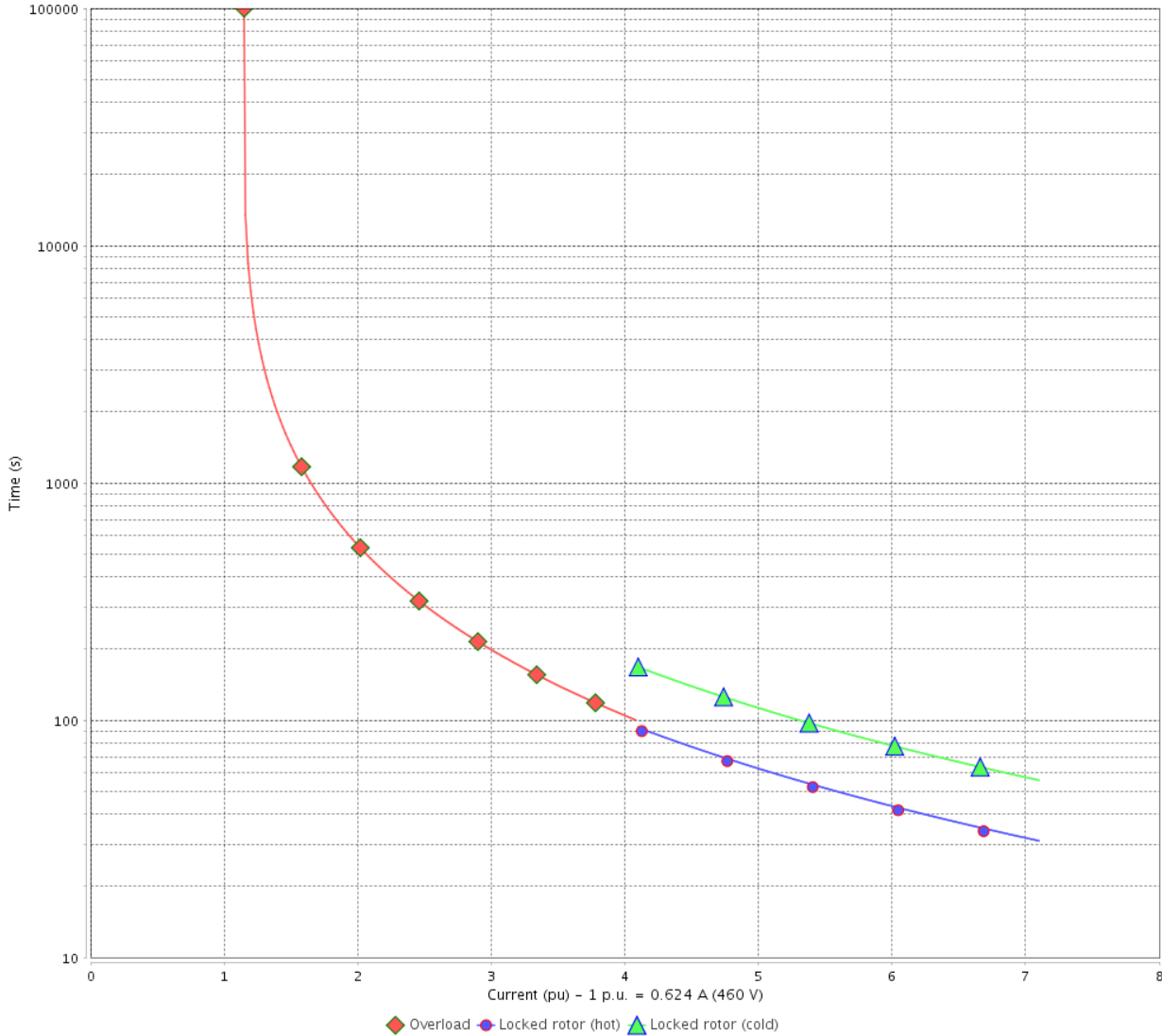
## Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : Standard Efficiency Three-Phase      Product code : 14785546  
 Catalog # : .3318ES3E56CFL-S

THERMAL LIMIT CURVE



Performance : 208-230/460 V 60 Hz 4P

Rated current : 1.38-1.25/0.624 A	Moment of inertia (J) : 0.0517 sq.ft.lb
LRC : 7.1	Duty cycle : Cont.(S1)
Rated torque : 0.982 ft.lb	Insulation class : F
Locked rotor torque : 229 %	Service factor :
Breakdown torque : 300 %	Temperature rise : 80 K
Rated speed : 1765 rpm	

Heating constant  
Cooling constant

Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page 8 / 13	Revision
Checked by				
Date	11/04/2022			



# THERMAL LIMIT CURVE

## Three Phase Induction Motor - Squirrel Cage



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

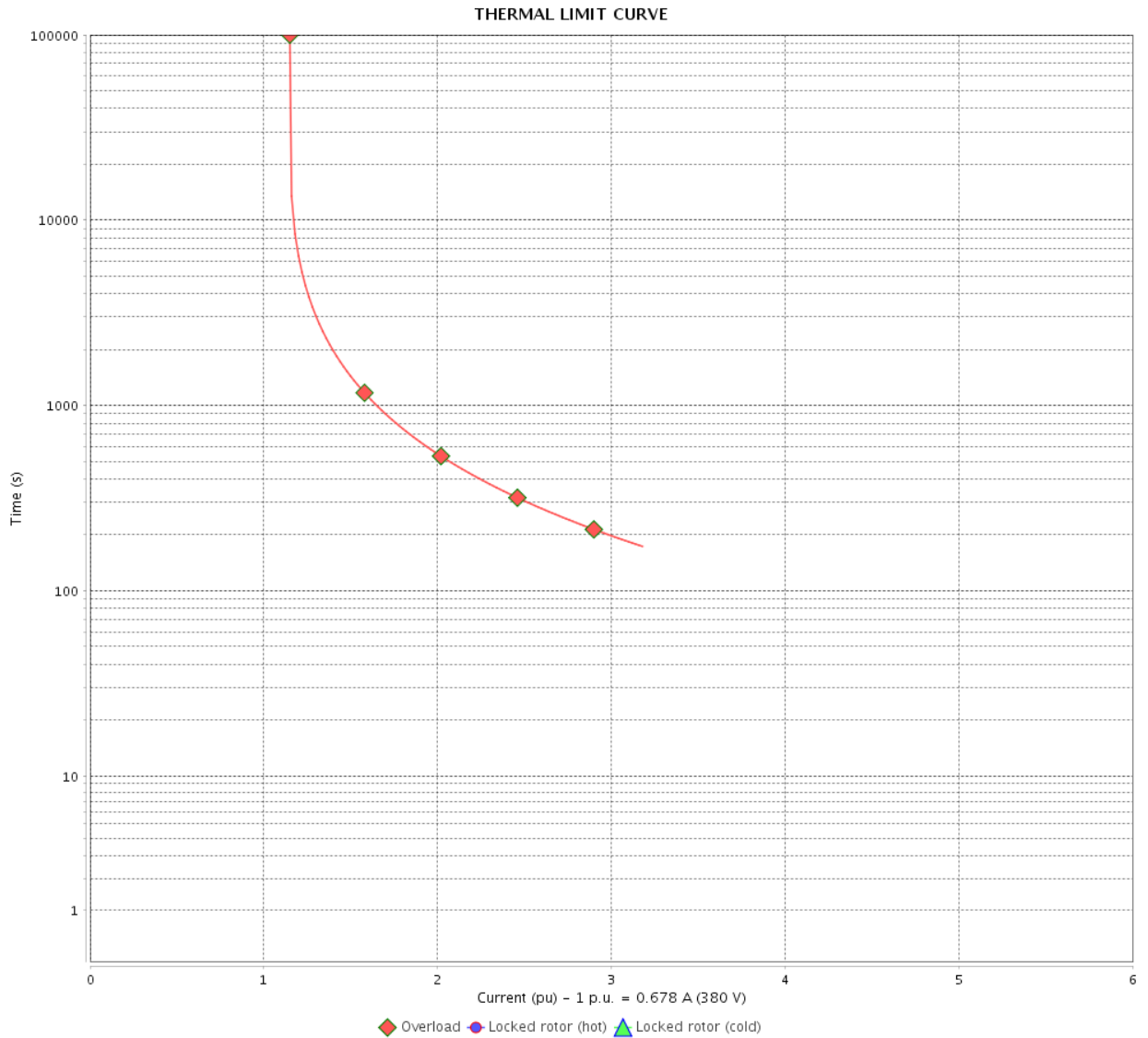
Product line : Standard Efficiency Three-Phase

Product code :

14785546

Catalog # :

.3318ES3E56CFL-S



Performance : 190/380 V 50 Hz 4P

Rated current : 1.36/0.678 A  
 LRC : 5.6  
 Rated torque : 1.19 ft.lb  
 Locked rotor torque : 170 %  
 Breakdown torque : 260 %  
 Rated speed : 1455 rpm

Moment of inertia (J) : 0.0517 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K

Heating constant

Cooling constant

Rev.	Changes Summary	Performed	Checked	Date
Performed by				
Checked by				
Date				
		Page	Revision	
		9 / 13		

# THERMAL LIMIT CURVE

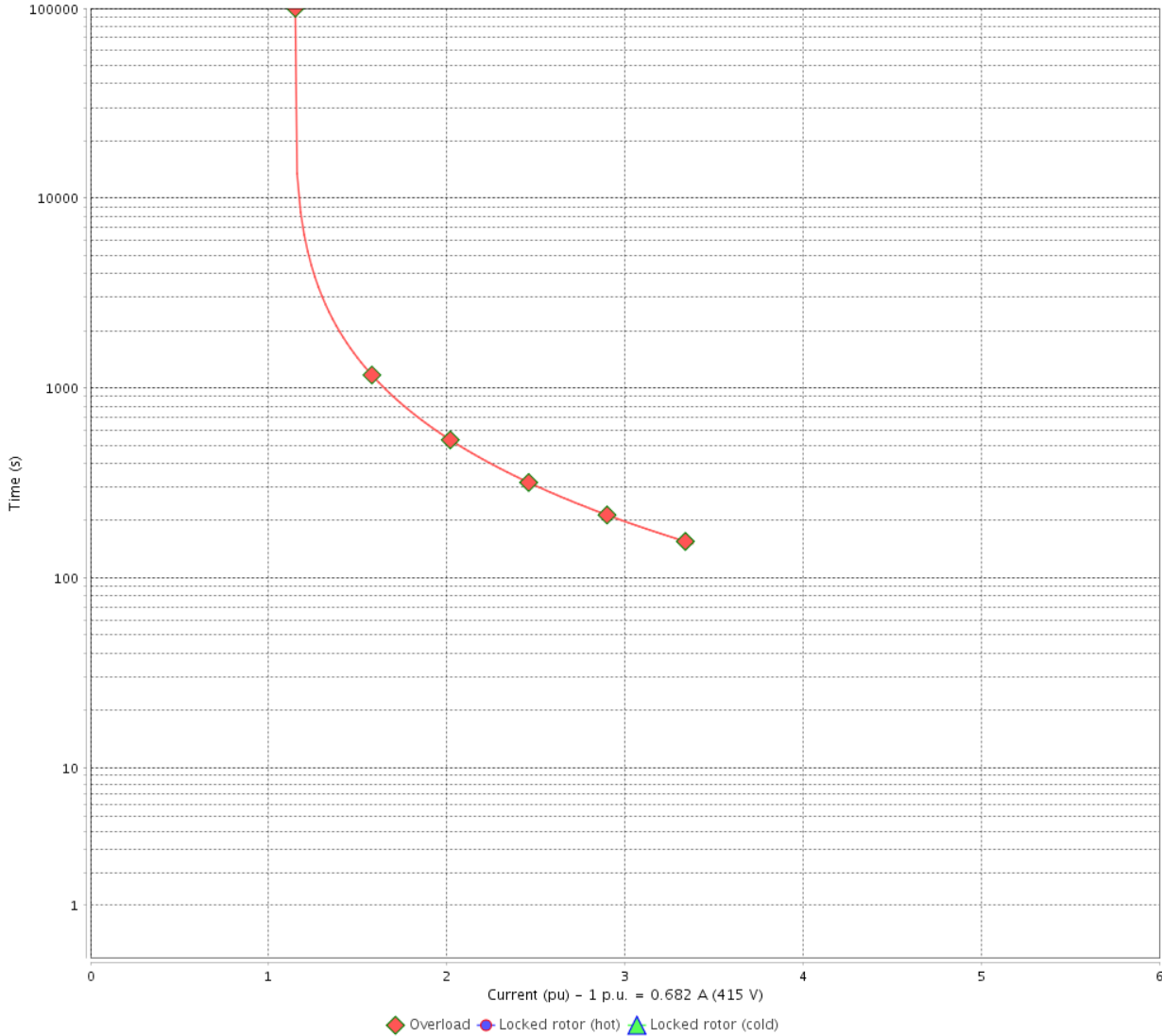
## Three Phase Induction Motor - Squirrel Cage



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

Product line : Standard Efficiency Three-Phase      Product code : 14785546  
 Catalog # : .3318ES3E56CFL-S

THERMAL LIMIT CURVE



Performance : 220/415 V 50 Hz 4P

Rated current	: 1.29/0.682 A	Moment of inertia (J)	: 0.0517 sq.ft.lb
LRC	: 5.9	Duty cycle	: Cont.(S1)
Rated torque	: 1.19 ft.lb	Insulation class	: F
Locked rotor torque	: 190 %	Service factor	: 1.00
Breakdown torque	: 290 %	Temperature rise	: 80 K
Rated speed	: 1460 rpm		

Heating constant

Cooling constant

Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page 10 / 13	Revision
Checked by				
Date	11/04/2022			

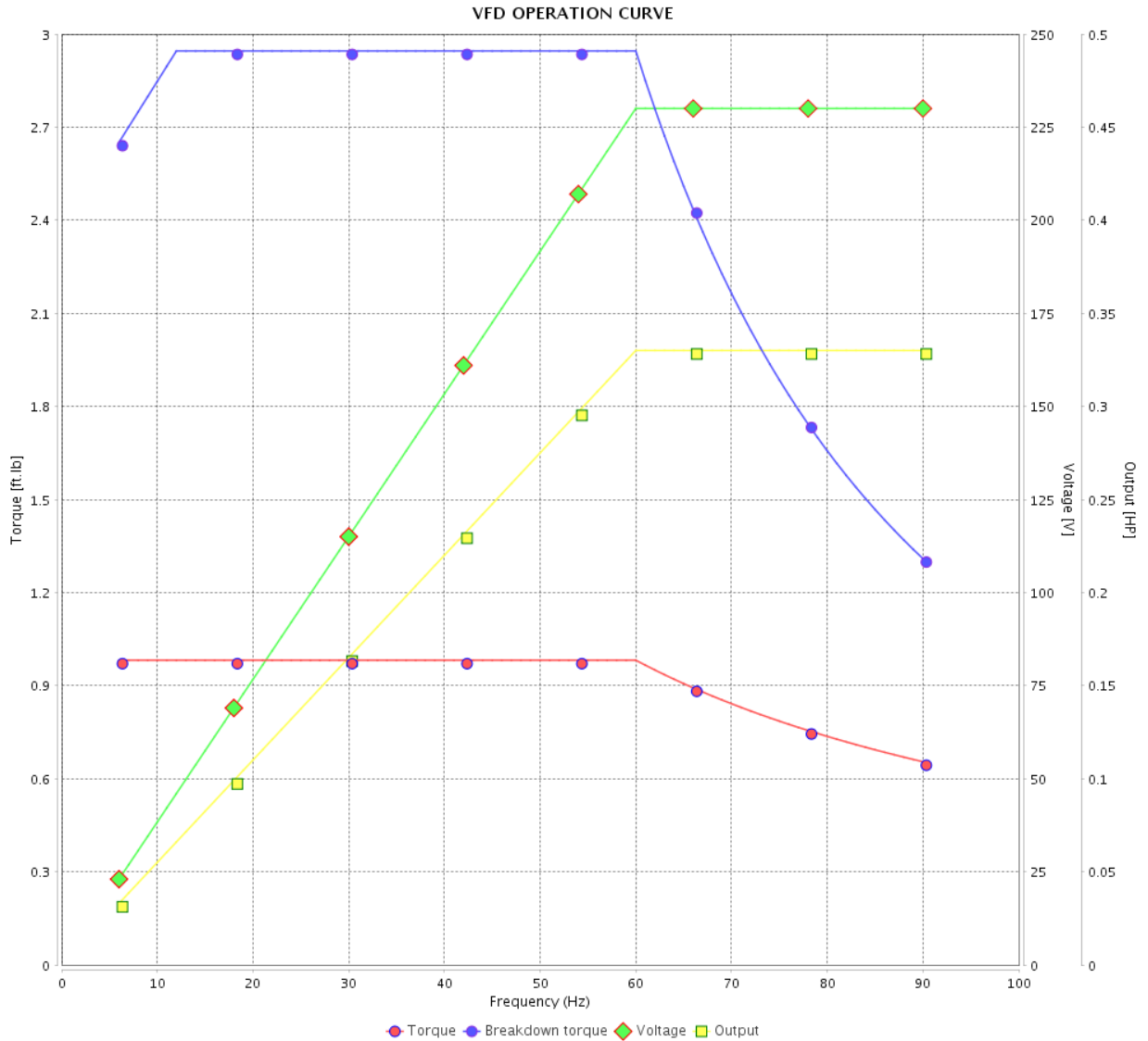
# VFD OPERATION CURVE

## Three Phase Induction Motor - Squirrel Cage



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

Product line : Standard Efficiency Three-Phase      Product code : 14785546  
 Catalog # : .3318ES3E56CFL-S



Performance : 208-230/460 V 60 Hz 4P

Rated current : 1.38-1.25/0.624 A  
 LRC : 7.1  
 Rated torque : 0.982 ft.lb  
 Locked rotor torque : 229 %  
 Breakdown torque : 300 %  
 Rated speed : 1765 rpm

Moment of inertia (J) : 0.0517 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 11 / 13	Revision
Checked by				
Date	11/04/2022			

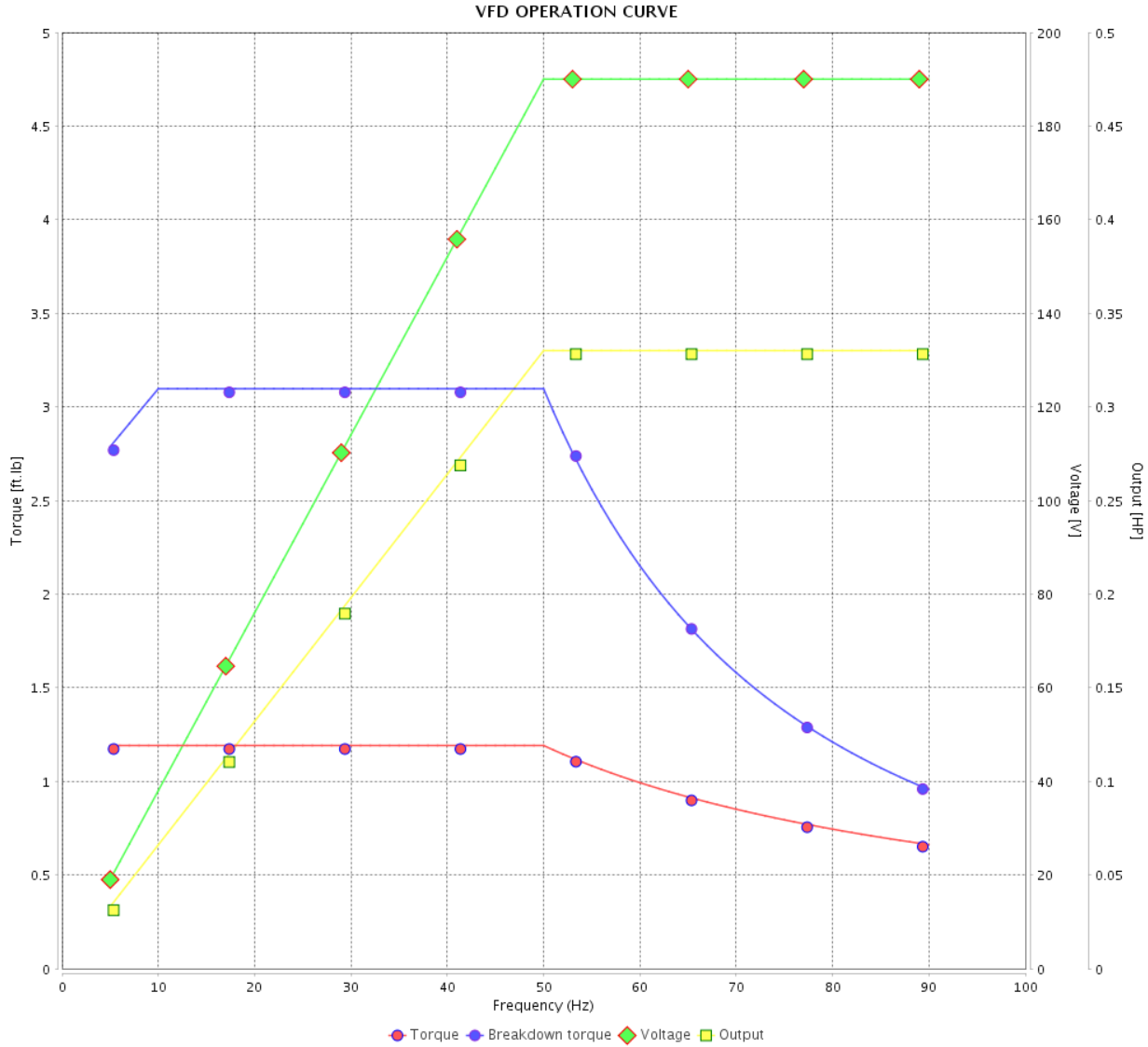
# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage



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

Product line : Standard Efficiency Three-Phase      Product code : 14785546  
 Catalog # : .3318ES3E56CFL-S



Performance : 190/380 V 50 Hz 4P

Rated current	: 1.36/0.678 A	Moment of inertia (J)	: 0.0517 sq.ft.lb
LRC	: 5.6	Duty cycle	: Cont.(S1)
Rated torque	: 1.19 ft.lb	Insulation class	: F
Locked rotor torque	: 170 %	Service factor	: 1.00
Breakdown torque	: 260 %	Temperature rise	: 80 K
Rated speed	: 1455 rpm		

Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page 12 / 13	Revision
Checked by				
Date	11/04/2022			

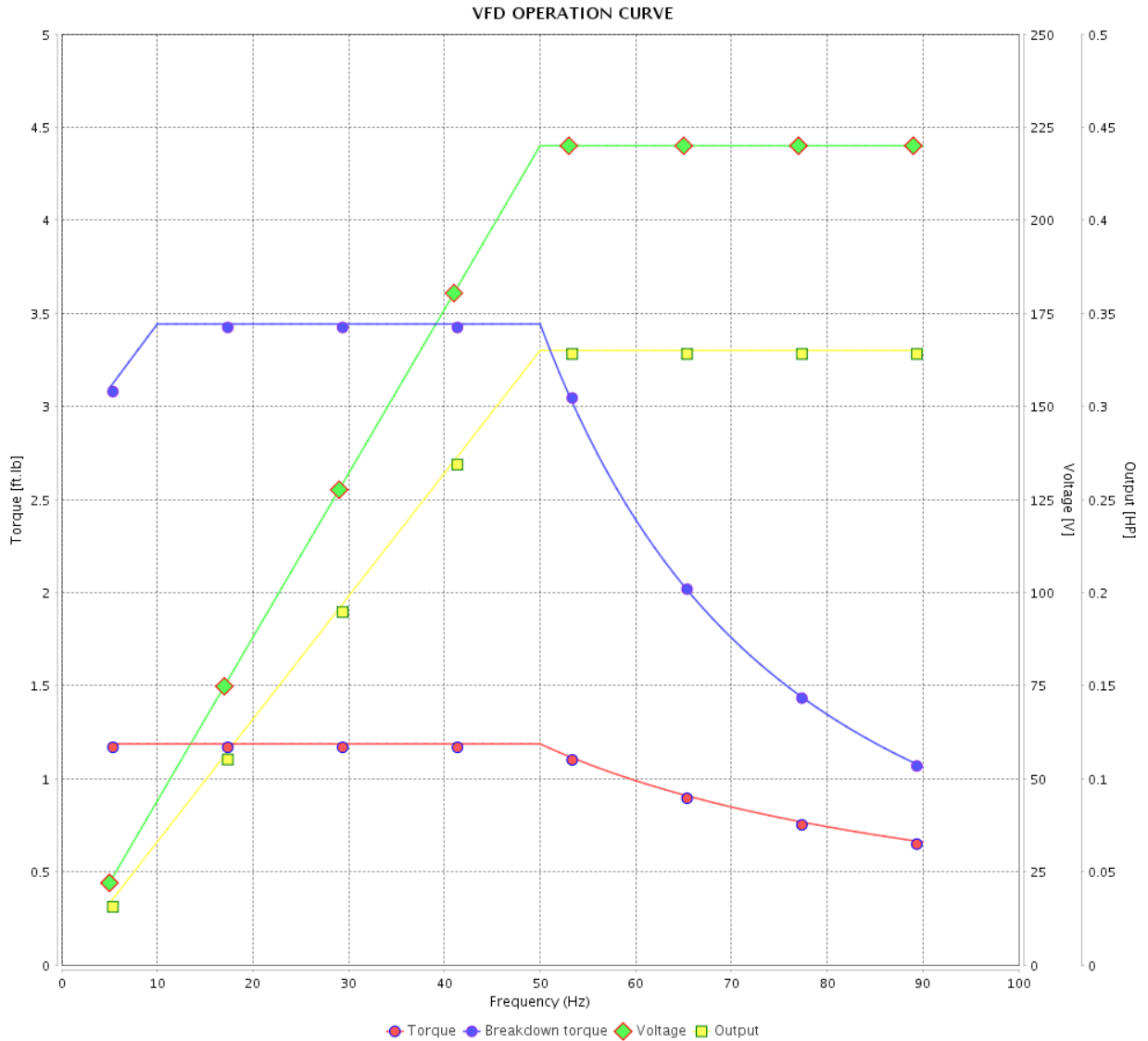
# VFD OPERATION CURVE

## Three Phase Induction Motor - Squirrel Cage



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

Product line : Standard Efficiency Three-Phase      Product code : 14785546  
 Catalog # : .3318ES3E56CFL-S



Performance : 220/415 V 50 Hz 4P

Rated current : 1.29/0.682 A  
 LRC : 5.9  
 Rated torque : 1.19 ft.lb  
 Locked rotor torque : 190 %  
 Breakdown torque : 290 %  
 Rated speed : 1460 rpm

Moment of inertia (J) : 0.0517 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K

Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page 13 / 13	Revision
Checked by				
Date	11/04/2022			

1 2 3 4 5 6

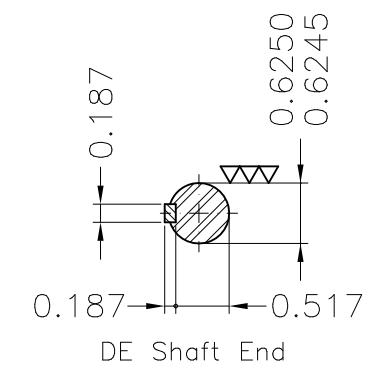
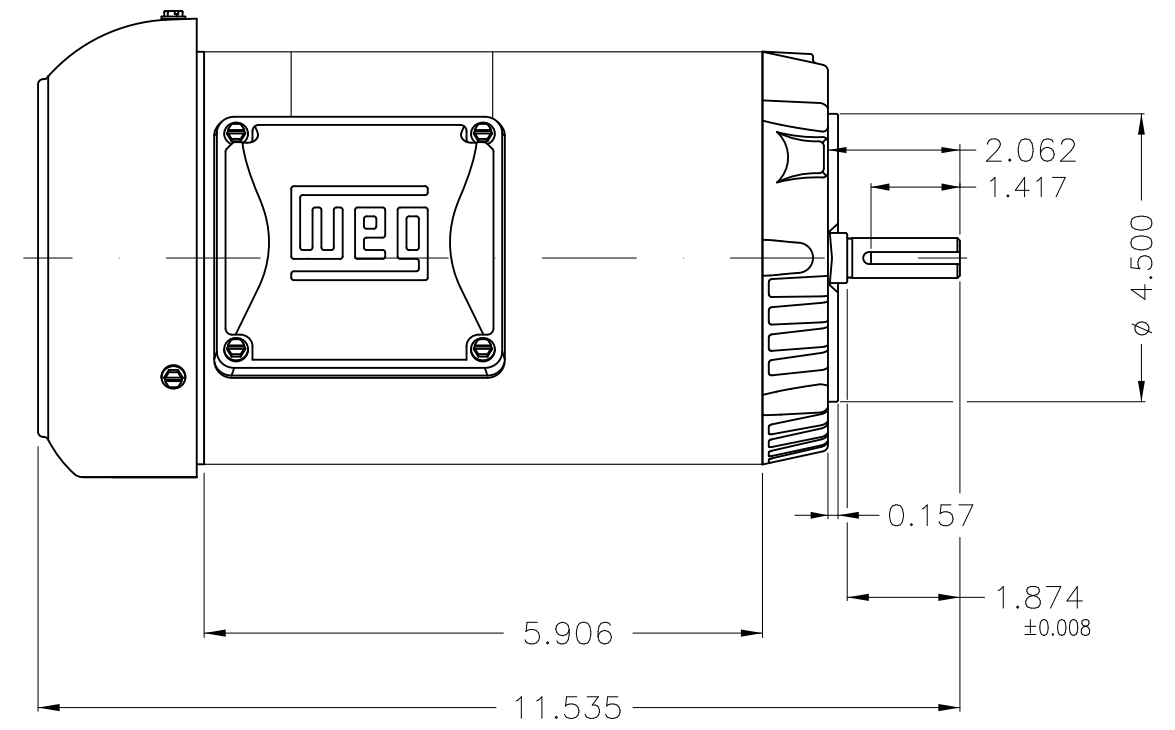
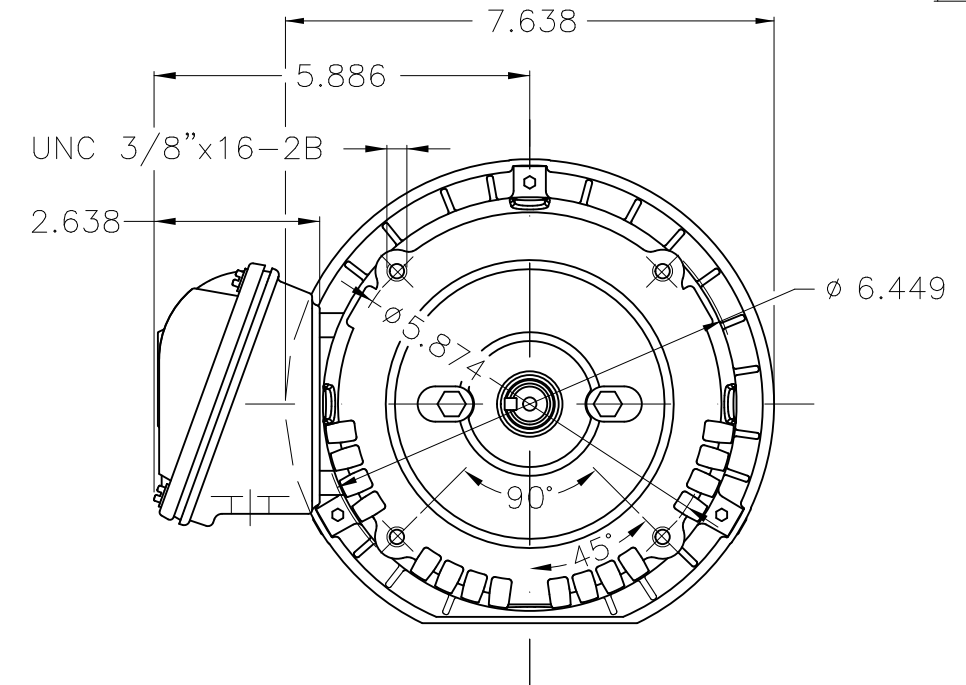
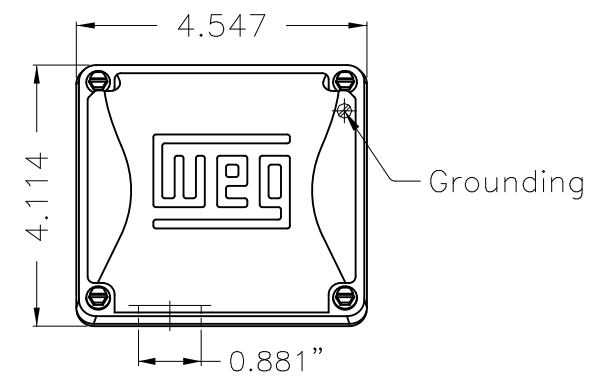
A

B

C

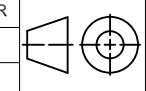
D

E



Dimensions in inches

Fan cover - steel plate  
 Color Munsell N 1 matte black  
 Painting plan 207N  
 Mounting F-1/B14R(D)

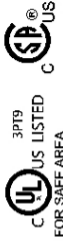
ECM	LOC	SUMMARY OF MODIFICATIONS	EXECUTED	CHECKED	RELEASED	DATE	VER
EXECUTED	PIRWUSER	 THREE PH. MOTOR ROLLED STEEL FRAME 56C IP55 TEFC					
CHECKED							
RELEASED							
REL DT.	WMO	Jaragua do Sul	Product Engineering	SHEET	1 / 1		

0.33 HP 04 Poles 60 Hz

A

**PREVIEW**  
WDD





MADE IN BRAZIL

**MAT: 14785546**

**W01.TE0IC0X0X**

**MODEL 3318ES3E56CFL-S**

**13APR2022 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**

<b>PH 3</b>	<b>Hz 60</b>	<b>HP 0.33</b>
<b>FR 56C</b>		<b>KW 0.25</b>
<b>DUTY CONT.</b>		<b>V 208-230/460</b>
<b>ALT 1000 m.a.s.l.</b>		<b>A 1.38-1.25/0.624</b>
<b>INS CL F AT 80K</b>	<b>IP55</b>	<b>SFA 1.38-1.44/0.718</b>
<b>AMB 40°C</b>	<b>DES -</b>	<b>SF 1.15</b>
<b>ENCL TEFC</b>	<b>CODE M</b>	<b>PF 0.68</b>
<b>USABLE @ 208V SF1.00</b>		<b>RPM 1765</b>
		<b>NEMA NOM. EFF 74.0%</b>

<b>ALTERNATE RATING: 0.33HP 50Hz 190-220/380-415V SF1.00</b>
<b>1.38-1.30/0.678-0.690A 1455RPM EFF 73.1% (IE2) IEC 60034-1</b>

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

<b>DE 6203-ZZ</b>	<b>ODE 6202-ZZ</b>	<b>MOBIL POLYREX EM</b>
-------------------	--------------------	-------------------------



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.

