

DATA SHEET

Three Phase Induction Motor - Squirrel Cage



Customer					
Product line		: NEMA Premium Efficiency Three-Phase		Product code : 14406886	
				Catalog # : 02036XT3E256T	
Frame : 256T		Cooling method : IC411 - TEFC			
Insulation class : F		Mounting : F-1			
Duty cycle : Cont.(S1)		Rotation ¹ : Both (CW and CCW)			
Ambient temperature : -20°C to +40°C		Starting method : Direct On Line			
Altitude : 1000 m.a.s.l.		Approx. weight ² : 358 lb			
Protection degree : IP55		Moment of inertia (J) : 1.45 sq.ft.lb			
Design : B					
Output [HP]	20	20	20	20	20
Poles	2	2	2	2	2
Frequency [Hz]	60	50	50	50	50
Rated voltage [V]	230/460	380	400	415	415
Rated current [A]	46.4/23.2	27.8	26.4	25.8	25.8
L. R. Amperes [A]	288/144	136	145	157	157
LRC [A]	6.2x(Code G)	4.9x(Code D)	5.5x(Code F)	6.1x(Code G)	6.1x(Code G)
No load current [A]	13.4/6.70	6.40	6.80	7.20	7.20
Rated speed [RPM]	3530	2900	2910	2920	2920
Slip [%]	1.94	3.33	3.00	2.67	2.67
Rated torque [ft.lb]	29.8	36.2	36.1	36.0	36.0
Locked rotor torque [%]	200	140	160	180	180
Breakdown torque [%]	250	190	210	229	229
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	46s (cold) 26s (hot)	30s (cold) 17s (hot)	30s (cold) 17s (hot)	30s (cold) 17s (hot)	30s (cold) 17s (hot)
Noise level ²	75.0 dB(A)	70.0 dB(A)	70.0 dB(A)	70.0 dB(A)	70.0 dB(A)
Efficiency (%)	25%	90.0	89.9	89.9	89.9
	50%	90.2	90.2	90.2	90.2
	75%	91.0	91.0	91.0	91.0
	100%	91.0	91.0	91.0	91.0
Power Factor	25%	0.55	0.61	0.58	0.55
	50%	0.79	0.83	0.81	0.79
	75%	0.86	0.88	0.87	0.86
	100%	0.89	0.90	0.90	0.89
Bearing type		Drive end : 6309 C3	Non drive end : 6209 C3	Foundation loads	
Sealing		: Oil Seal	: Lip Seal	Max. traction : 218 lb	
Lubrication interval		: 15797 h	: 18447 h	Max. compression : 575 lb	
Lubricant amount		: 13 g	: 9 g		
Lubricant type		: Mobil Polyrex EM			
Notes					
USABLE @208V 50.6A SF 1.10 SFA 55.6A					
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	

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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



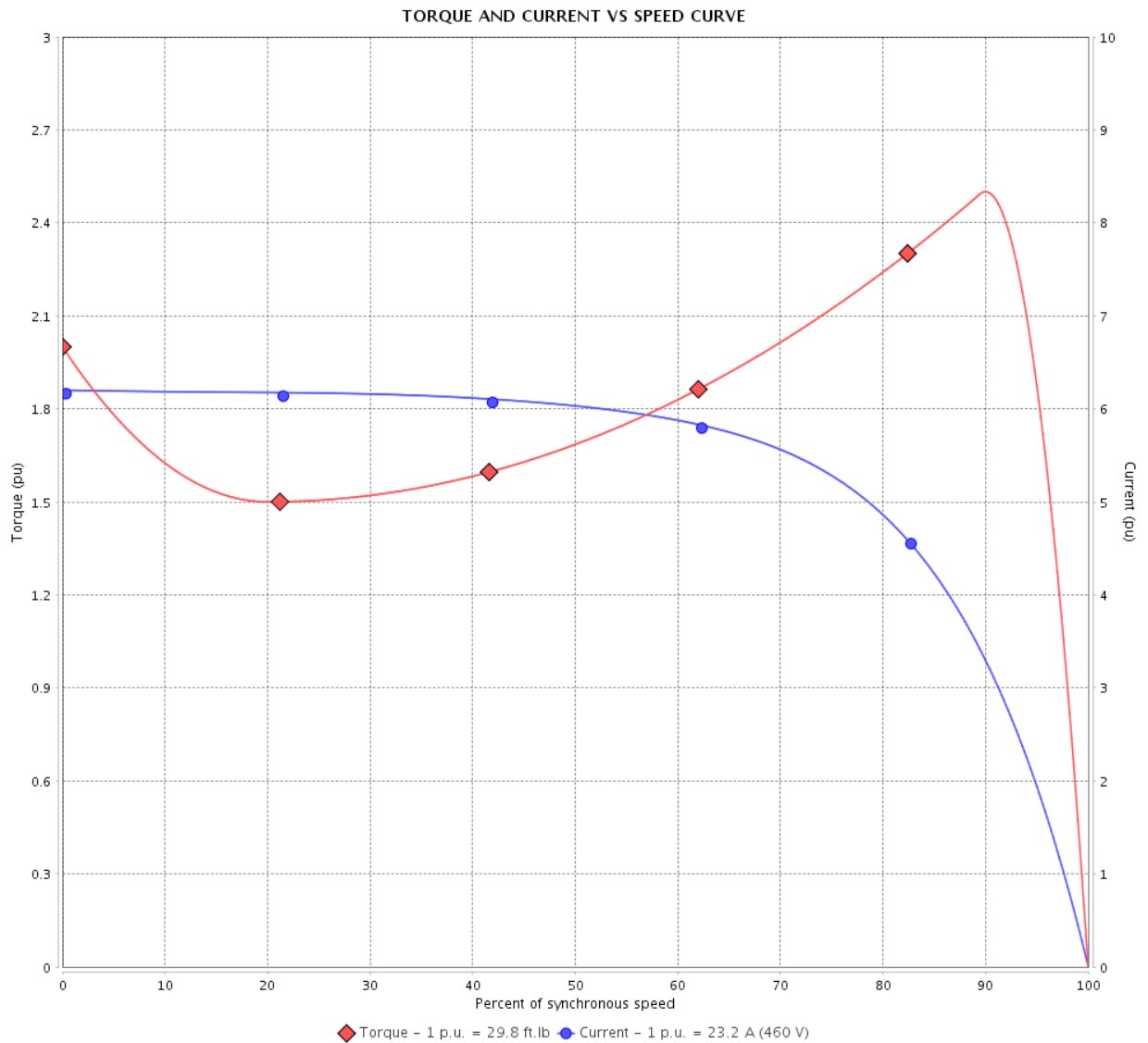
Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14406886

Catalog # : 02036XT3E256T



Performance : 230/460 V 60 Hz 2P

Rated current : 46.4/23.2 A
 LRC : 6.2
 Rated torque : 29.8 ft.lb
 Locked rotor torque : 200 %
 Breakdown torque : 250 %
 Rated speed : 3530 rpm

Moment of inertia (J) : 1.45 sq.ft.lb
 Duty cycle : Cont.(S1)
 Insulation class : F
 Service factor : 1.15
 Temperature rise : 80 K
 Design : B

Locked rotor time : 46s (cold) 26s (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

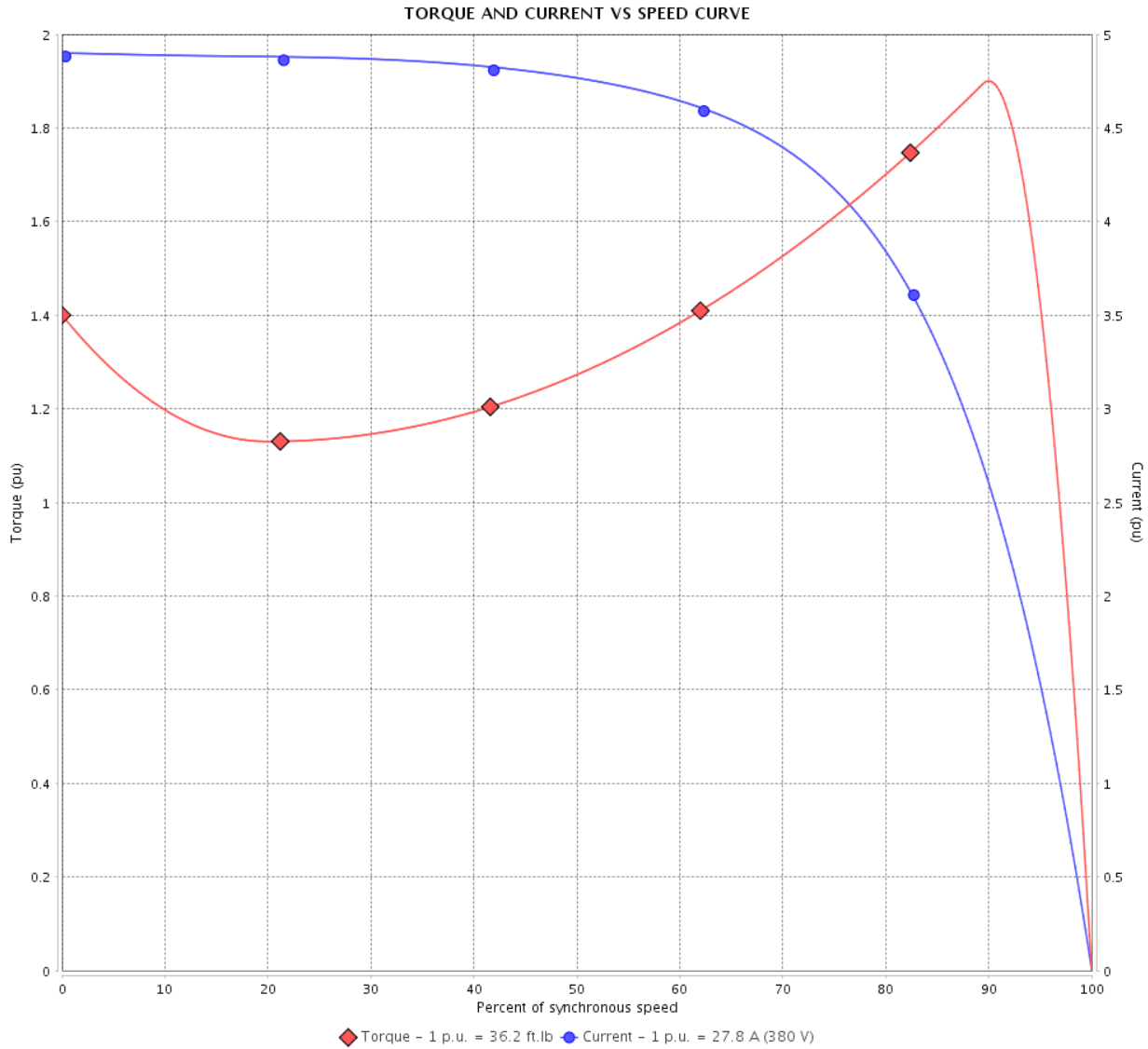


Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14406886

Catalog # : 02036XT3E256T



Performance : 380 V 50 Hz 2P IE2

Rated current	: 27.8 A	Moment of inertia (J)	: 1.45 sq.ft.lb
LRC	: 4.9	Duty cycle	: Cont.(S1)
Rated torque	: 36.2 ft.lb	Insulation class	: F
Locked rotor torque	: 140 %	Service factor	: 1.00
Breakdown torque	: 190 %	Temperature rise	: 80 K
Rated speed	: 2900 rpm	Design	: B

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



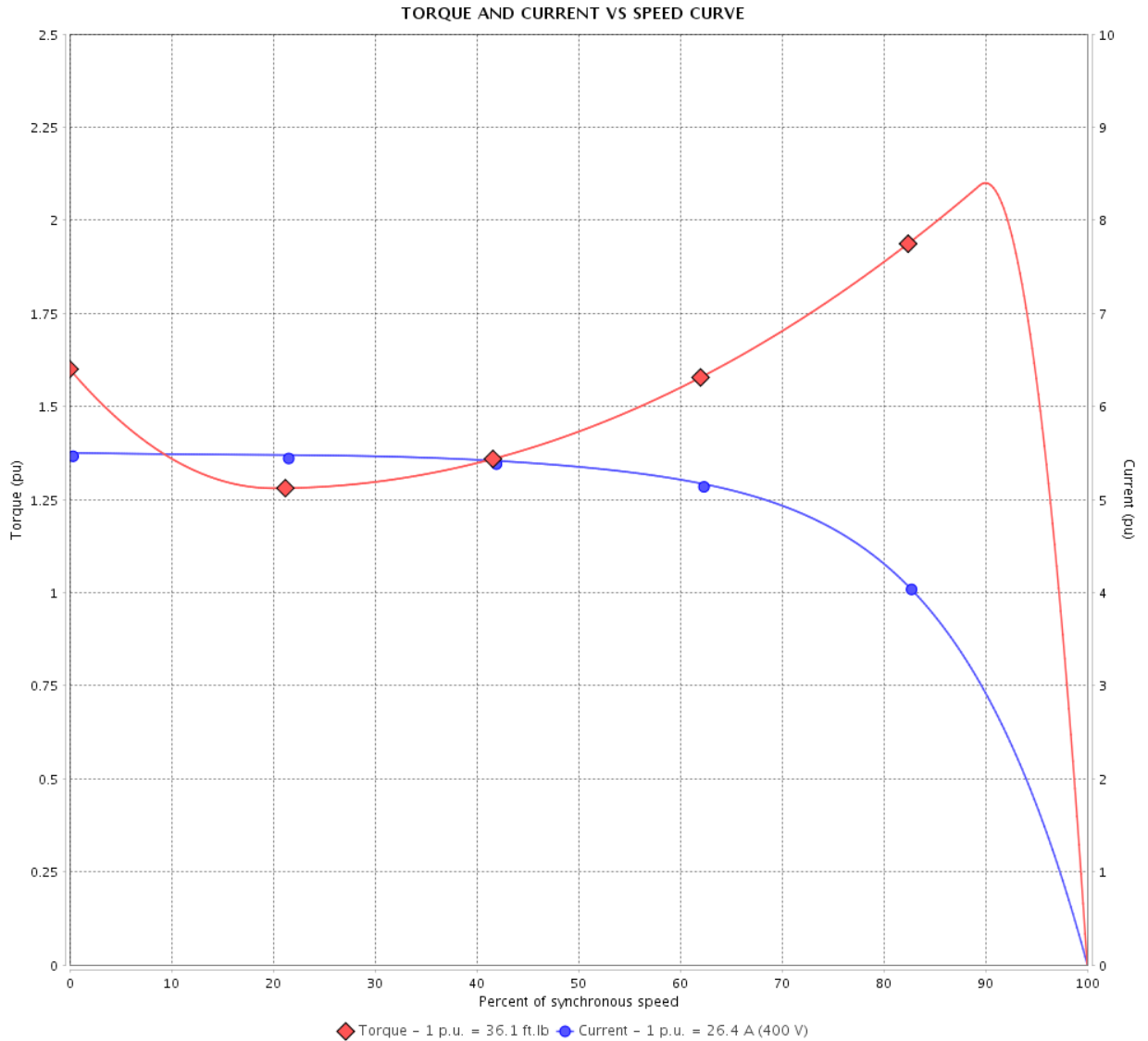
Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14406886

Catalog # : 02036XT3E256T



Performance : 400 V 50 Hz 2P IE2

Rated current	: 26.4 A	Moment of inertia (J)	: 1.45 sq.ft.lb
LRC	: 5.5	Duty cycle	: Cont.(S1)
Rated torque	: 36.1 ft.lb	Insulation class	: F
Locked rotor torque	: 160 %	Service factor	: 1.00
Breakdown torque	: 210 %	Temperature rise	: 80 K
Rated speed	: 2910 rpm	Design	: B

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



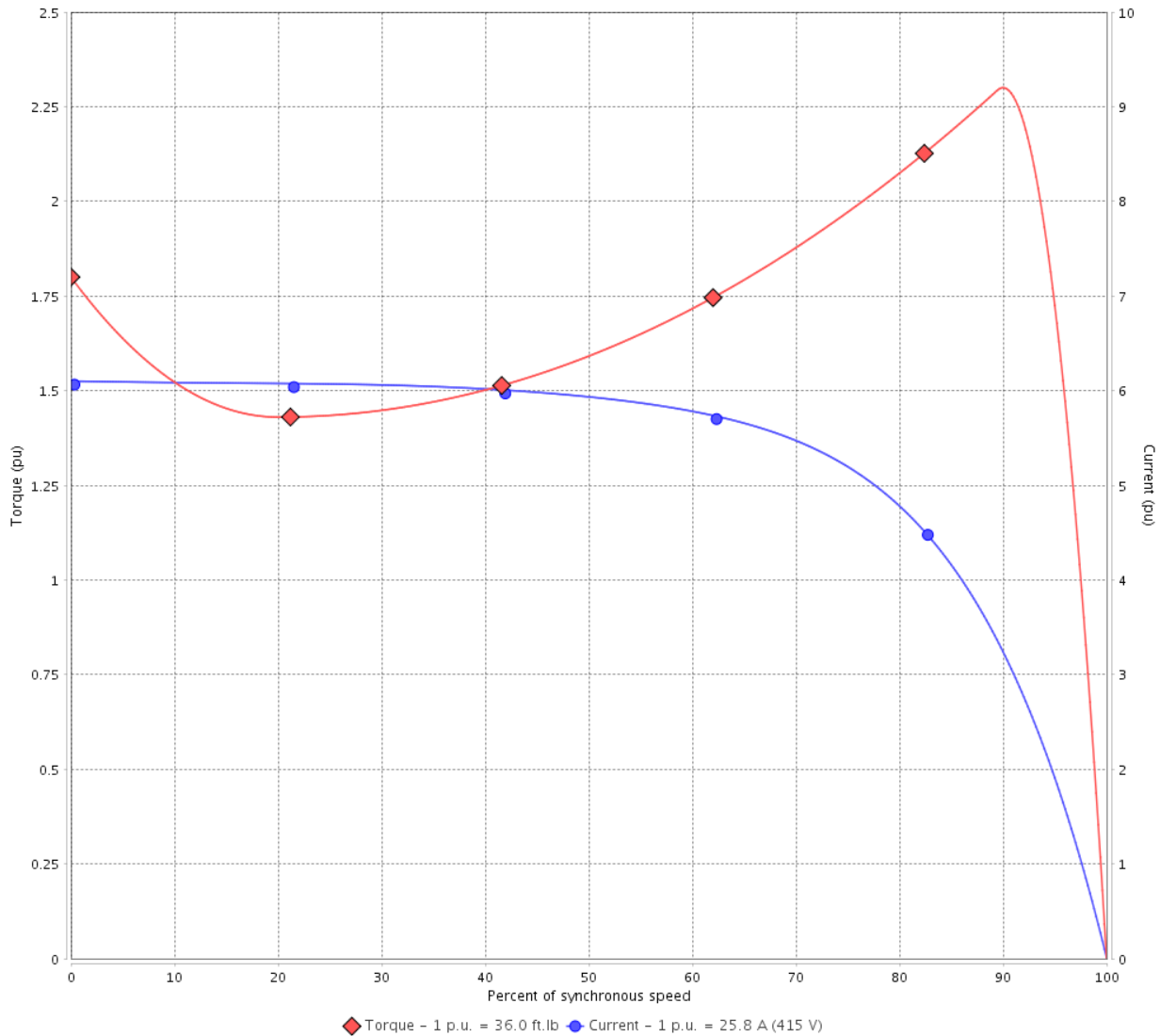
Customer :

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Product code : 14406886

Catalog # : 02036XT3E256T

TORQUE AND CURRENT VS SPEED CURVE



Performance : 415 V 50 Hz 2P IE2

Rated current	: 25.8 A	Moment of inertia (J)	: 1.45 sq.ft.lb
LRC	: 6.1	Duty cycle	: Cont.(S1)
Rated torque	: 36.0 ft.lb	Insulation class	: F
Locked rotor torque	: 180 %	Service factor	: 1.00
Breakdown torque	: 229 %	Temperature rise	: 80 K
Rated speed	: 2920 rpm	Design	: B

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

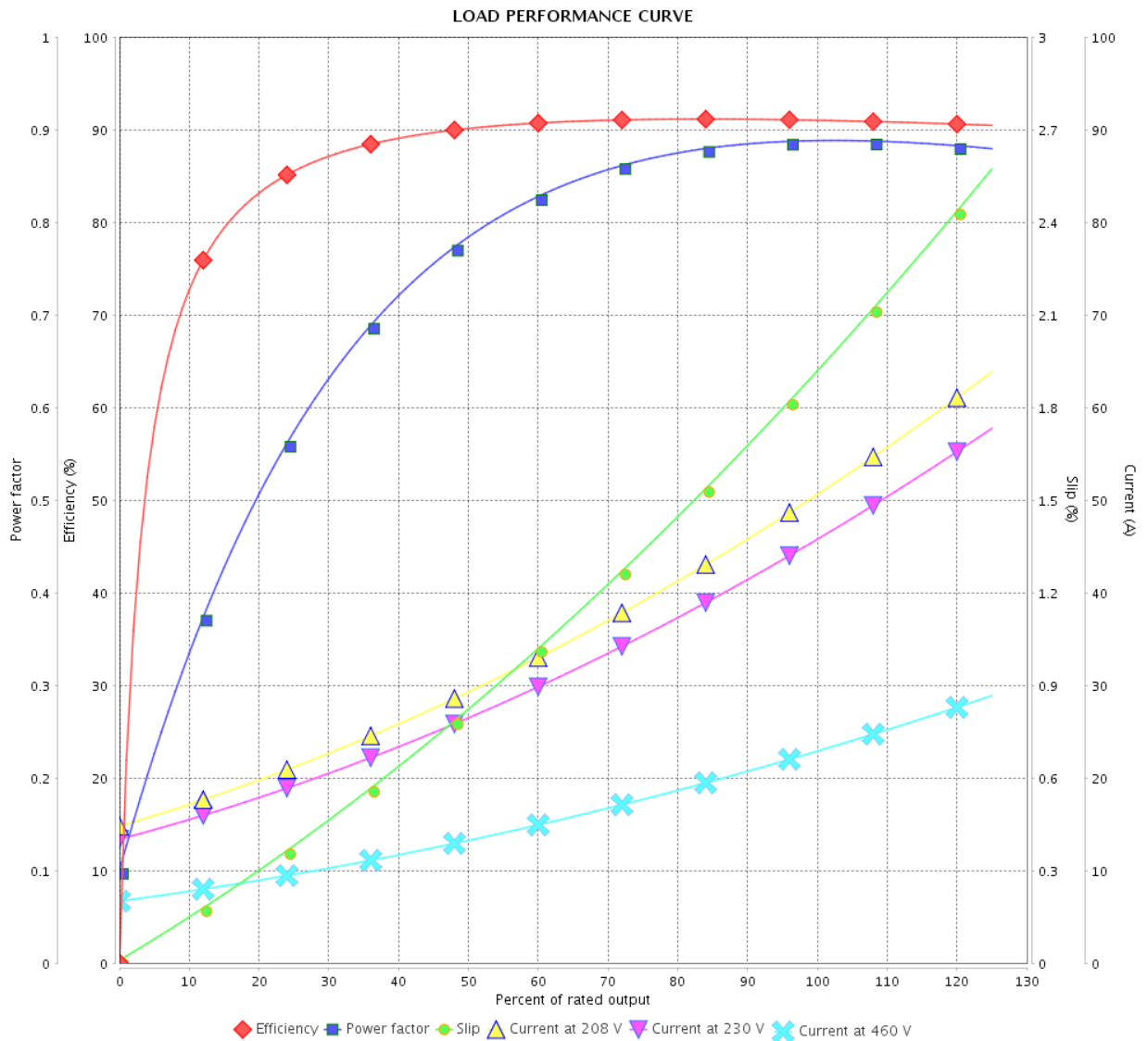


Customer :

Product line : NEMA Premium Efficiency Three-Phase

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Catalog # : 02036XT3E256T



Performance : 230/460 V 60 Hz 2P

Rated current : 46.4/23.2 A
 LRC : 6.2
 Rated torque : 29.8 ft.lb
 Locked rotor torque : 200 %
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 Rated speed : 3530 rpm

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Performed by			Page	Revision
Checked by				
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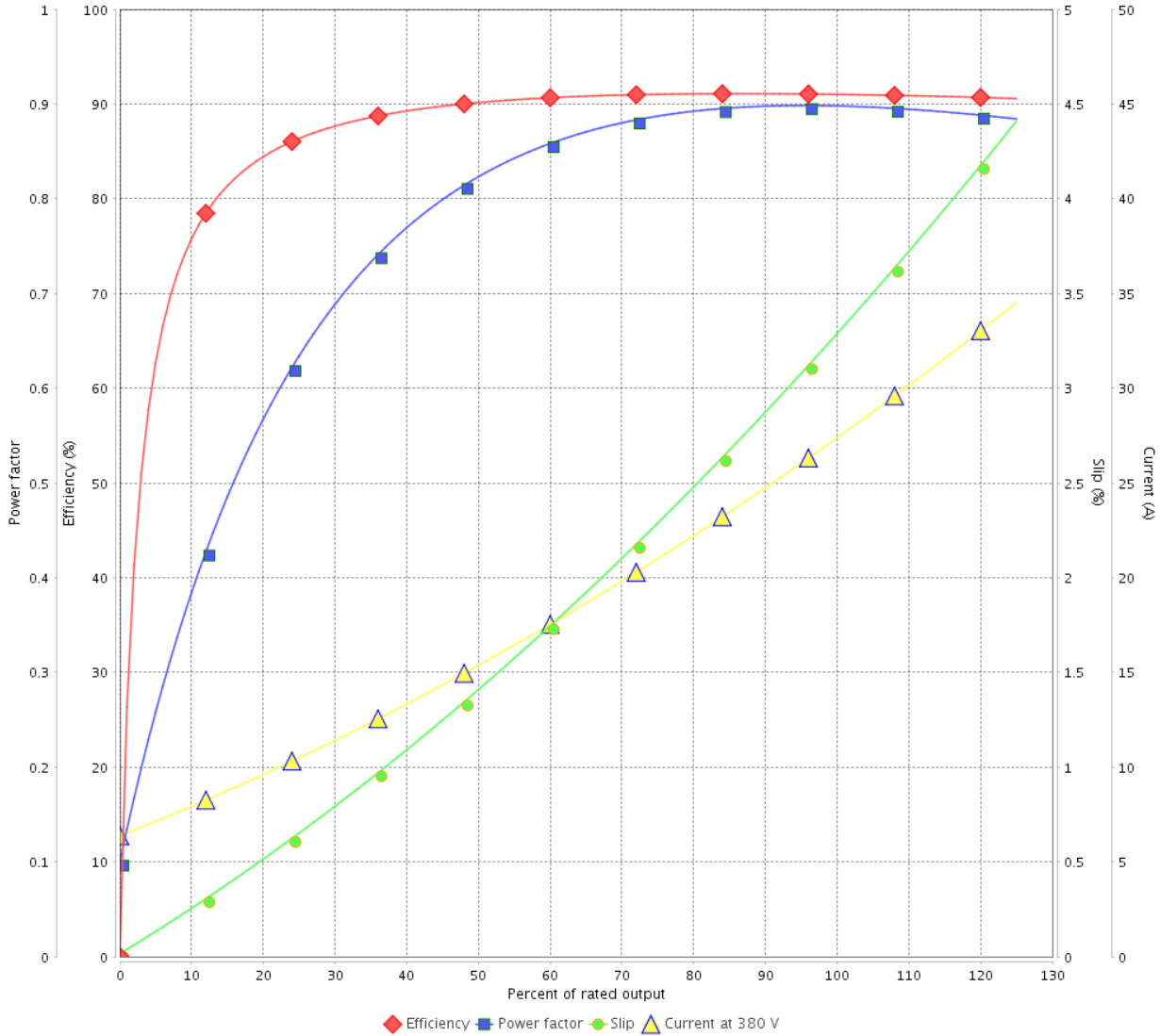
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 Breakdown torque : 190 %
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Moment of inertia (J) : 1.45 sq.ft.lb
 Duty cycle : Cont.(S1)
 Insulation class : F
 Service factor : 1.00
 Temperature rise : 80 K
 Design : B

Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page 8 / 22	Revision
Checked by				
Date	14/04/2022			

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Three Phase Induction Motor - Squirrel Cage

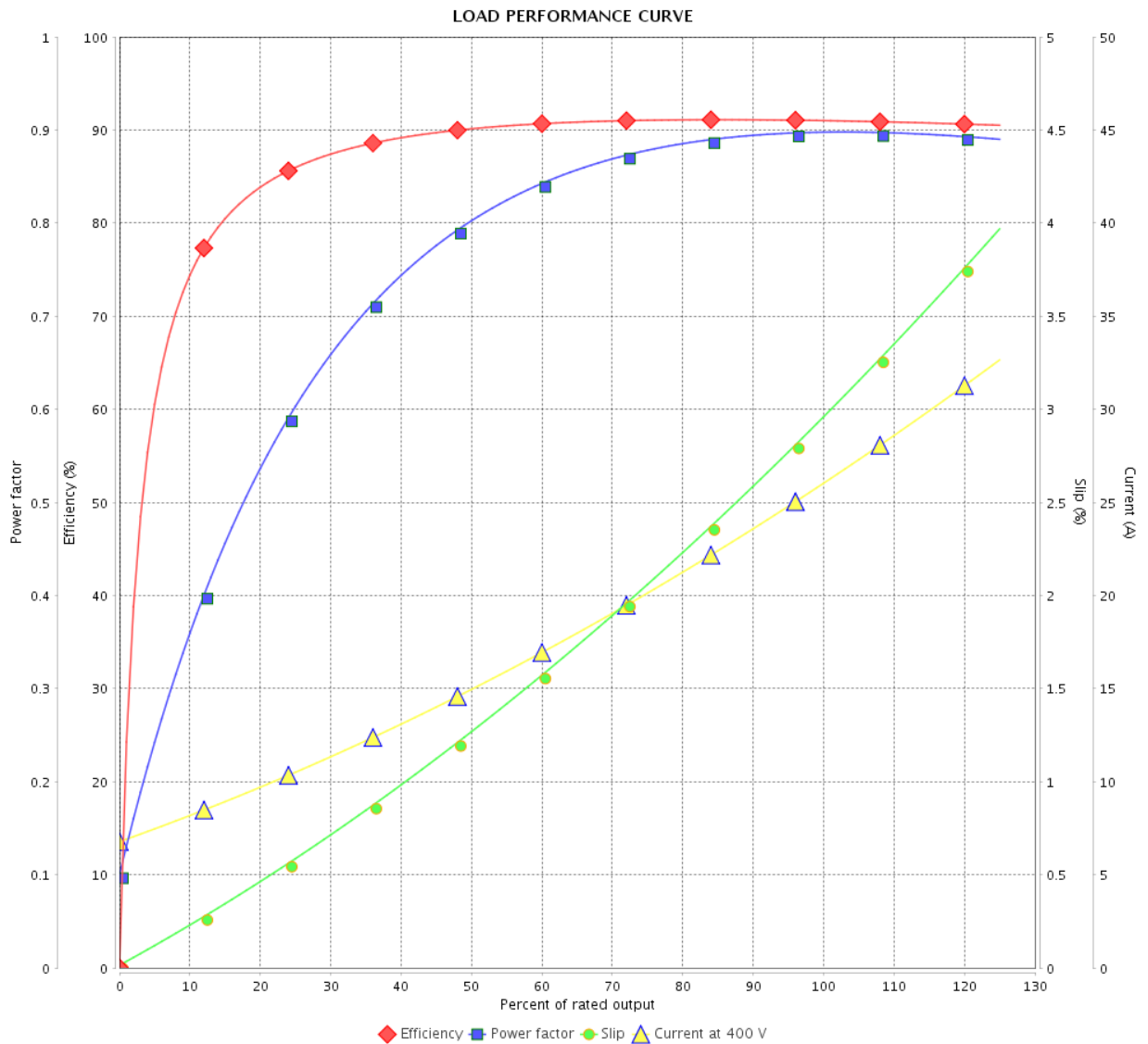


Customer : _____

Product line : NEMA Premium Efficiency Three-Phase

Product code : 14406886

Catalog # : 02036XT3E256T



Performance : 400 V 50 Hz 2P IE2

Rated current : 26.4 A
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 Rated torque : 36.1 ft.lb
 Locked rotor torque : 160 %
 Breakdown torque : 210 %
 Rated speed : 2910 rpm

Moment of inertia (J) : 1.45 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		

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Three Phase Induction Motor - Squirrel Cage



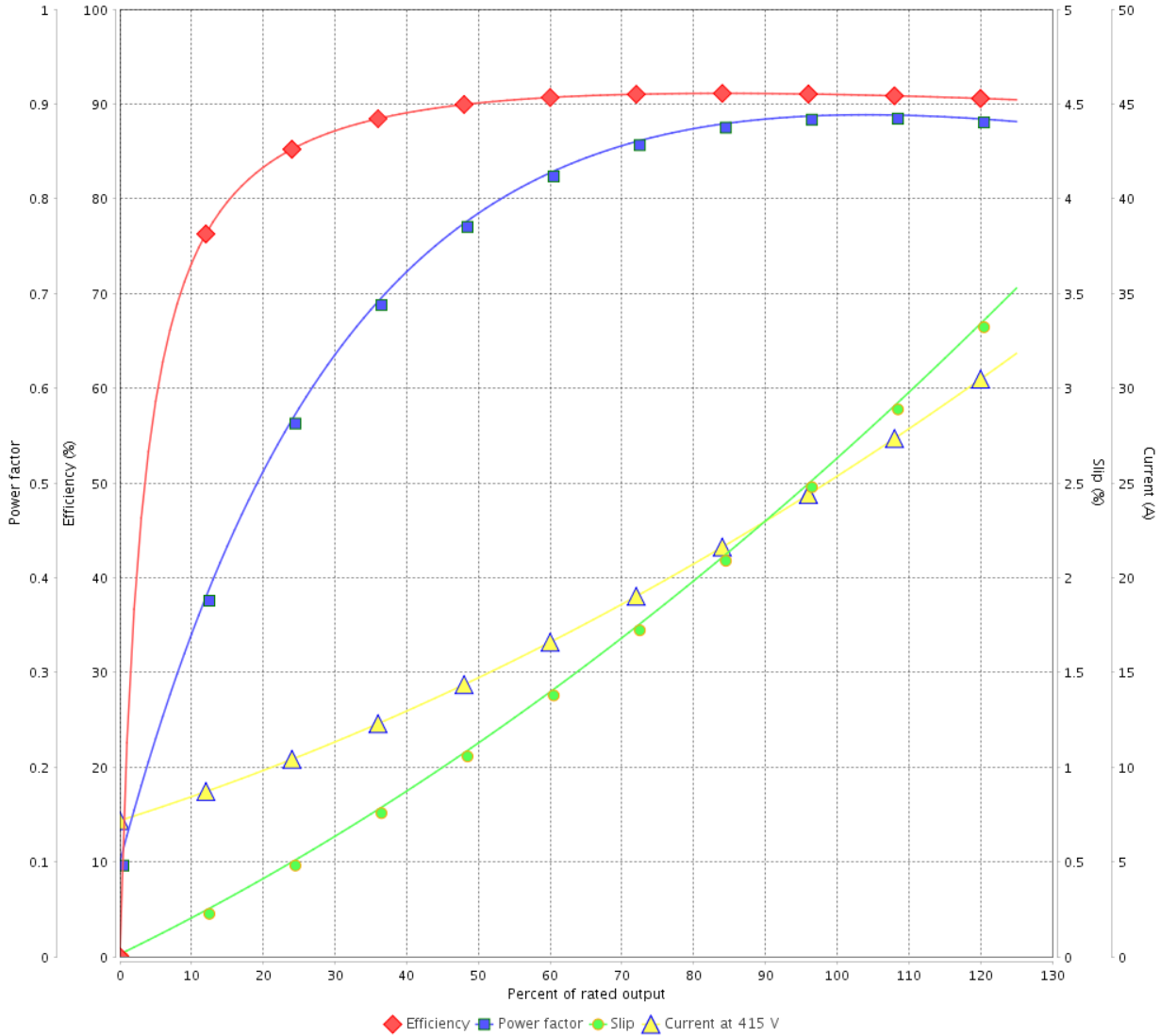
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 Insulation class : F
 Service factor : 1.00
 Temperature rise : 80 K
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Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page 10 / 22	Revision
Checked by				
Date	14/04/2022			

THERMAL LIMIT CURVE



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Locked rotor torque : 200 %	Service factor : 1.15
Breakdown torque : 250 %	Temperature rise : 80 K
Rated speed : 3530 rpm	Design : B

Heating constant

Cooling constant

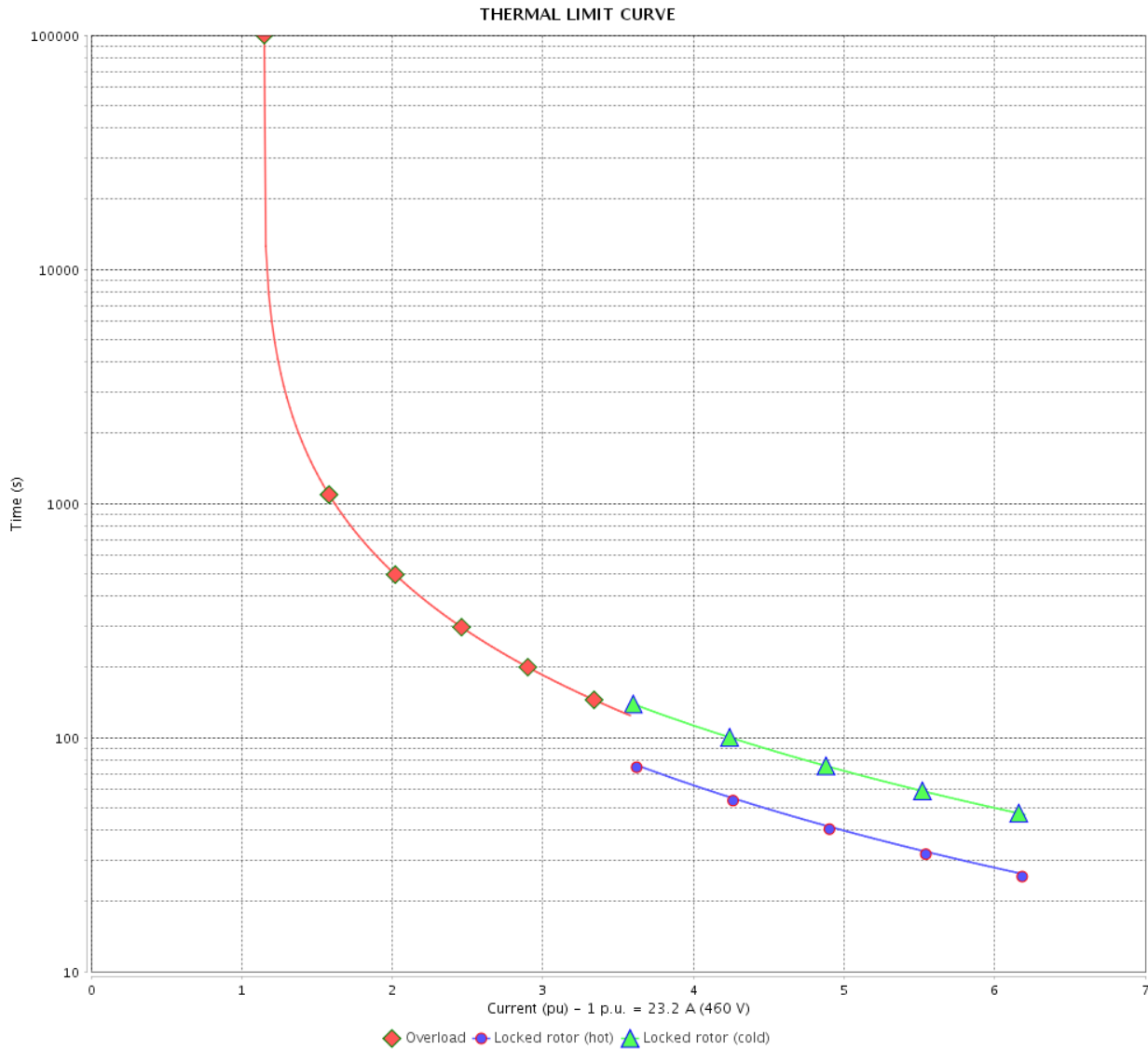
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Performed by			Page 11 / 22	Revision
Checked by				
Date	14/04/2022			

THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



Customer : _____



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

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Heating constant

Cooling constant

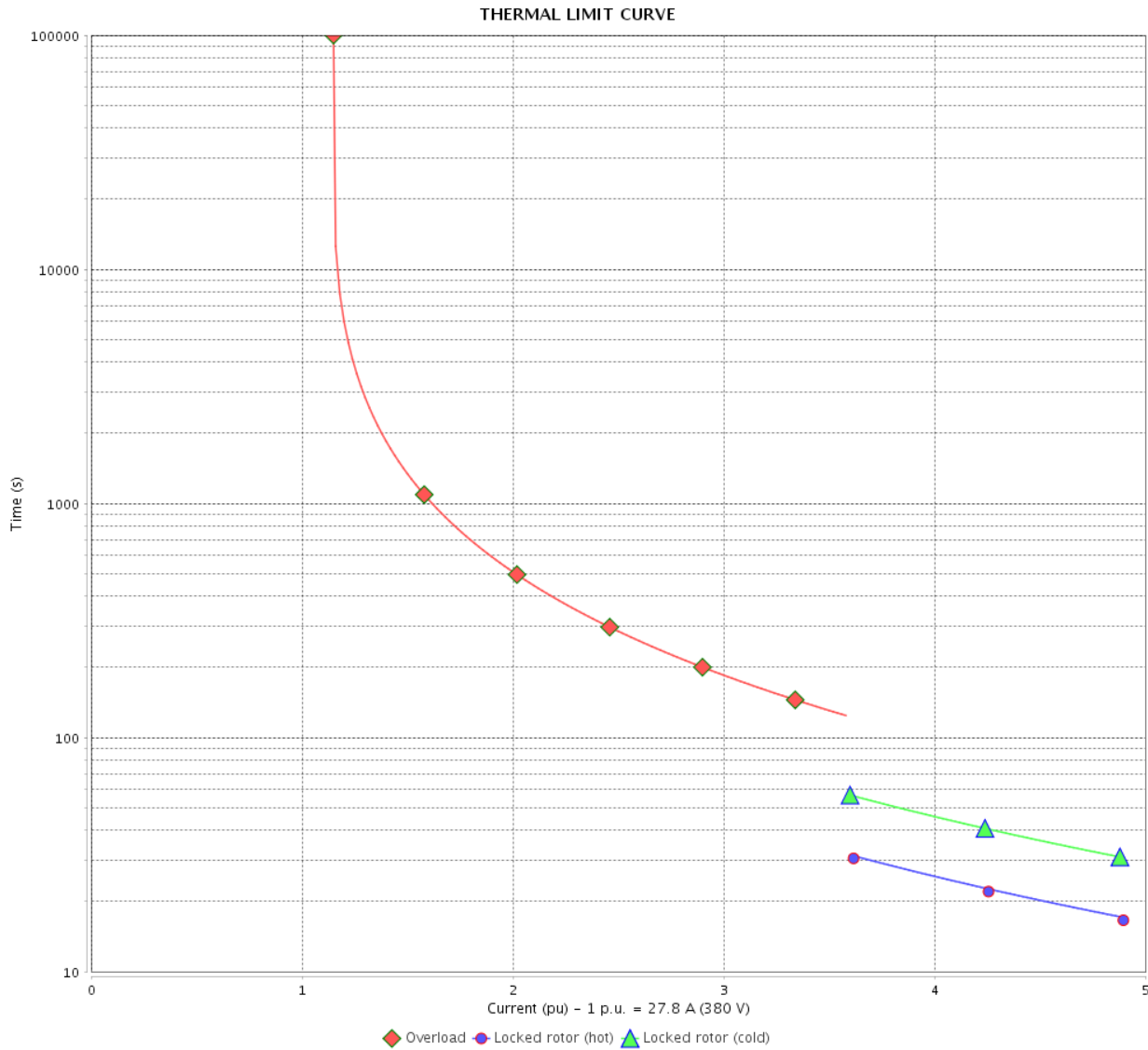
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Performed by			Page	Revision
Checked by				
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THERMAL LIMIT CURVE

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

THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



Customer :

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Product code : 14406886
Catalog # : 02036XT3E256T

Performance : 400 V 50 Hz 2P IE2

Rated current : 26.4 A	Moment of inertia (J) : 1.45 sq.ft.lb
LRC : 5.5	Duty cycle : Cont.(S1)
Rated torque : 36.1 ft.lb	Insulation class : F
Locked rotor torque : 160 %	Service factor : 1.00
Breakdown torque : 210 %	Temperature rise : 80 K
Rated speed : 2910 rpm	Design : B

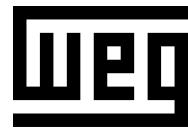
Heating constant

Cooling constant

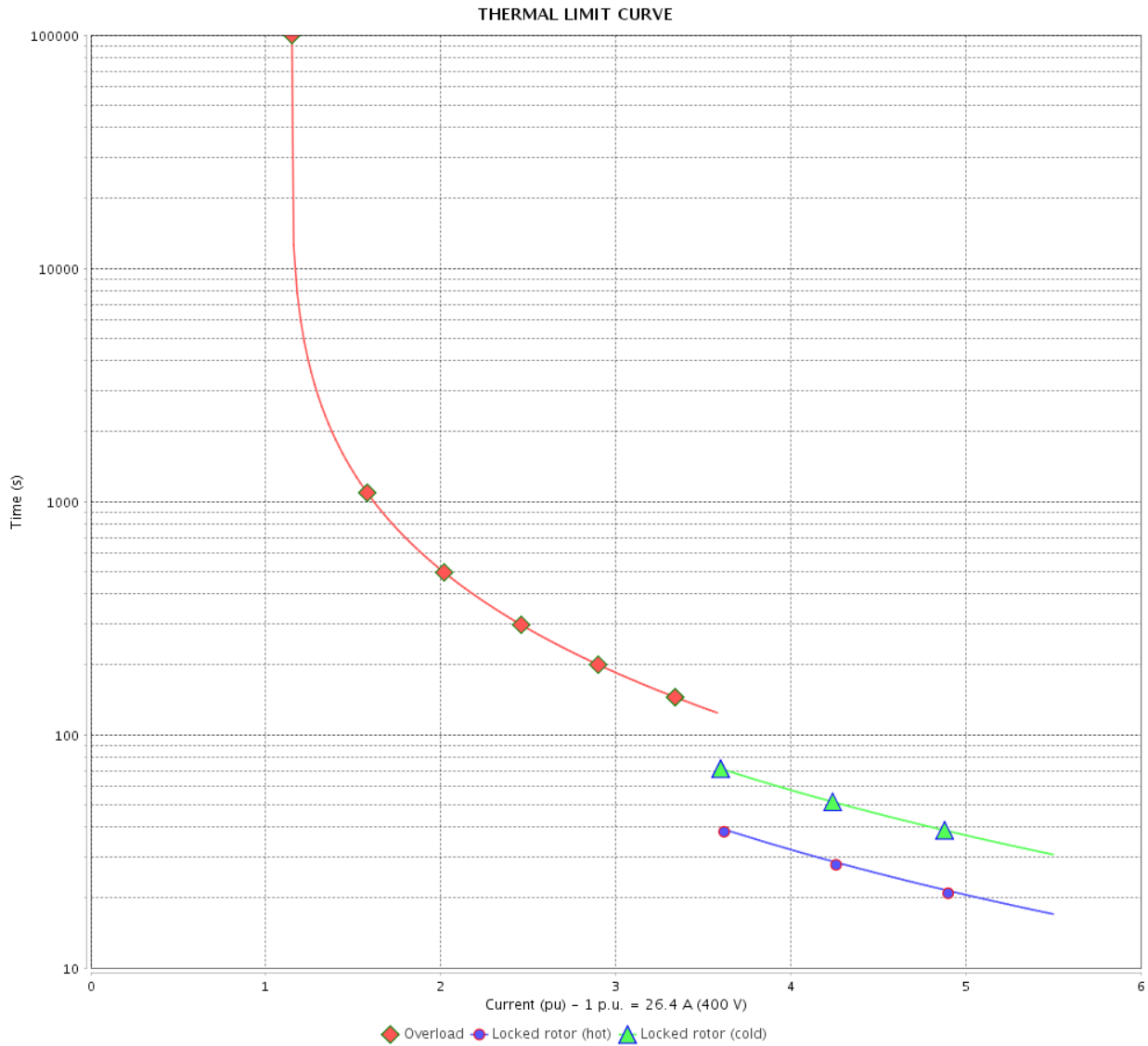
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THERMAL LIMIT CURVE

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



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Locked rotor torque : 180 %	Service factor : 1.00
Breakdown torque : 229 %	Temperature rise : 80 K
Rated speed : 2920 rpm	Design : B

Heating constant

Cooling constant

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

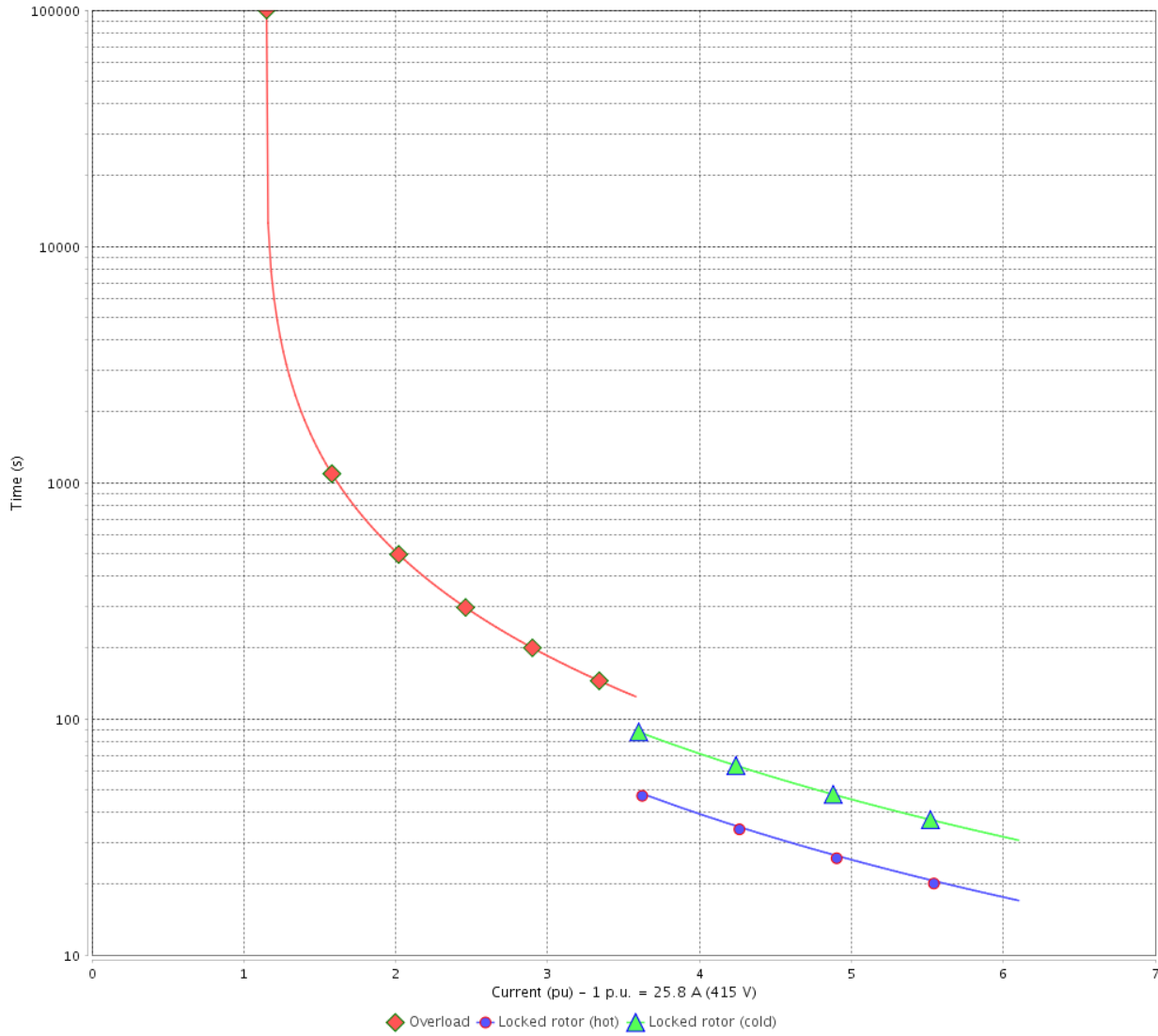
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Customer : _____

THERMAL LIMIT CURVE



Rev.	Changes Summary	Performed	Checked	Date
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Checked by		18 / 22		
Date	14/04/2022			

VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

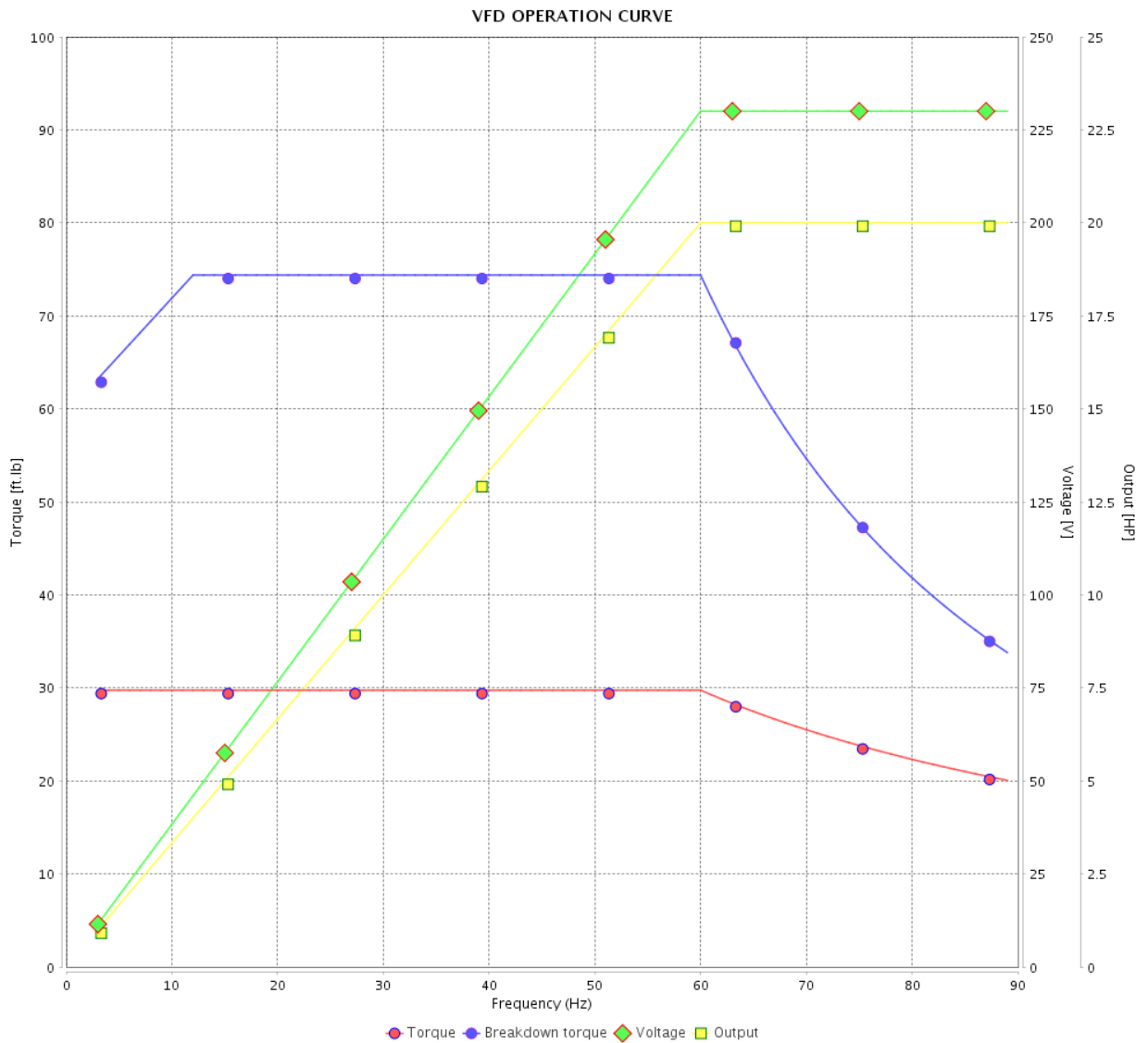


Customer : _____

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Product code : 14406886

Catalog # : 02036XT3E256T



Performance : 230/460 V 60 Hz 2P

Rated current : 46.4/23.2 A
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 Locked rotor torque : 200 %
 Breakdown torque : 250 %
 Rated speed : 3530 rpm

Moment of inertia (J) : 1.45 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		19 / 22		
Date	14/04/2022			

VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage



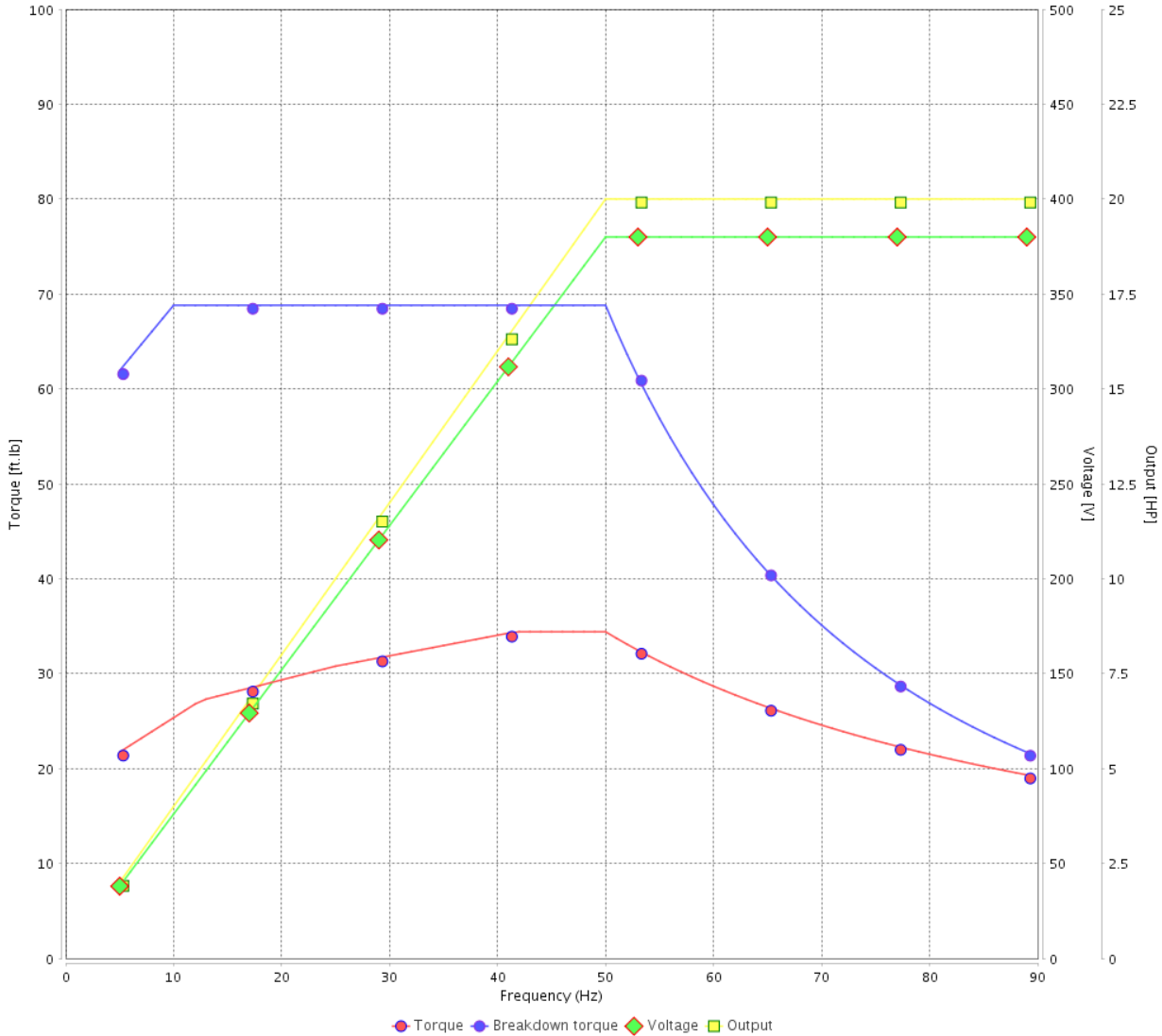
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VFD OPERATION CURVE



Performance : 380 V 50 Hz 2P IE2

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Moment of inertia (J) : 1.45 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 20 / 22	Revision
Checked by				
Date	14/04/2022			

VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

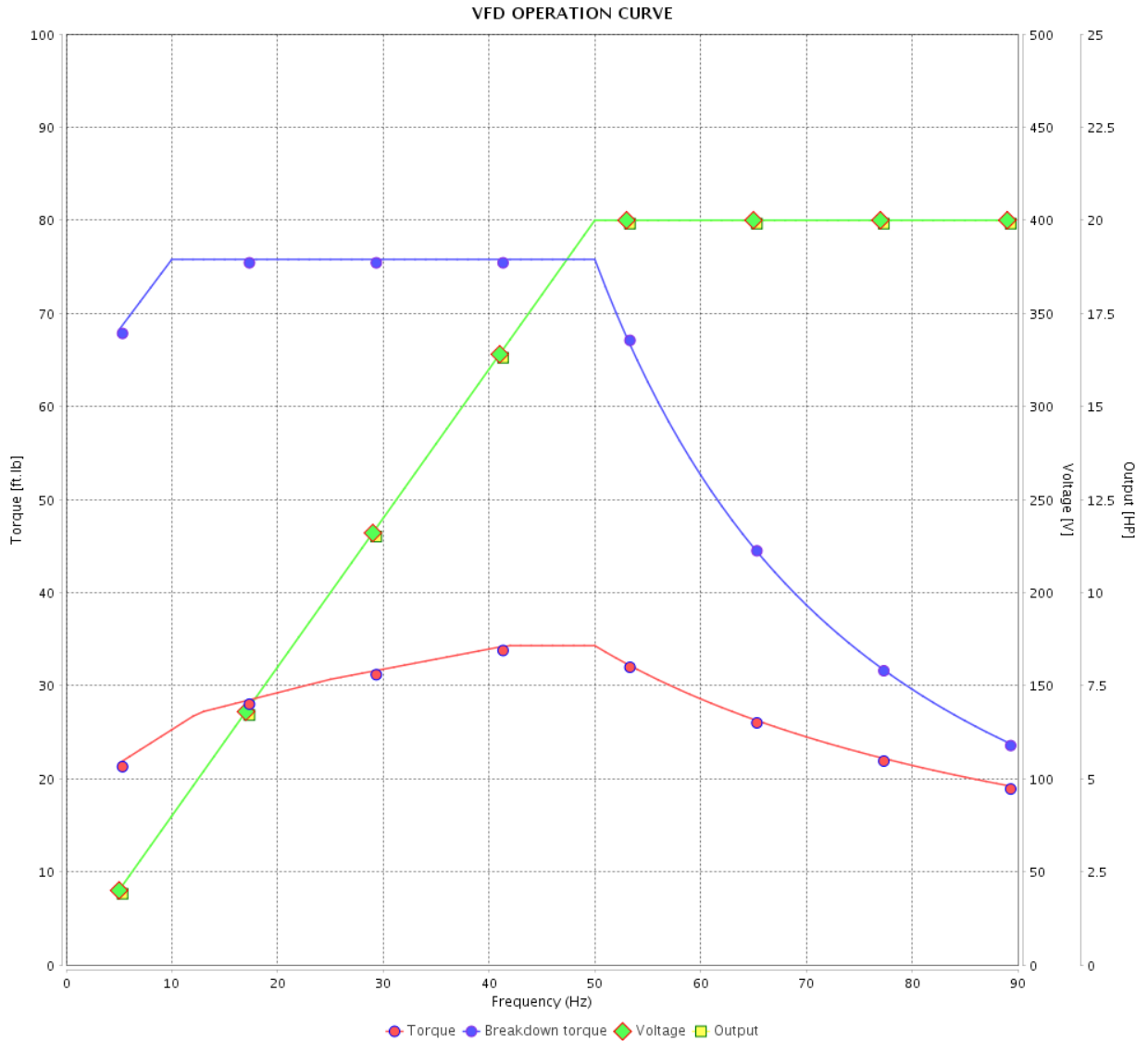


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Performed by		Page		Revision
Checked by		21 / 22		
Date	14/04/2022			

VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

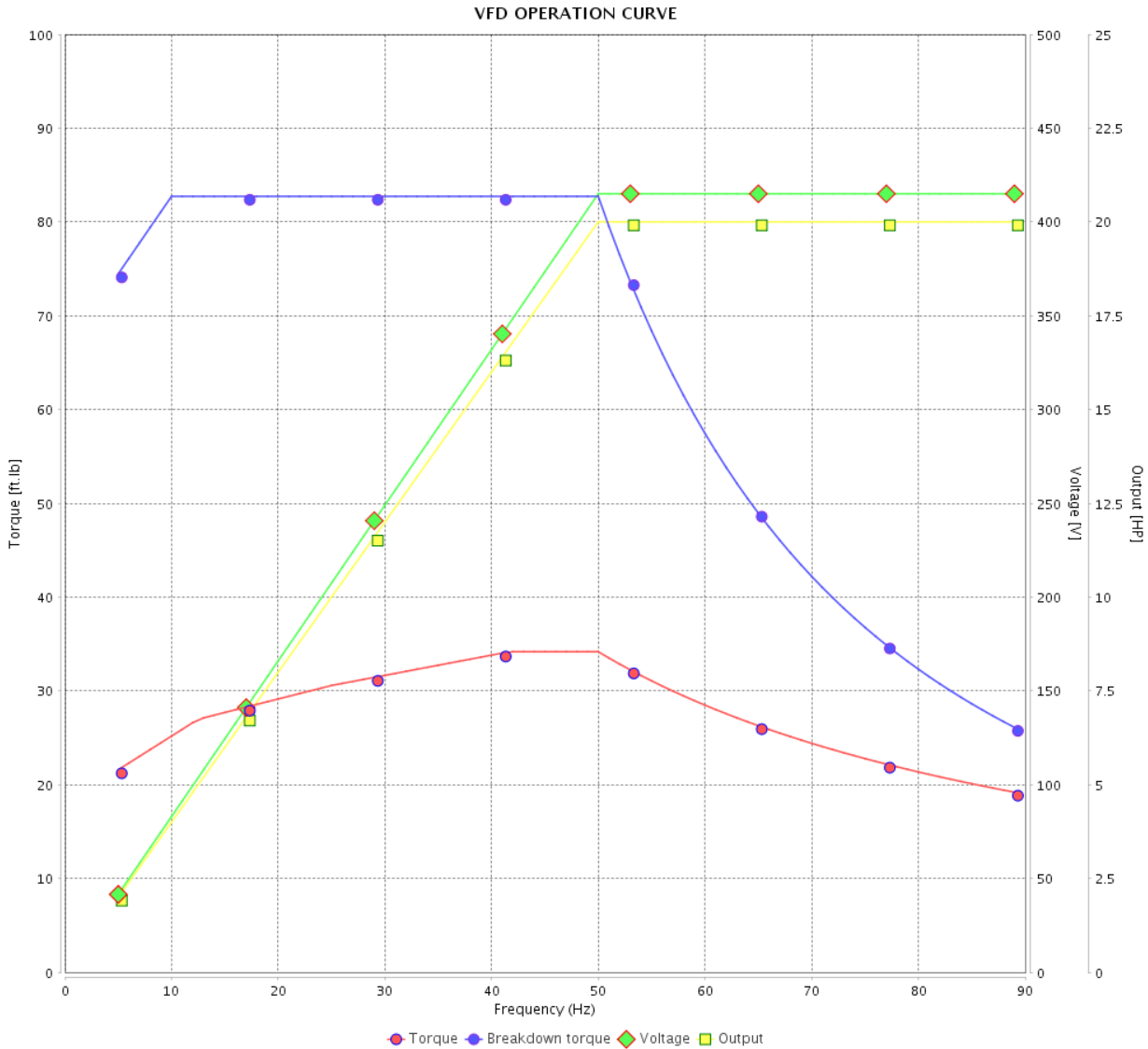


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 Rated speed : 2920 rpm

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

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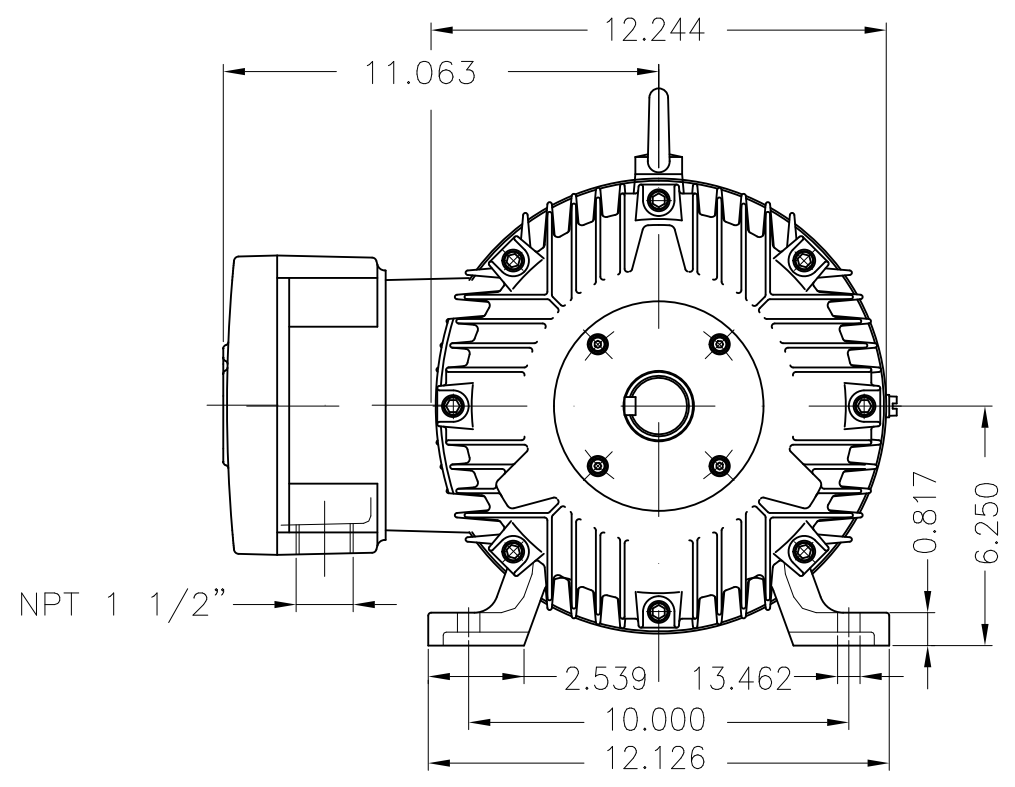
A

B

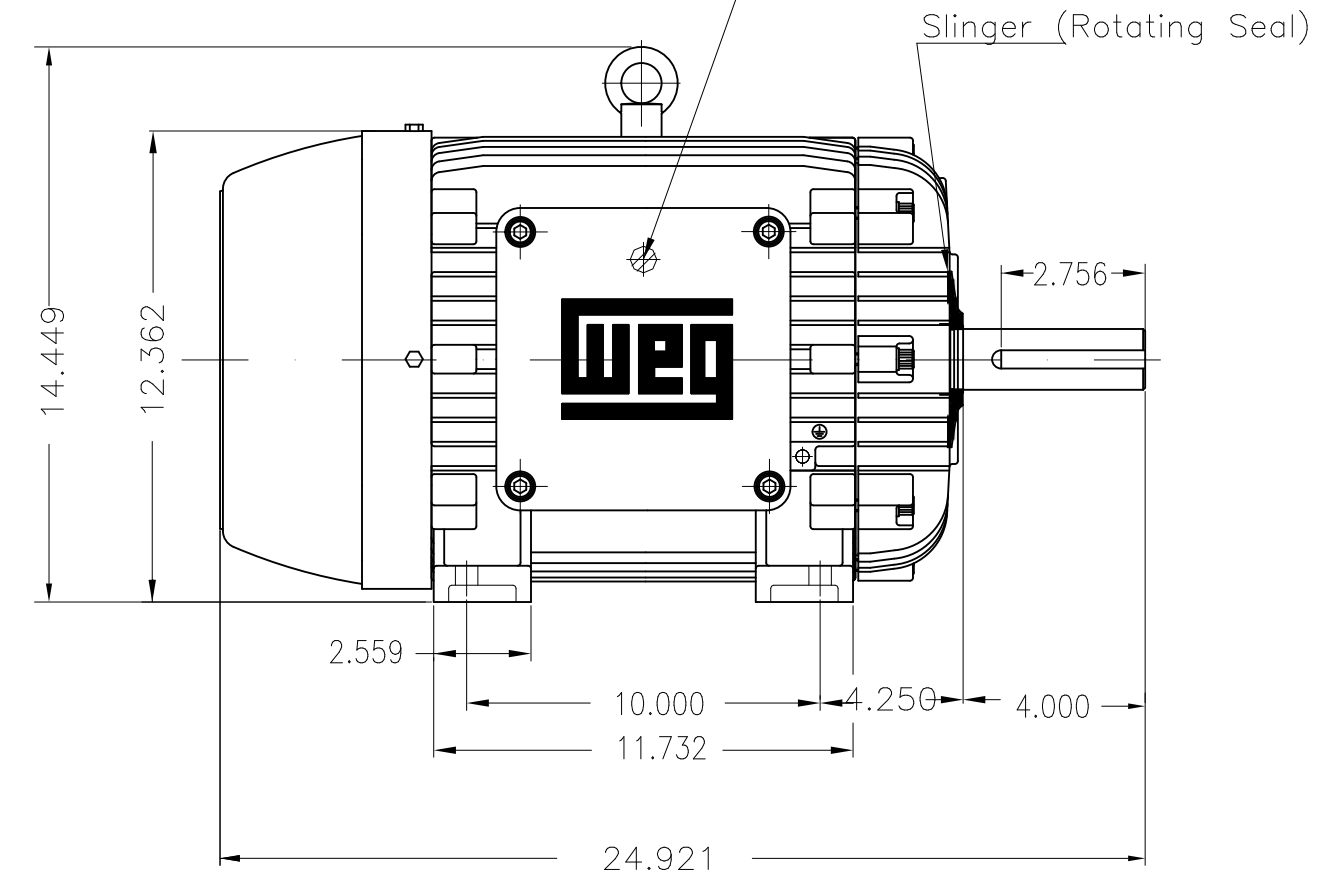
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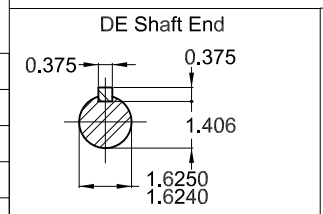


Grounding for leads 5.2–25 mm² / 10–4 AWG



20 HP 02 Poles 60 Hz A

- With grease fitting
- Color RAL 5009
- Painting plan 202P
- Mounting NEMA F-1
- Mounting B3R(D)



ECM	LOC	SUMMARY OF MODIFICATIONS	EXECUTED	CHECKED	RELEASED	DATE	VER
EXECUTED	PIRWBUSER	THREE PH. MOTOR EXPLOSION PROOF PREM. EFF.					
CHECKED		FRAME 256T IP55 TEFC					
RELEASED							
REL DT.	WMO	Jaragua do Sul	Product Engineering				

PREVIEW
WDD

SHEET 1 / 1

Dimensions in inches XME A3

MADE IN BRAZIL


W21X NEMA
Premium

14406886



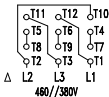
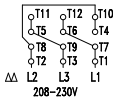
LISTED

CC029A

Inverter Duty Motor
Severe Duty

MODEL 02036XT3E256T

PH 3	FR 256T		
HP(kW) 20.0(15.0)		HZ 60	IP55
V 230/460		A 46.4/23.2	
RPM 3530		NEMA NOM EFF 91.0%	
PF 0.89		SFA 53.4/26.7	DES B
INS CL F Δ T 80 K		SF 1.15	ENCL TEFC
DUTY CONT.		CODE G	ALT 1000 m.a.s.l.
AMB 40°C	USABLE @208V	50.6 A	SF 1.10 SFA 55.7
AMB 55°C SF1.0 -bearings lub interval reduced by a factor of 50%			
20HP 15kW 50Hz 380V 27.8A 2900RPM SF1.00 EFF 91.0% (IE2)			



→ 6309-C3 MOBIL POLYREX EM
 → 6209-C3 13 g 15797 h

359 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.