

# DATA SHEET

## Three Phase Induction Motor - Squirrel Cage



Customer					
Product line	: NEMA Premium Efficiency Three-Phase	Product code :	14407414		
		Catalog # :	03018XT3ER286TC		
Frame	: 286TC	Cooling method	: IC411 - TEFC		
Insulation class	: F	Mounting	: W-6		
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>	: 520 lb		
Protection degree	: IP55	Moment of inertia (J)	: 5.16 sq.ft.lb		
Design	: B				
Output [HP]	30	30	30	30	30
Poles	4	4	4	4	4
Frequency [Hz]	60	50	50	50	50
Rated voltage [V]	230/460	380	400	415	415
Rated current [A]	72.0/36.0	43.4	41.4	40.4	40.4
L. R. Amperes [A]	569/284	278	298	311	311
LRC [A]	7.9x(Code G)	6.4x(Code F)	7.2x(Code G)	7.7x(Code G)	7.7x(Code G)
No load current [A]	29.0/14.5	14.5	15.5	16.5	16.5
Rated speed [RPM]	1770	1460	1465	1470	1470
Slip [%]	1.67	2.67	2.33	2.00	2.00
Rated torque [ft.lb]	89.0	108	108	108	108
Locked rotor torque [%]	310	229	260	290	290
Breakdown torque [%]	310	229	260	290	290
Service factor	1.15	1.00	1.00	1.00	1.00
Temperature rise	80 K	80 K	80 K	80 K	80 K
Locked rotor time	30s (cold) 17s (hot)	36s (cold) 20s (hot)	36s (cold) 20s (hot)	36s (cold) 20s (hot)	36s (cold) 20s (hot)
Noise level <sup>2</sup>	68.0 dB(A)	64.0 dB(A)	64.0 dB(A)	64.0 dB(A)	64.0 dB(A)
Efficiency (%)	25%	92.8	93.5	93.4	92.7
	50%	93.0	93.0	93.0	92.4
	75%	93.6	92.4	93.0	93.0
	100%	93.6	91.7	92.4	92.4
Power Factor	25%	0.42	0.47	0.44	0.42
	50%	0.66	0.71	0.68	0.66
	75%	0.77	0.80	0.78	0.77
	100%	0.82	0.84	0.83	0.82
Bearing type	: <u>Drive end</u> 6311 C3 <u>Non drive end</u> 6211 C3	Foundation loads			
Sealing	: Oil Seal Lip Seal	Max. traction	: 1096 lb		
Lubrication interval	: 12213 h 13608 h	Max. compression	: 1615 lb		
Lubricant amount	: 18 g 11 g				
Lubricant type	: Mobil Polyrex EM				
Notes					
USABLE @208V 79.6A SF 1.00 SFA 79.6A					
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	14/04/2022			1 / 22	

# DATA SHEET

## Three Phase Induction Motor - Squirrel Cage



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

### Thermal protection

ID	Application	Type	Quantity	Sensing Temperature
1	Winding	Thermostat - 2 wires	1 x Phase	155 °C

Rev.	Changes Summary	Performed	Checked	Date
Performed by				
Checked by			Page	Revision
Date	14/04/2022		2 / 22	

# TORQUE AND CURRENT VS SPEED CURVE



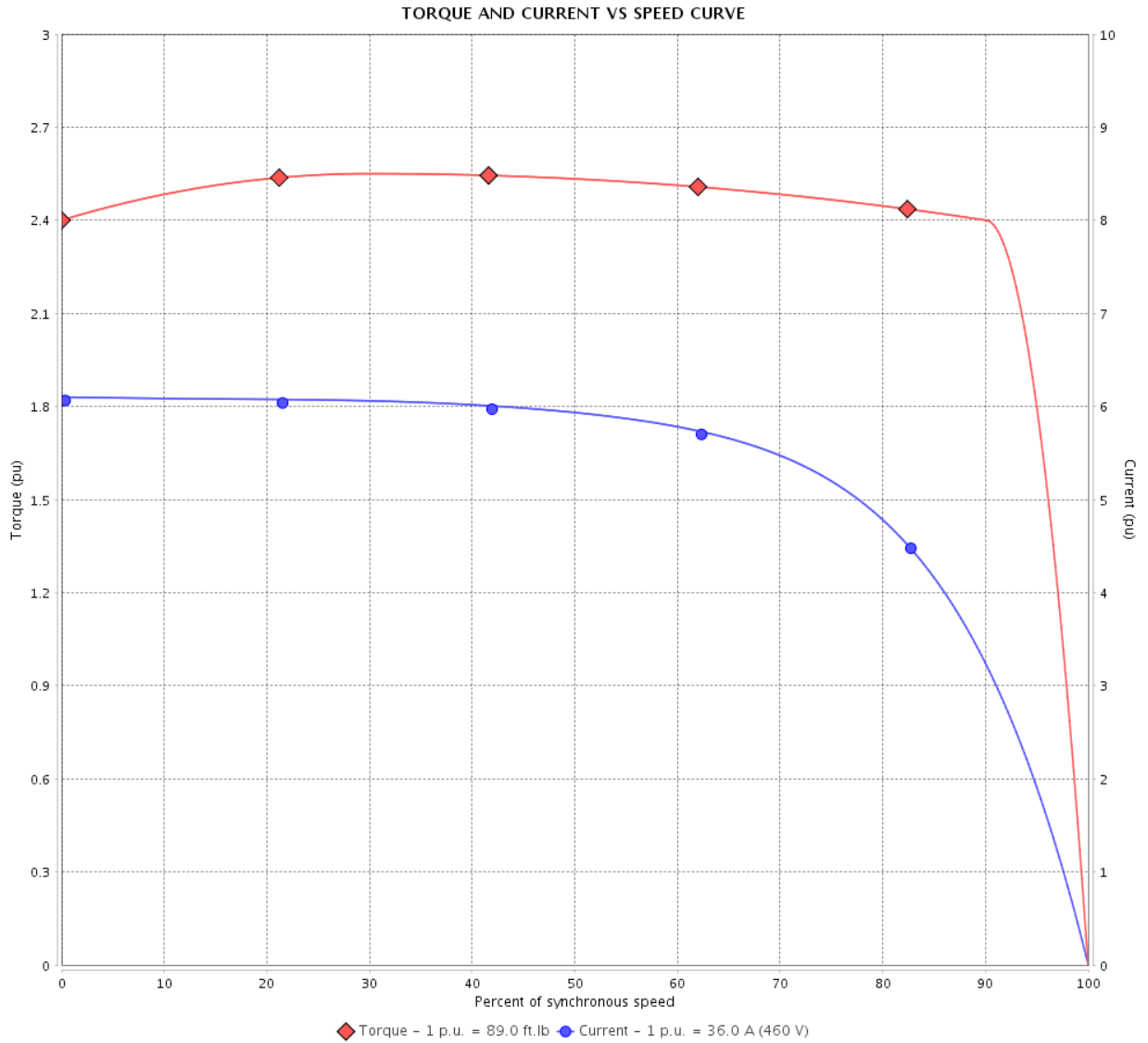
## Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14407414

Catalog # : 03018XT3ER286TC



Performance : 230/460 V 60 Hz 4P

Rated current : 72.0/36.0 A  
 LRC : 7.9  
 Rated torque : 89.0 ft.lb  
 Locked rotor torque : 310 %  
 Breakdown torque : 310 %  
 Rated speed : 1770 rpm

Moment of inertia (J) : 5.16 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.15  
 Temperature rise : 80 K  
 Design : B

Locked rotor time : 30s (cold) 17s (hot)

Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page 3 / 22	Revision
Checked by				
Date	14/04/2022			

# TORQUE AND CURRENT VS SPEED CURVE

Three Phase Induction Motor - Squirrel Cage



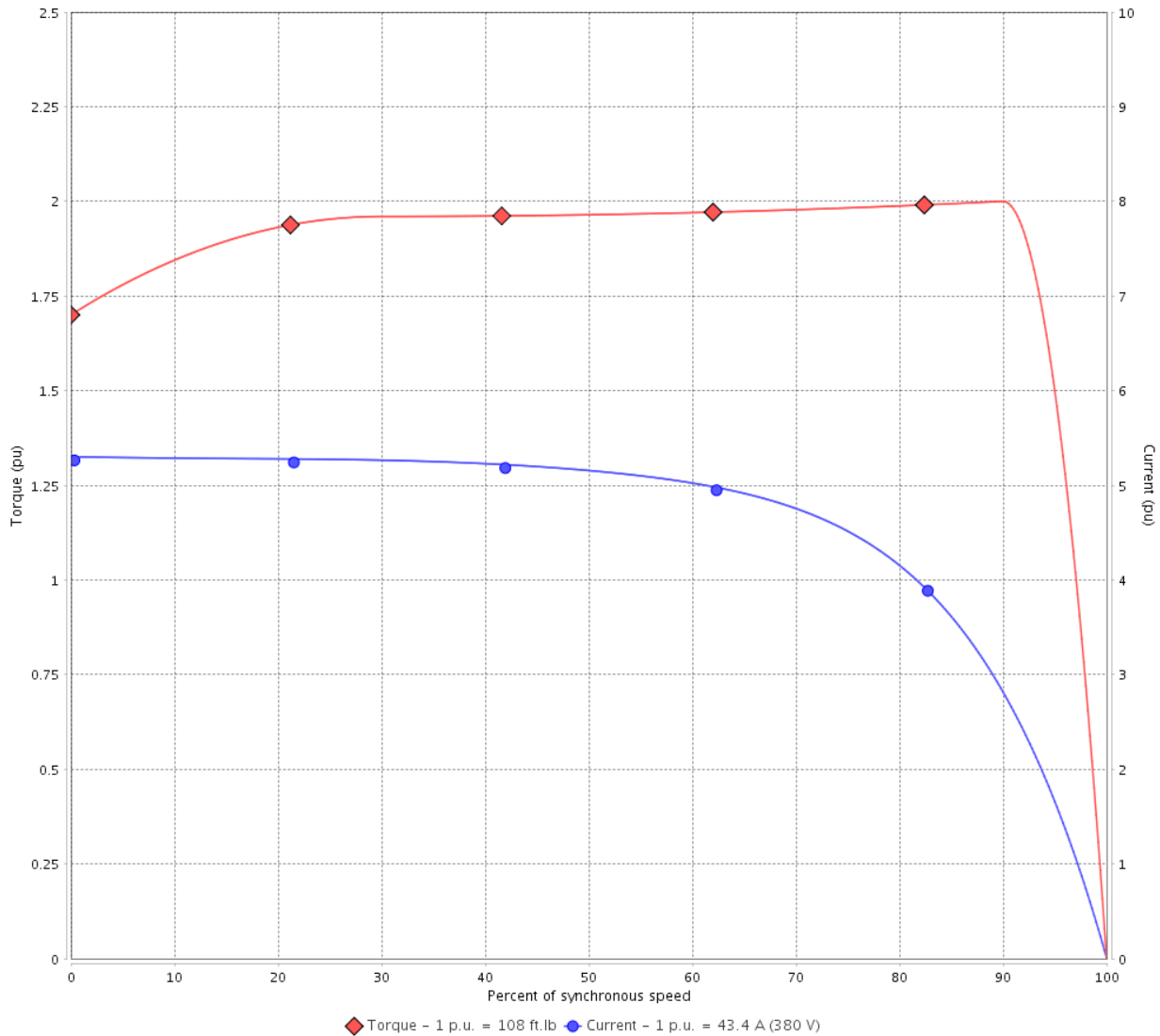
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14407414

Catalog # : 03018XT3ER286TC

TORQUE AND CURRENT VS SPEED CURVE



Performance : 380 V 50 Hz 4P IE2

Rated current	: 43.4 A	Moment of inertia (J)	: 5.16 sq.ft.lb
LRC	: 6.4	Duty cycle	: Cont.(S1)
Rated torque	: 108 ft.lb	Insulation class	: F
Locked rotor torque	: 229 %	Service factor	: 1.00
Breakdown torque	: 229 %	Temperature rise	: 80 K
Rated speed	: 1460 rpm	Design	: B

Locked rotor time : 36s (cold) 20s (hot)

Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page 4 / 22	Revision
Checked by				
Date	14/04/2022			

# TORQUE AND CURRENT VS SPEED CURVE



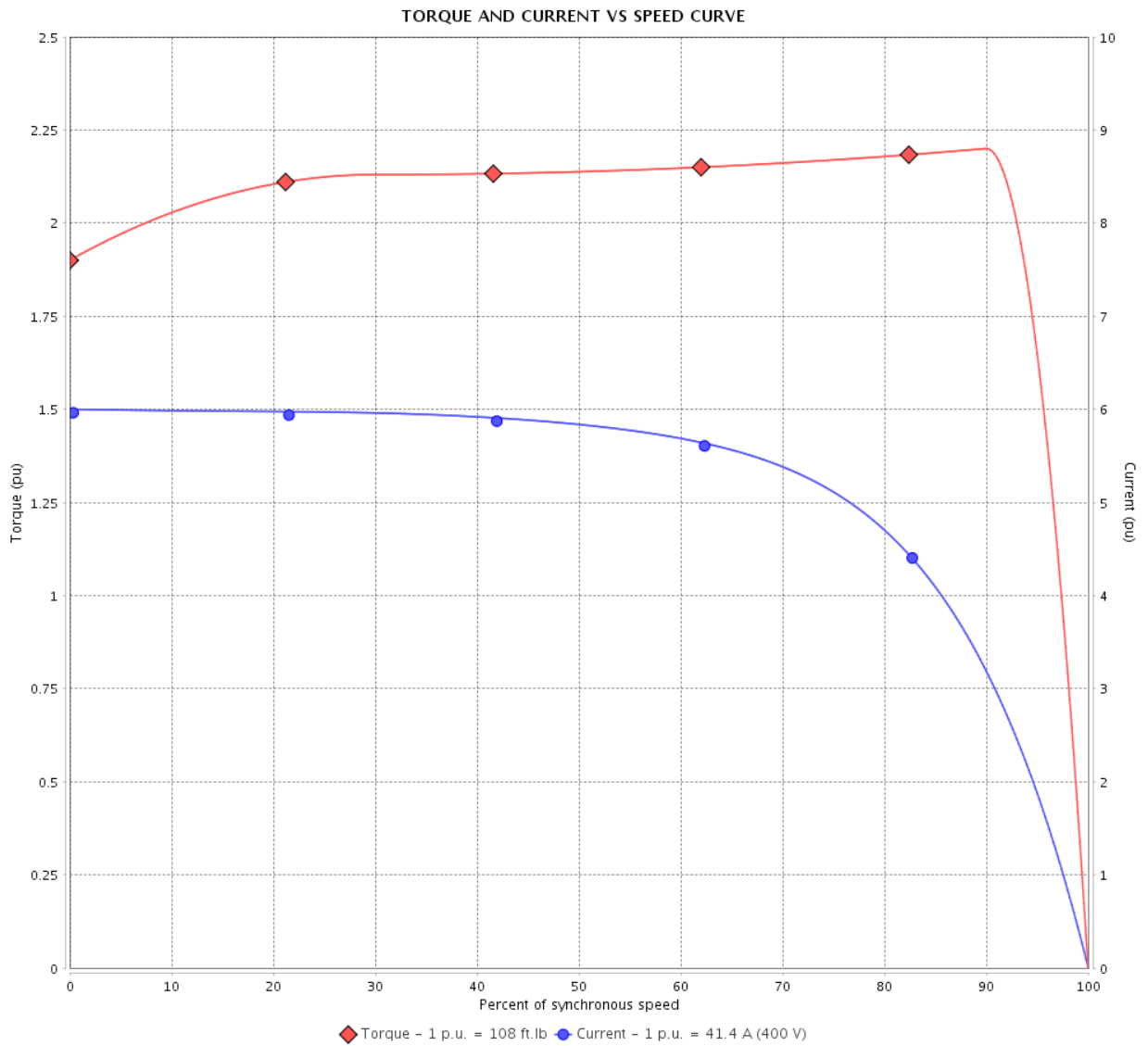
## Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14407414

Catalog # : 03018XT3ER286TC



Performance : 400 V 50 Hz 4P IE2

Rated current	: 41.4 A	Moment of inertia (J)	: 5.16 sq.ft.lb
LRC	: 7.2	Duty cycle	: Cont.(S1)
Rated torque	: 108 ft.lb	Insulation class	: F
Locked rotor torque	: 260 %	Service factor	: 1.00
Breakdown torque	: 260 %	Temperature rise	: 80 K
Rated speed	: 1465 rpm	Design	: B

Locked rotor time : 36s (cold) 20s (hot)

Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page 5 / 22	Revision
Checked by				
Date	14/04/2022			

# TORQUE AND CURRENT VS SPEED CURVE

Three Phase Induction Motor - Squirrel Cage



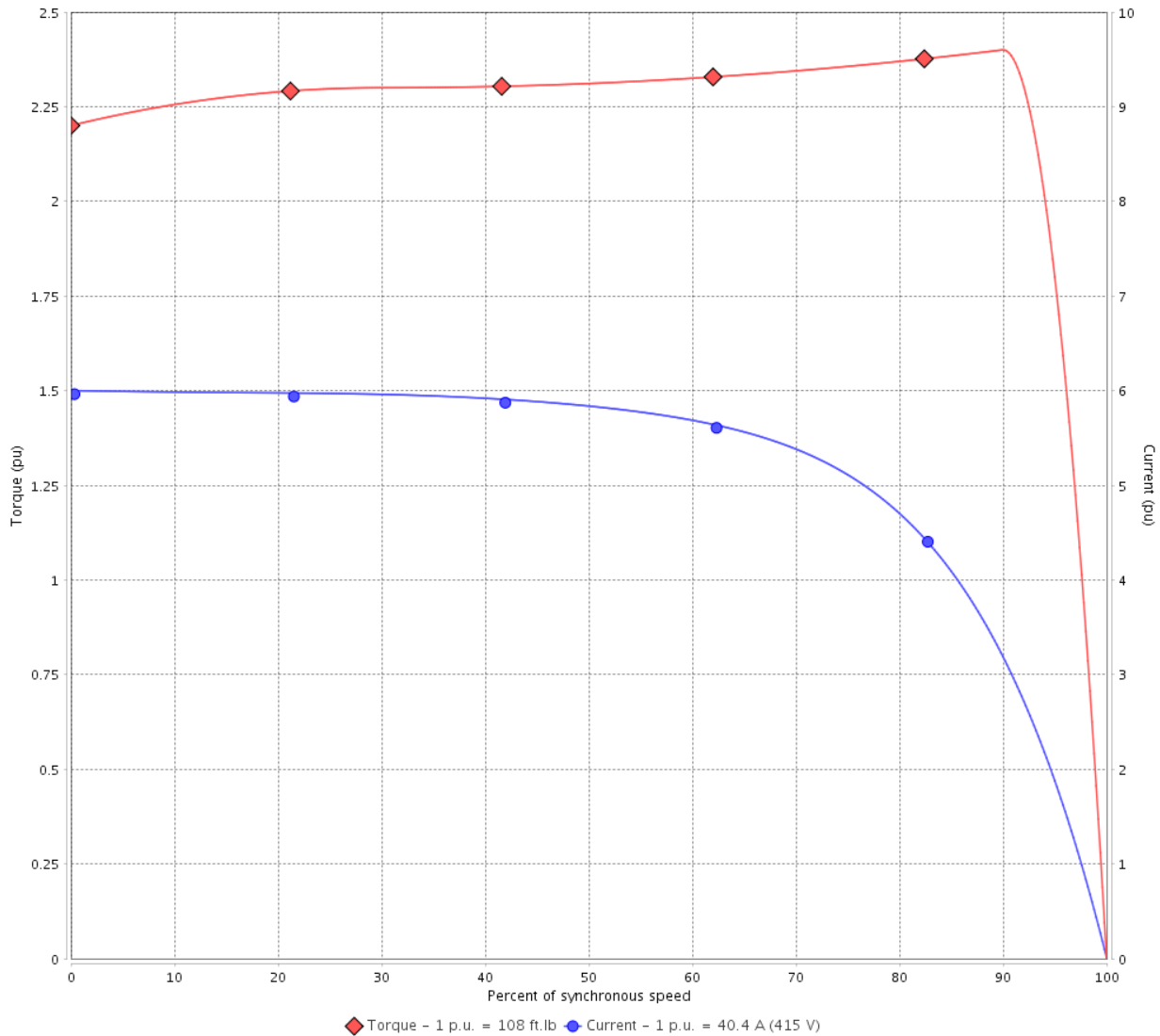
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14407414

Catalog # : 03018XT3ER286TC

TORQUE AND CURRENT VS SPEED CURVE



Performance : 415 V 50 Hz 4P IE2

Rated current	: 40.4 A	Moment of inertia (J)	: 5.16 sq.ft.lb
LRC	: 7.7	Duty cycle	: Cont.(S1)
Rated torque	: 108 ft.lb	Insulation class	: F
Locked rotor torque	: 290 %	Service factor	: 1.00
Breakdown torque	: 290 %	Temperature rise	: 80 K
Rated speed	: 1470 rpm	Design	: B

Locked rotor time : 36s (cold) 20s (hot)

Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page 6 / 22	Revision
Checked by				
Date	14/04/2022			

# LOAD PERFORMANCE CURVE

## Three Phase Induction Motor - Squirrel Cage

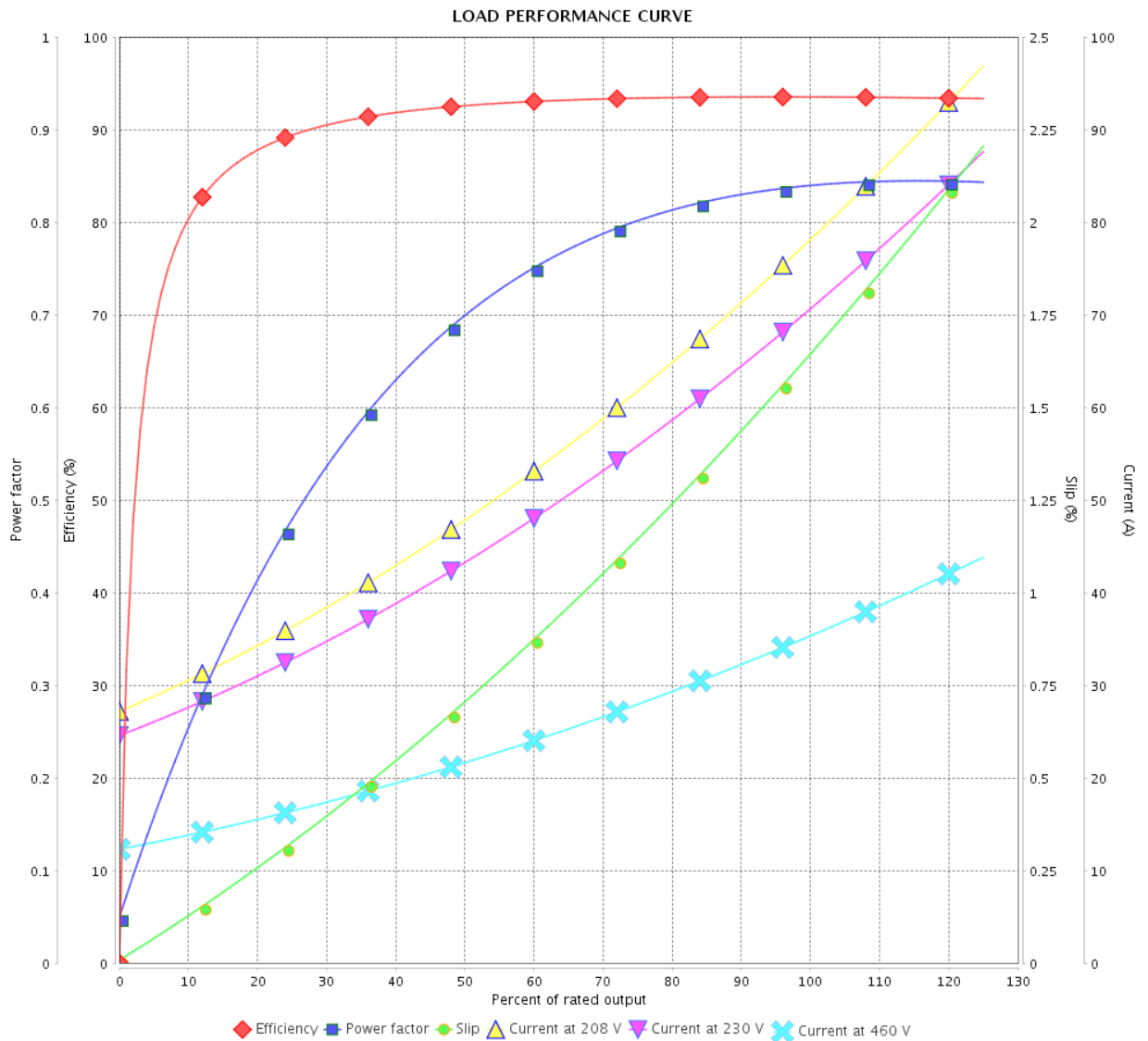


Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14407414

Catalog # : 03018XT3ER286TC



Performance : 230/460 V 60 Hz 4P

Rated current : 72.0/36.0 A  
 LRC : 7.9  
 Rated torque : 89.0 ft.lb  
 Locked rotor torque : 310 %  
 Breakdown torque : 310 %  
 Rated speed : 1770 rpm

Moment of inertia (J) : 5.16 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.15  
 Temperature rise : 80 K  
 Design : B

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

# LOAD PERFORMANCE CURVE

Three Phase Induction Motor - Squirrel Cage



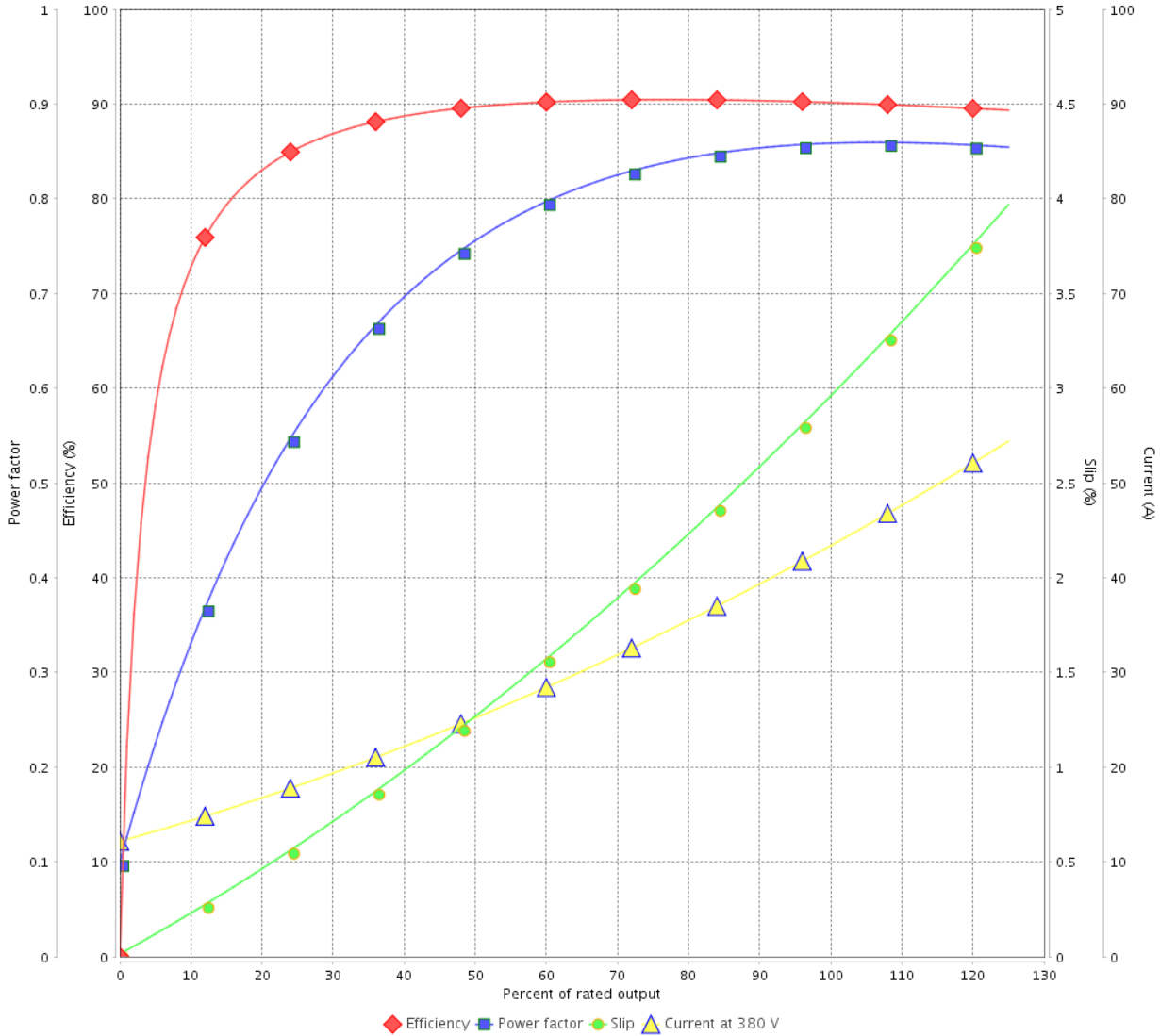
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14407414

Catalog # : 03018XT3ER286TC

LOAD PERFORMANCE CURVE



Performance : 380 V 50 Hz 4P IE2

Rated current : 43.4 A  
 LRC : 6.4  
 Rated torque : 108 ft.lb  
 Locked rotor torque : 229 %  
 Breakdown torque : 229 %  
 Rated speed : 1460 rpm

Moment of inertia (J) : 5.16 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
Performed by			Page 8 / 22	Revision
Checked by				
Date	14/04/2022			



# LOAD PERFORMANCE CURVE

## Three Phase Induction Motor - Squirrel Cage

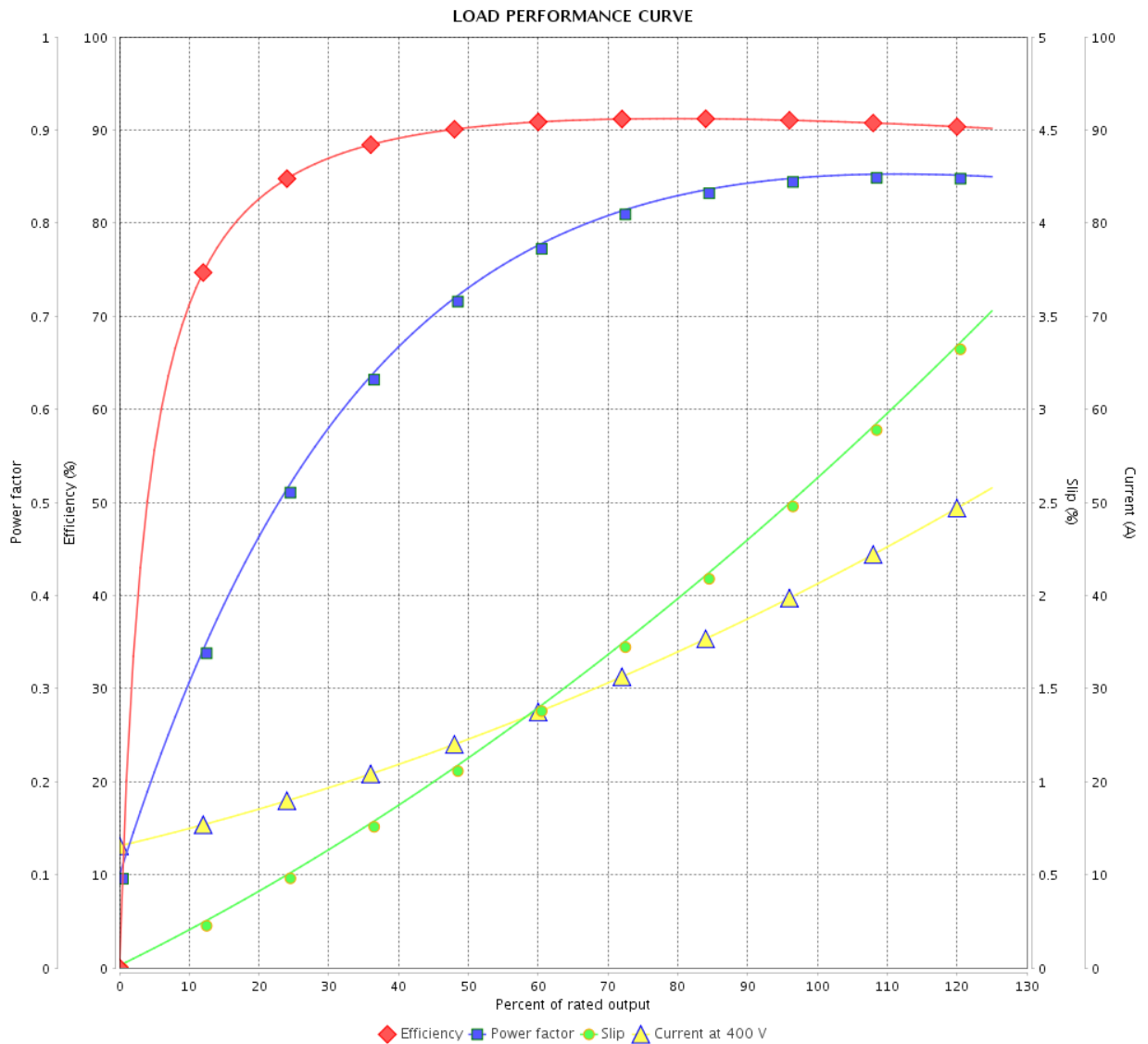


Customer : \_\_\_\_\_

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14407414

Catalog # : 03018XT3ER286TC



Performance : 400 V 50 Hz 4P IE2

Rated current : 41.4 A  
 LRC : 7.2  
 Rated torque : 108 ft.lb  
 Locked rotor torque : 260 %  
 Breakdown torque : 260 %  
 Rated speed : 1465 rpm

Moment of inertia (J) : 5.16 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
Performed by		Page		Revision
Checked by		9 / 22		
Date		14/04/2022		

# LOAD PERFORMANCE CURVE

Three Phase Induction Motor - Squirrel Cage

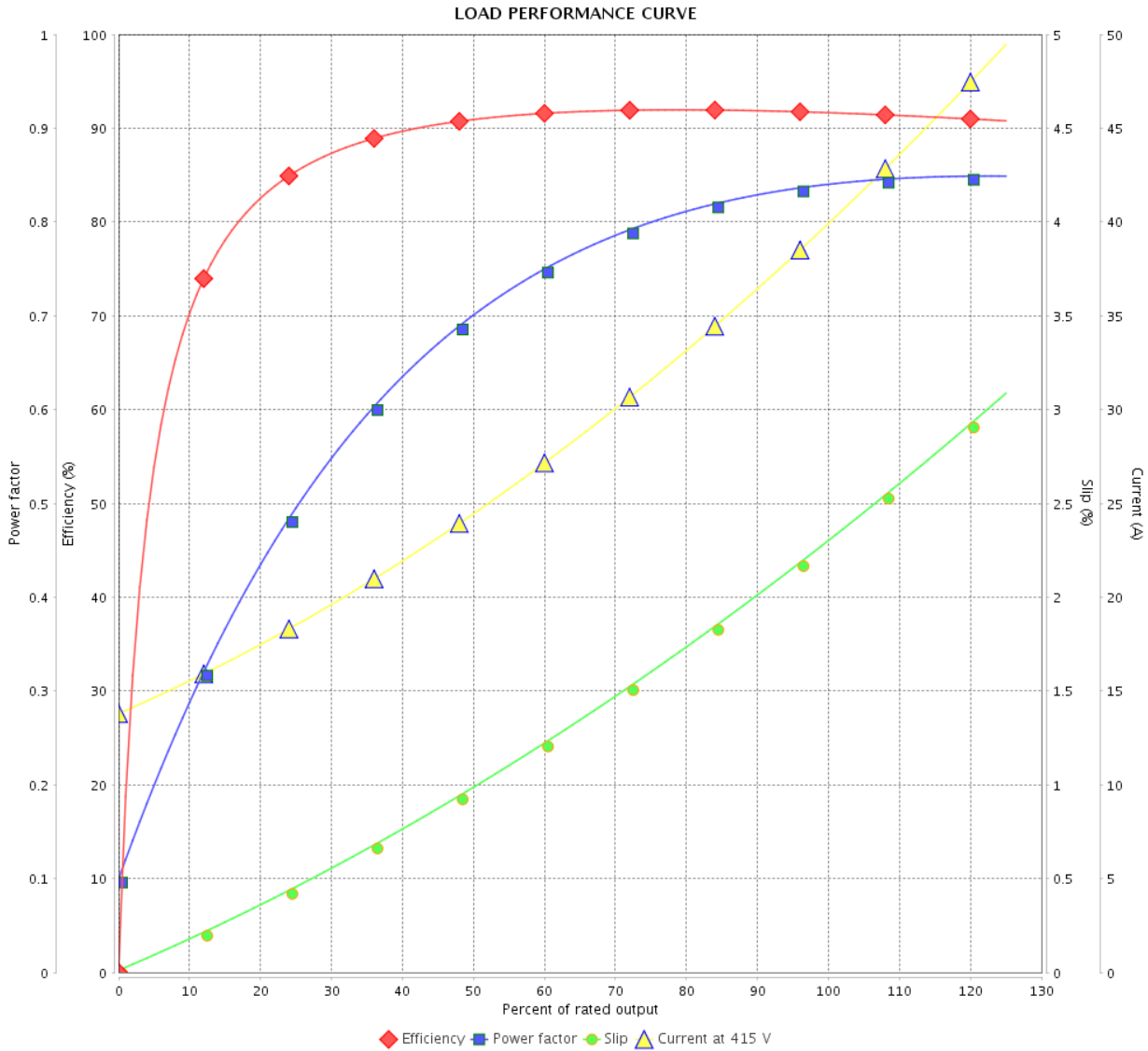


Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14407414

Catalog # : 03018XT3ER286TC



Performance : 415 V 50 Hz 4P IE2

Rated current : 40.4 A  
 LRC : 7.7  
 Rated torque : 108 ft.lb  
 Locked rotor torque : 290 %  
 Breakdown torque : 290 %  
 Rated speed : 1470 rpm

Moment of inertia (J) : 5.16 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
Performed by		Page		Revision
Checked by		10 / 22		
Date		14/04/2022		

# THERMAL LIMIT CURVE



## Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14407414

Catalog # : 03018XT3ER286TC

Performance : 230/460 V 60 Hz 4P

Rated current : 72.0/36.0 A  
 LRC : 7.9  
 Rated torque : 89.0 ft.lb  
 Locked rotor torque : 310 %  
 Breakdown torque : 310 %  
 Rated speed : 1770 rpm

Moment of inertia (J) : 5.16 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.15  
 Temperature rise : 80 K  
 Design : B

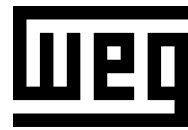
Heating constant

Cooling constant

Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page 11 / 22	Revision
Checked by				
Date	14/04/2022			

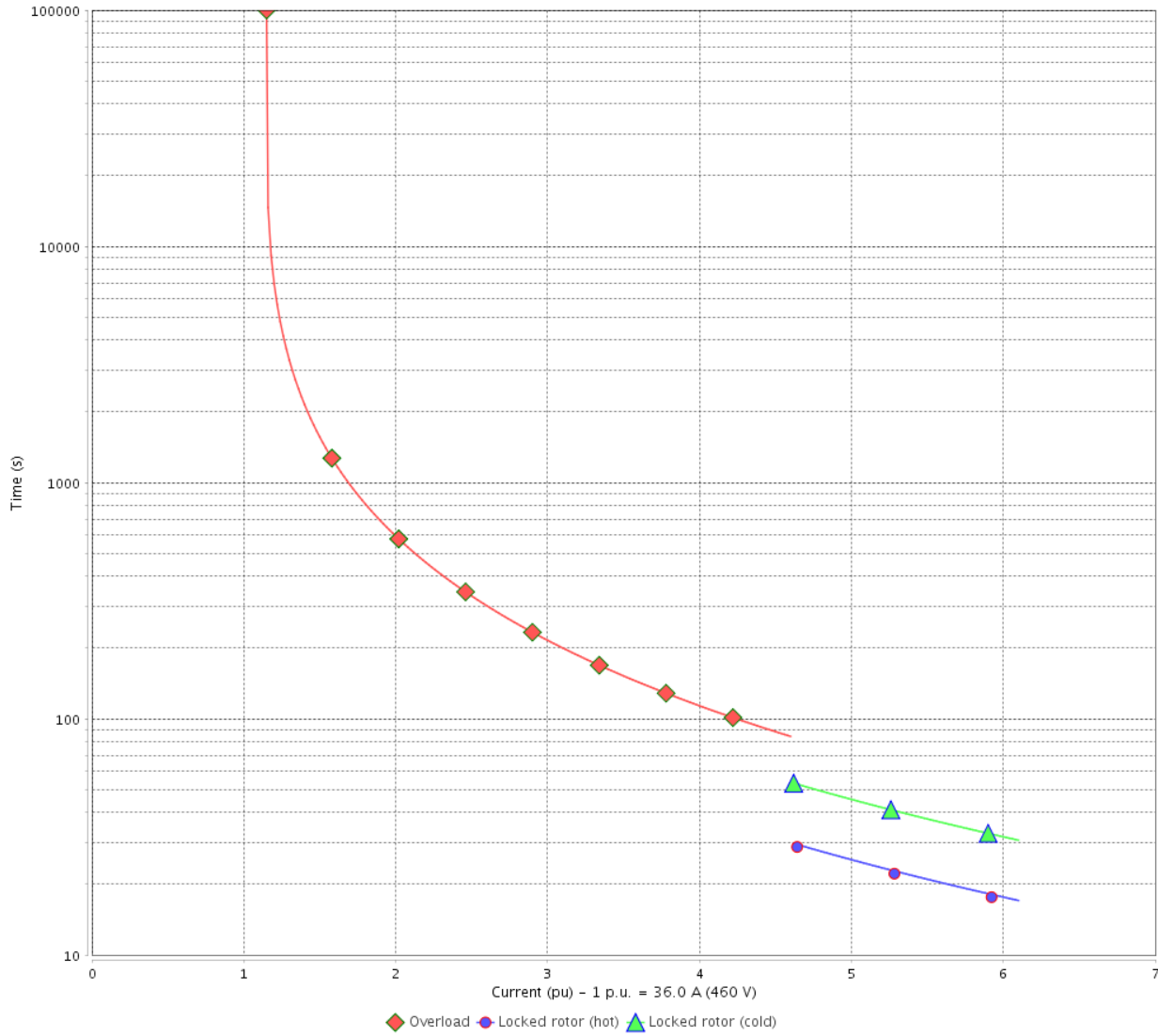
# THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



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

THERMAL LIMIT CURVE



Rev.	Changes Summary	Performed	Checked	Date
Performed by		Page		Revision
Checked by		12 / 22		
Date		14/04/2022		

# THERMAL LIMIT CURVE



## Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : NEMA Premium Efficiency Three-Phase  
 Product code : 14407414  
 Catalog # : 03018XT3ER286TC

Performance : 380 V 50 Hz 4P IE2

Rated current : 43.4 A	Moment of inertia (J) : 5.16 sq.ft.lb
LRC : 6.4	Duty cycle : Cont.(S1)
Rated torque : 108 ft.lb	Insulation class : F
Locked rotor torque : 229 %	Service factor : 1.00
Breakdown torque : 229 %	Temperature rise : 80 K
Rated speed : 1460 rpm	Design : B

Heating constant

Cooling constant

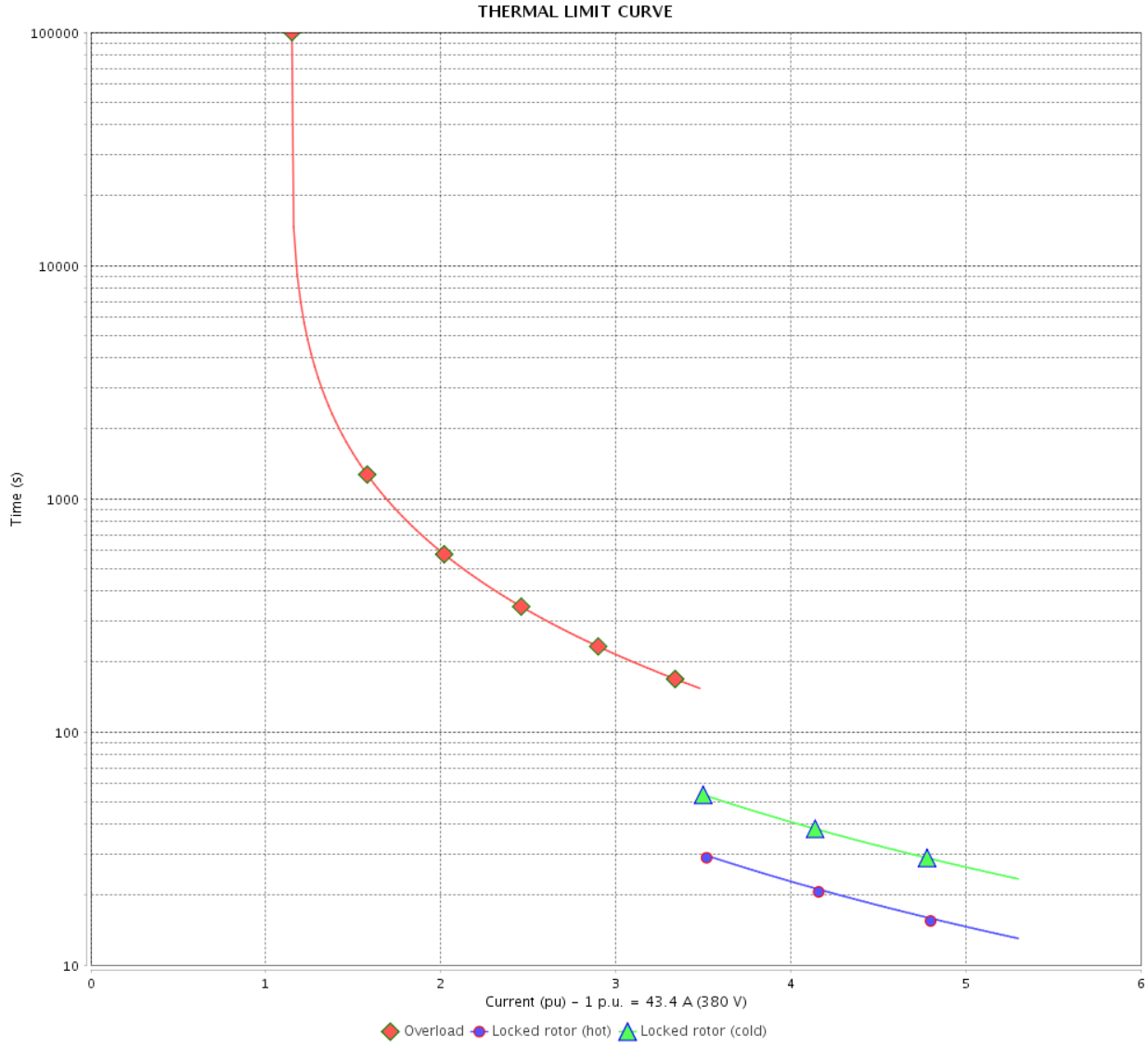
Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page	Revision
Checked by				
Date	14/04/2022			

# THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



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



Rev.	Changes Summary	Performed	Checked	Date
Performed by		Page 14 / 22		Revision
Checked by				
Date				

# THERMAL LIMIT CURVE



## Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14407414

Catalog # : 03018XT3ER286TC

Performance : 400 V 50 Hz 4P IE2

Rated current : 41.4 A  
 LRC : 7.2  
 Rated torque : 108 ft.lb  
 Locked rotor torque : 260 %  
 Breakdown torque : 260 %  
 Rated speed : 1465 rpm

Moment of inertia (J) : 5.16 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : B

Heating constant

Cooling constant

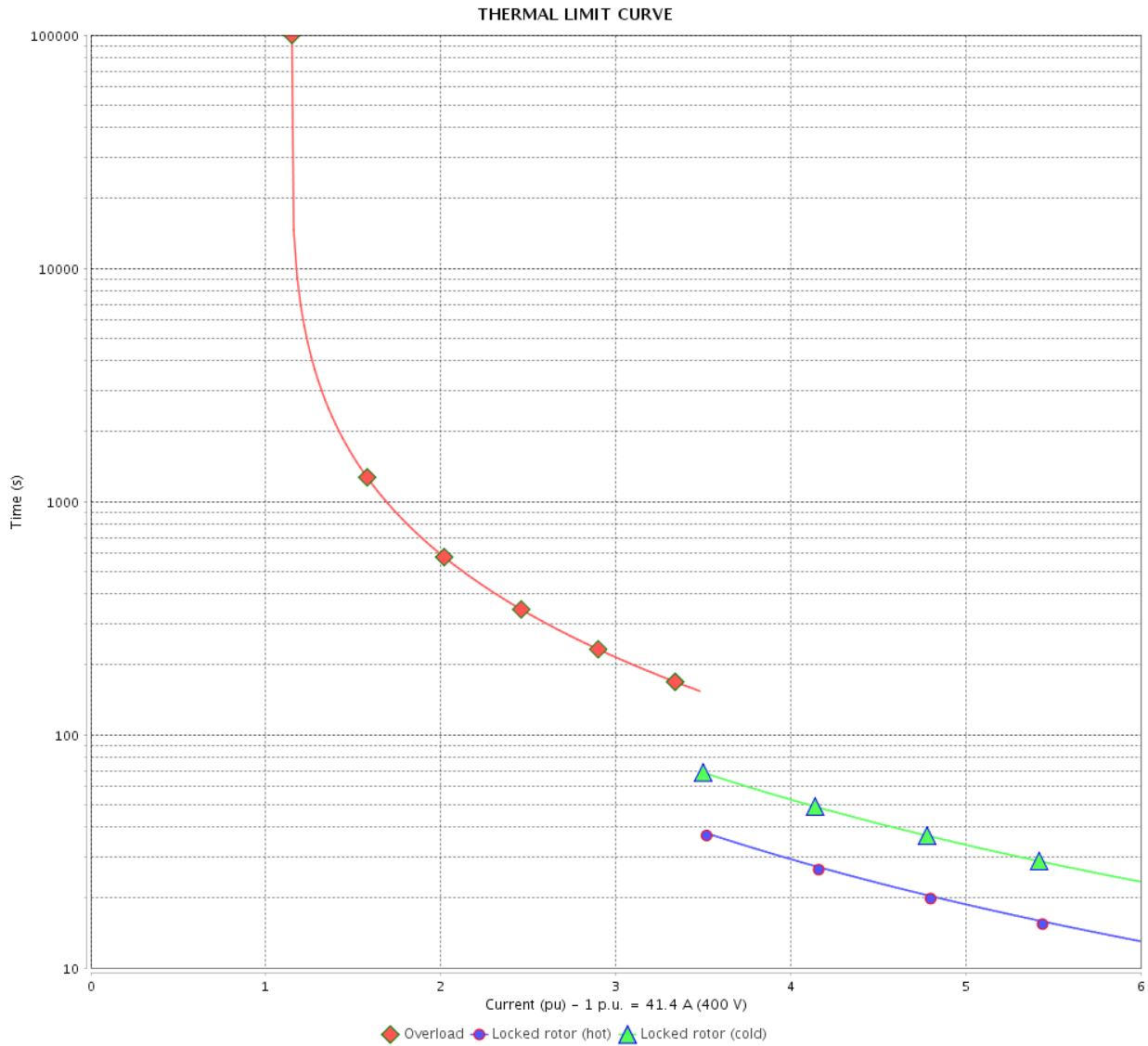
Rev.	Changes Summary	Performed	Checked	Date
Performed by				
Checked by			Page	Revision
Date	14/04/2022		15 / 22	

# THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



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



Rev.	Changes Summary	Performed	Checked	Date
Performed by		Page 16 / 22		Revision
Checked by				
Date				



# THERMAL LIMIT CURVE



## Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14407414

Catalog # : 03018XT3ER286TC

Performance : 415 V 50 Hz 4P IE2

Rated current : 40.4 A  
 LRC : 7.7  
 Rated torque : 108 ft.lb  
 Locked rotor torque : 290 %  
 Breakdown torque : 290 %  
 Rated speed : 1470 rpm

Moment of inertia (J) : 5.16 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : B

Heating constant

Cooling constant

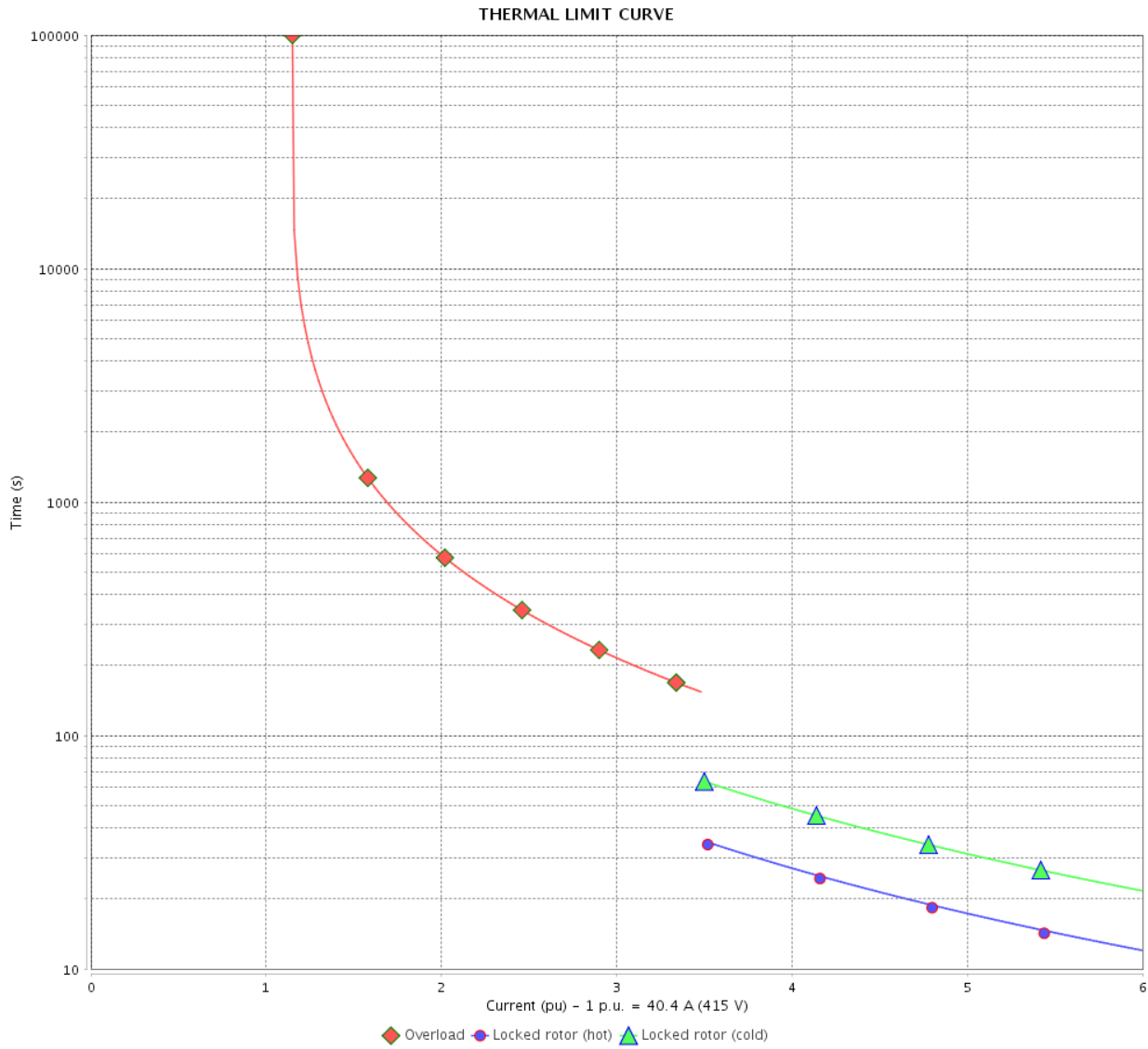
Rev.	Changes Summary	Performed	Checked	Date
Performed by				
Checked by			Page	Revision
Date	14/04/2022		17 / 22	

# THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



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



Rev.	Changes Summary	Performed	Checked	Date
Performed by		Page 18 / 22		Revision
Checked by				
Date				

# VFD OPERATION CURVE

## Three Phase Induction Motor - Squirrel Cage

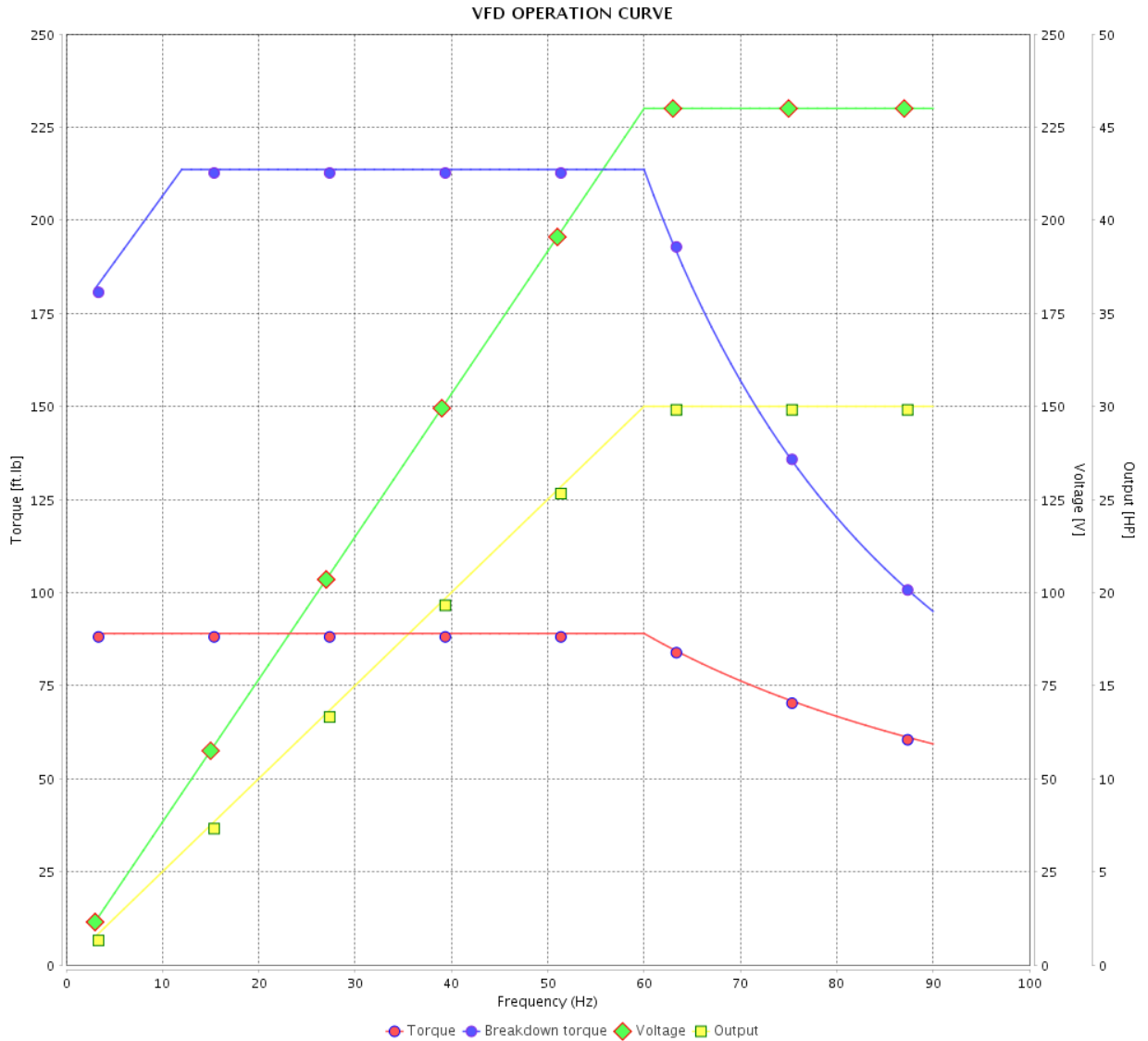


Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14407414

Catalog # : 03018XT3ER286TC



Performance : 230/460 V 60 Hz 4P

Rated current : 72.0/36.0 A  
 LRC : 7.9  
 Rated torque : 89.0 ft.lb  
 Locked rotor torque : 310 %  
 Breakdown torque : 310 %  
 Rated speed : 1770 rpm

Moment of inertia (J) : 5.16 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.15  
 Temperature rise : 80 K  
 Design : B

Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page 19 / 22	Revision
Checked by				
Date	14/04/2022			

# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage



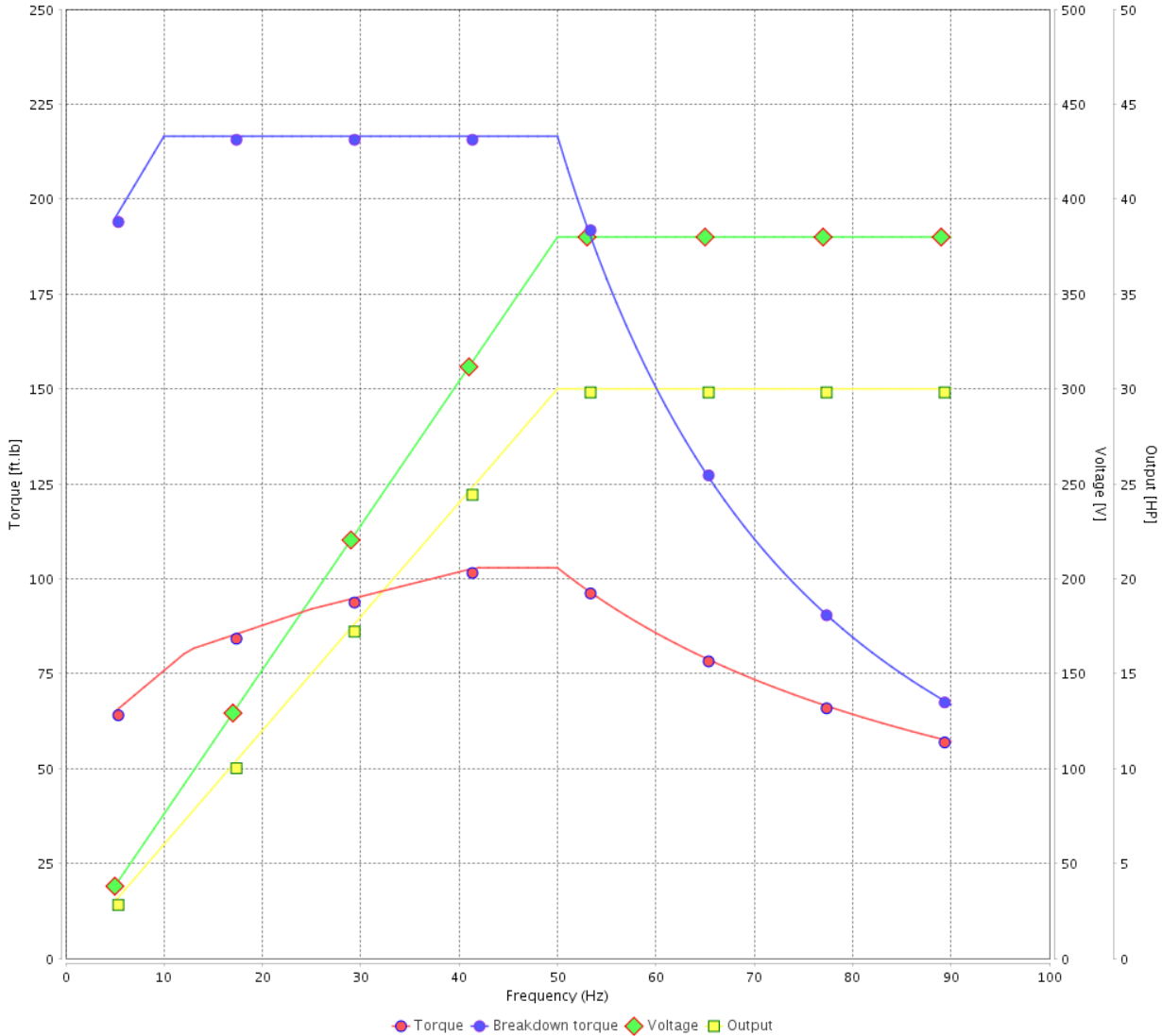
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14407414

Catalog # : 03018XT3ER286TC

VFD OPERATION CURVE



Performance : 380 V 50 Hz 4P IE2

Rated current	: 43.4 A	Moment of inertia (J)	: 5.16 sq.ft.lb
LRC	: 6.4	Duty cycle	: Cont.(S1)
Rated torque	: 108 ft.lb	Insulation class	: F
Locked rotor torque	: 229 %	Service factor	: 1.00
Breakdown torque	: 229 %	Temperature rise	: 80 K
Rated speed	: 1460 rpm	Design	: B

Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page 20 / 22	Revision
Checked by				
Date	14/04/2022			

# VFD OPERATION CURVE

## Three Phase Induction Motor - Squirrel Cage

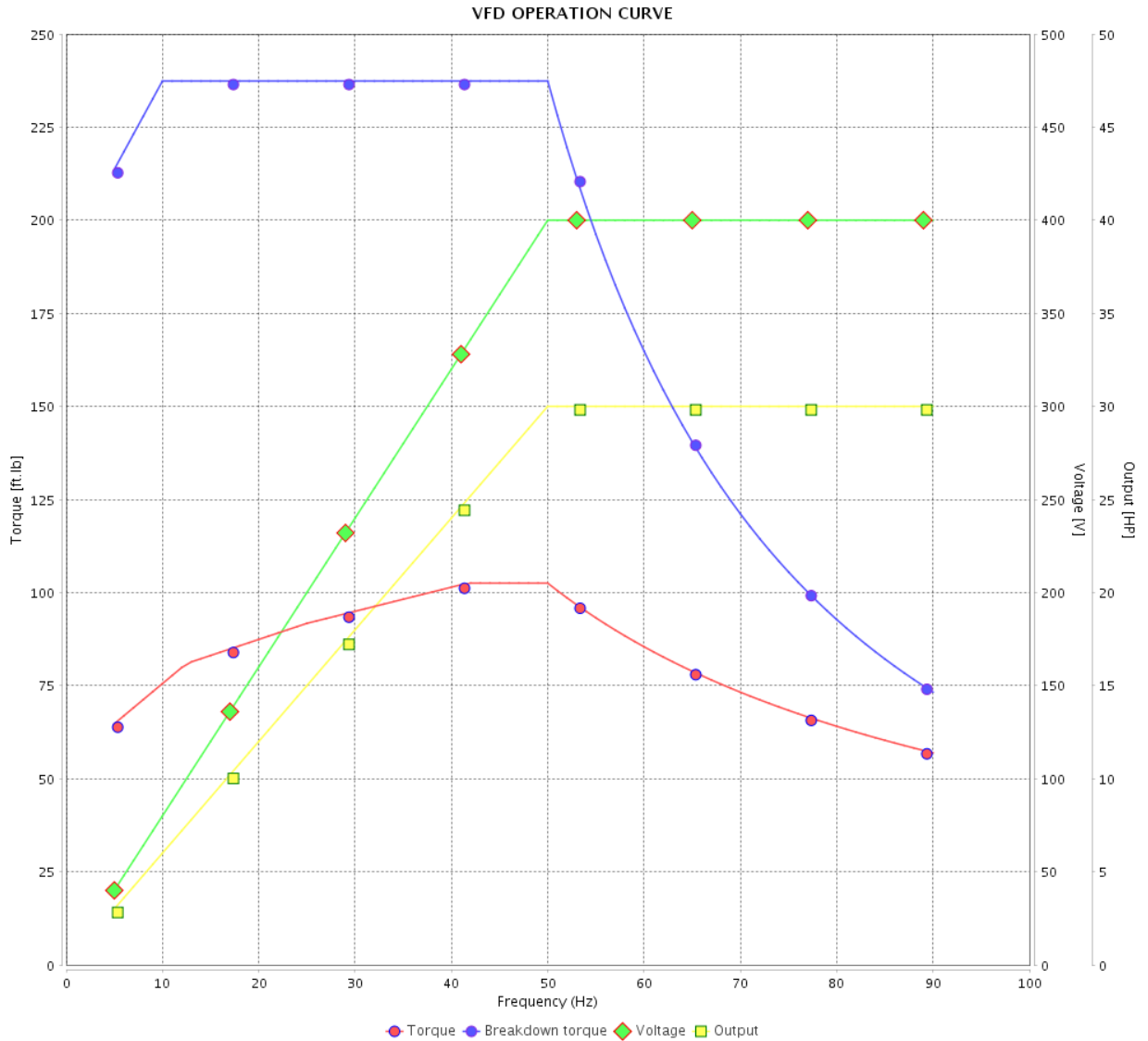


Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14407414

Catalog # : 03018XT3ER286TC



Performance : 400 V 50 Hz 4P IE2

Rated current : 41.4 A  
 LRC : 7.2  
 Rated torque : 108 ft.lb  
 Locked rotor torque : 260 %  
 Breakdown torque : 260 %  
 Rated speed : 1465 rpm

Moment of inertia (J) : 5.16 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
Performed by			Page	Revision
Checked by			21 / 22	
Date	14/04/2022			

# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

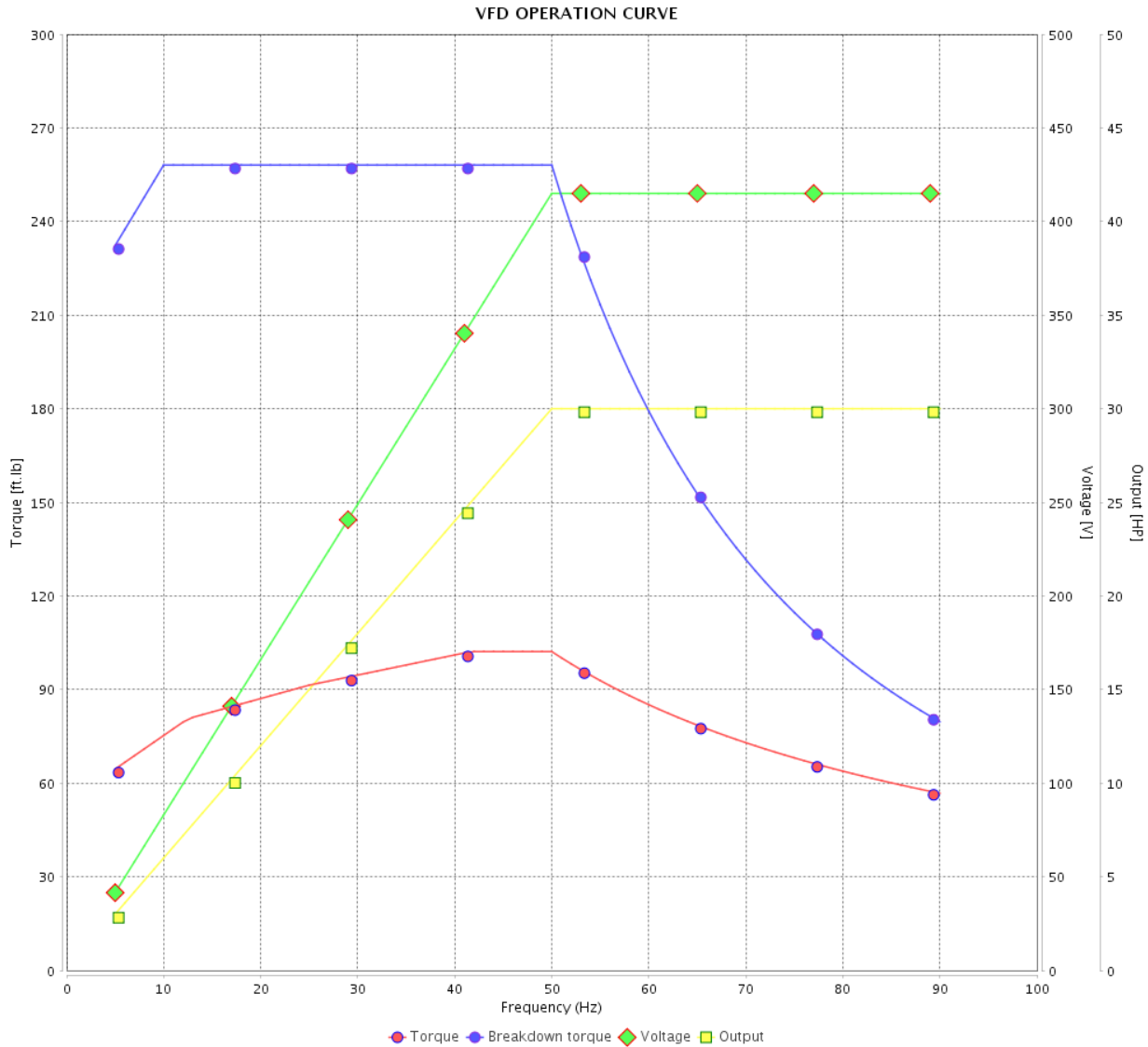


Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14407414

Catalog # : 03018XT3ER286TC

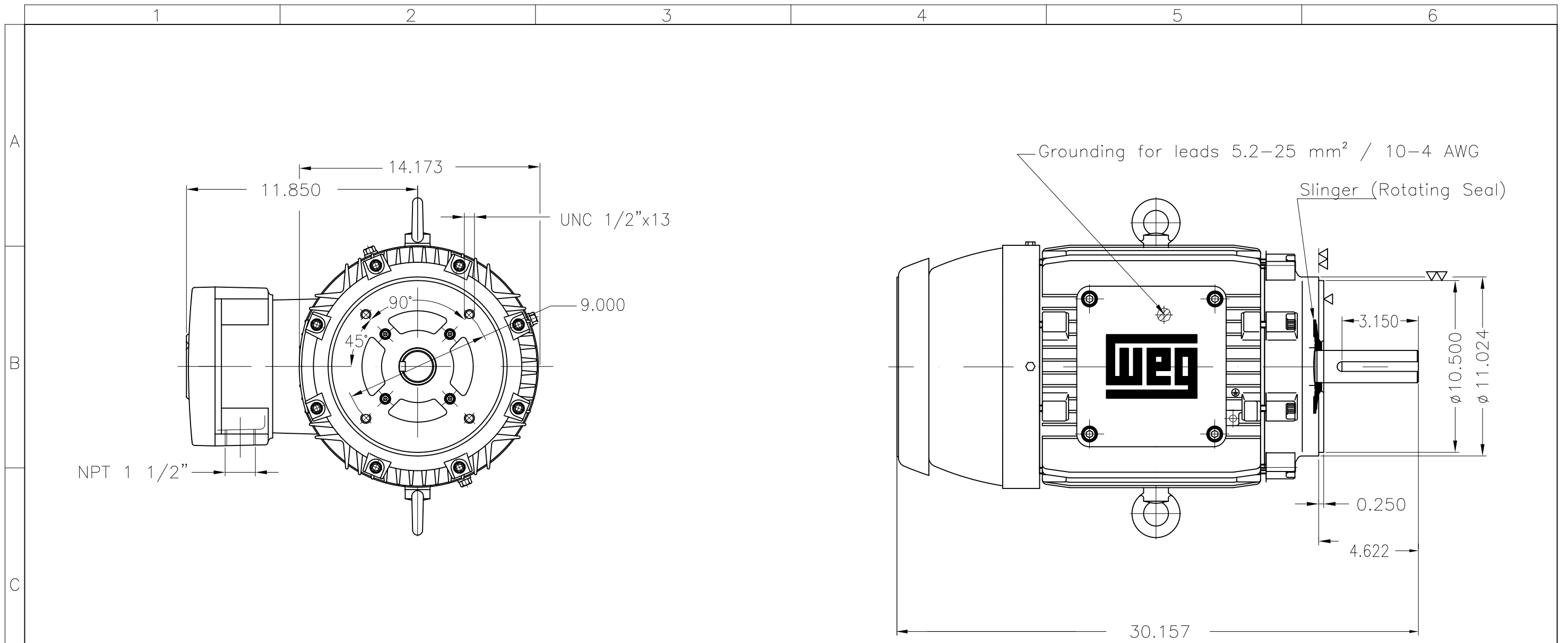


Performance : 415 V 50 Hz 4P IE2

Rated current : 40.4 A  
 LRC : 7.7  
 Rated torque : 108 ft.lb  
 Locked rotor torque : 290 %  
 Breakdown torque : 290 %  
 Rated speed : 1470 rpm

Moment of inertia (J) : 5.16 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
Performed by		Page		Revision
Checked by		22 / 22		
Date		14/04/2022		



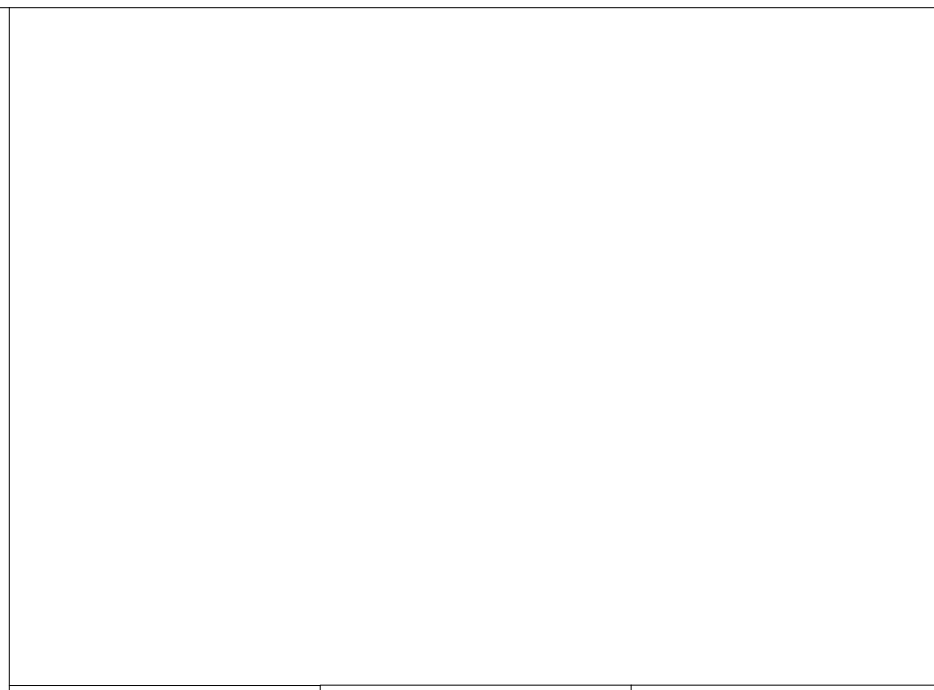
A

B

C

D

E



30 HP 04 Poles 60 Hz										A				
ECM										LOC				
SUMMARY OF MODIFICATIONS										EXECUTED	CHECKED	RELEASED	DATE	VER
EXECUTED										PIRWBUSER	THREE PH. MOTOR EXPLOSION PROOF PREM. EFF.		PREVIEW	
CHECKED											FRAME 286TC IP55 TEFC		WDD	
RELEASED													SHEET	
REL DT.										WMO	Jaragua do Sul	Product Engineering	1 / 1	

With grease fitting

Color RAL 5009

Painting plan 202P

Mounting NEMA W-6

Mounting V18

Dimensions in inches

XME A3

MADE IN BRAZIL

**W21X NEMA**  
**Premium**

14407414

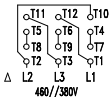
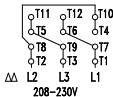


CC029A

*Inverter Duty Motor*  
*Severe Duty*

MODEL 03018XT3ER286TC

PH 3	FR 286TC		
HP(kW) 30.0(22.0)		HZ 60	IP55
V 230/460		A 70.2/35.1	
RPM 1770		NEMA NOM EFF 93.6%	
PF 0.84		SFA 80.7/40.4	DES B
INS CL F $\Delta T$ 80 K		SF 1.15	ENCL TEFC
DUTY CONT.		CODE G	ALT 1000 m.a.s.l.
AMB 40°C	USABLE @208V	79.6 A	SF 1.00
AMB 55°C SF1.0			
30HP 22kW 50Hz 380V 43.4A 1455RPM SF1.00 EFF 90.2% (IE1)			



→ 6311-C3 MOBIL POLYREX EM  
→ 6211-C3 18 g 12213 h

500 Lbs



TEMP CODE T3C  
CSA/UL: Class I - Div. 1 - Groups C and D  
CSA: Class II - Div. 1 - Groups F and G  
CSA: Class I - Zone 1 - IIB

EXPLOSION PROOF MOTOR

FOR USE ON VPWM VFD 1000:1VT, 6:1CT, 1.0SF, T3C, AMB 40°C.