

DATA SHEET



Three Phase Induction Motor - Squirrel Cage

Customer	:		
Product line	: NEMA Premium Efficiency Three-Phase	Product code :	13163468
		Catalog # :	02036ET3E256TC-SG
Frame	: 254/6TC	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	: 211 lb
Protection degree	: IP55	Moment of inertia (J)	: 1.22 sq.ft.lb
Design	: B		
Output [HP]	20	15	15
Poles	2	2	2
Frequency [Hz]	60	50	50
Rated voltage [V]	230/460	190/380	220/415
Rated current [A]	45.4/22.7	40.8/20.4	36.8/19.5
L. R. Amperes [A]	300/150	302/151	298/158
LRC [A]	6.6x(Code G)	7.4x(Code H)	8.1x(Code J)
No load current [A]	13.8/6.88	13.6/6.79	13.7/7.26
Rated speed [RPM]	3515	2925	2935
Slip [%]	2.36	2.50	2.17
Rated torque [ft.lb]	29.9	26.9	26.8
Locked rotor torque [%]	200	210	240
Breakdown torque [%]	290	310	340
Service factor	1.15	1.00	1.00
Temperature rise	80 K	105 K	80 K
Locked rotor time	21s (cold) 12s (hot)	0s (cold) 0s (hot)	0s (cold) 0s (hot)
Noise level ²	75.0 dB(A)	72.0 dB(A)	72.0 dB(A)
Efficiency (%)	25%	89.7	91.8
	50%	90.0	91.5
	75%	91.0	92.0
	100%	91.0	91.4
Power Factor	25%	0.55	0.48
	50%	0.81	0.75
	75%	0.88	0.85
	100%	0.91	0.89
Bearing type	: <u>Drive end</u> 6309 Z C3 <u>Non drive end</u> 6208 Z C3	Foundation loads	
Sealing	: V'Ring Without Bearing Seal	Max. traction	: 332 lb
Lubrication interval	: 15797 h 20000 h	Max. compression	: 543 lb
Lubricant amount	: 13 g 8 g		
Lubricant type	: Mobil Polyrex EM		
Notes USABLE @208V 50.2A SF 1.00 SFA 50.2A			
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.	
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TORQUE AND CURRENT VS SPEED CURVE

Three Phase Induction Motor - Squirrel Cage



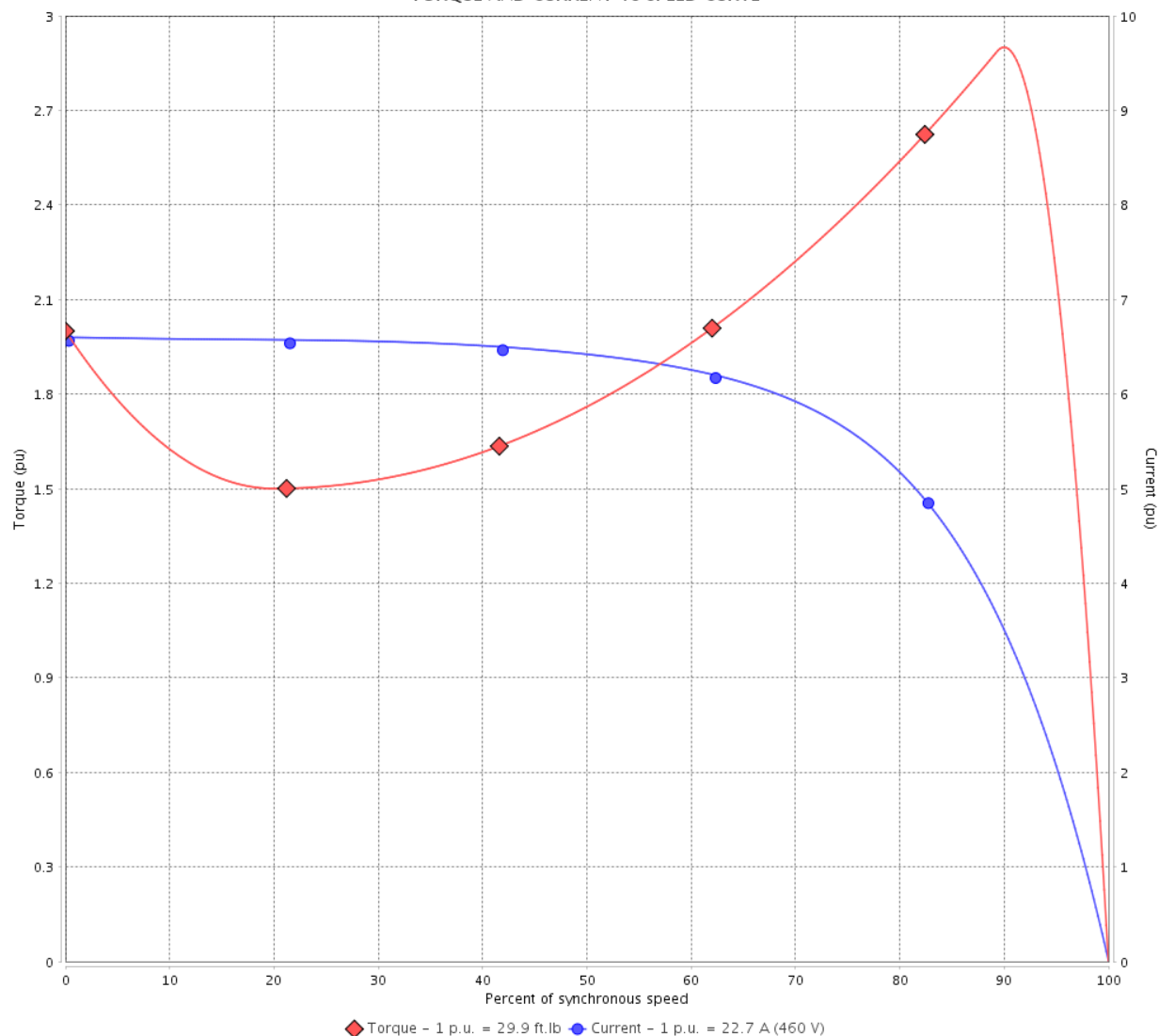
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 13163468

Catalog # : 02036ET3E256TC-SG

TORQUE AND CURRENT VS SPEED CURVE



Performance : 230/460 V 60 Hz 2P

Rated current	: 45.4/22.7 A	Moment of inertia (J)	: 1.22 sq.ft.lb
LRC	: 6.6	Duty cycle	: Cont.(S1)
Rated torque	: 29.9 ft.lb	Insulation class	: F
Locked rotor torque	: 200 %	Service factor	: 1.15
Breakdown torque	: 290 %	Temperature rise	: 80 K
Rated speed	: 3515 rpm	Design	: B

Locked rotor time : 21s (cold) 12s (hot)

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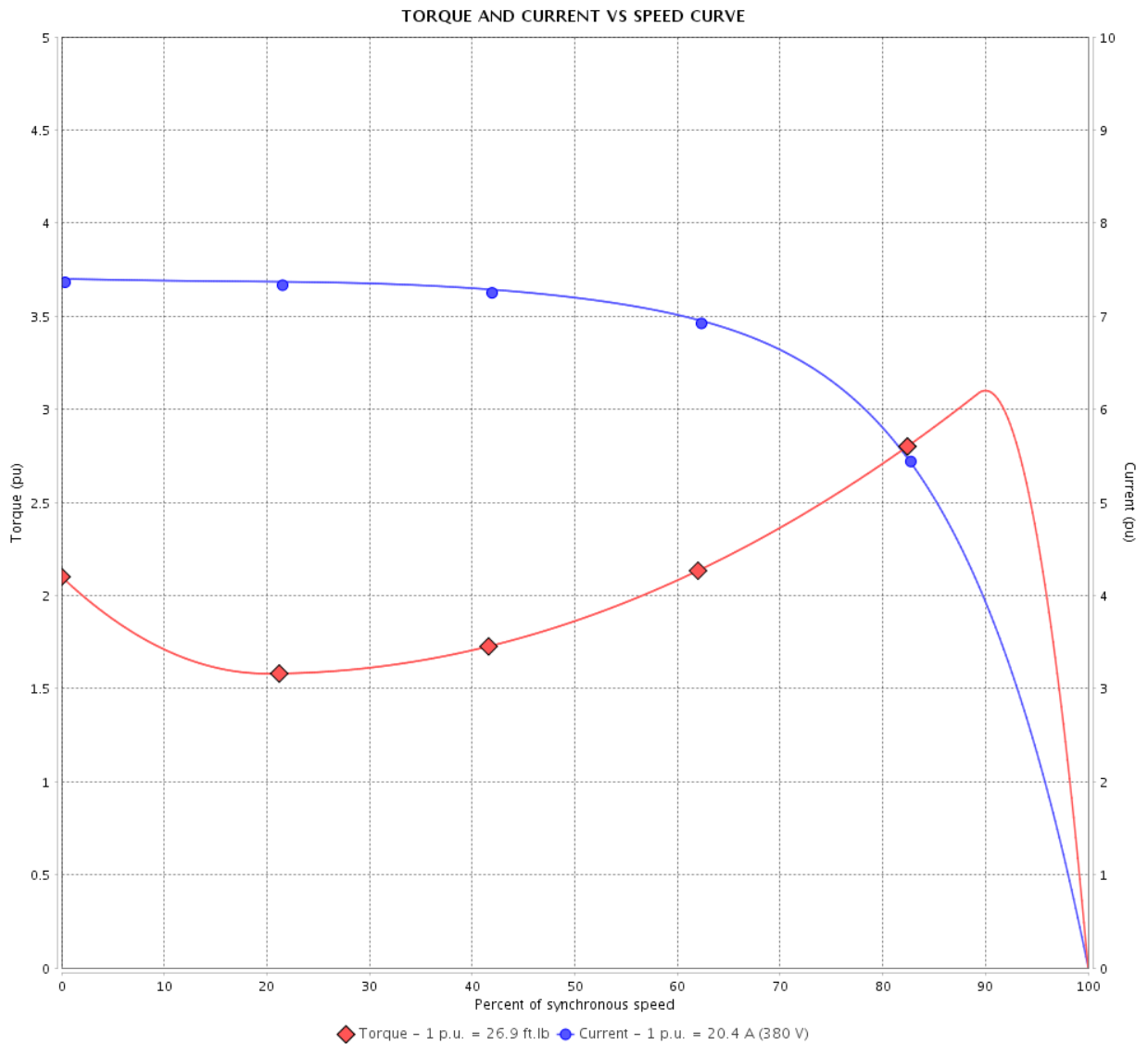
TORQUE AND CURRENT VS SPEED CURVE



Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : NEMA Premium Efficiency Three-Phase
 Product code : 13163468
 Catalog # : 02036ET3E256TC-SG



Performance : 190/380 V 50 Hz 2P

Rated current	: 40.8/20.4 A	Moment of inertia (J)	: 1.22 sq.ft.lb
LRC	: 7.4	Duty cycle	: Cont.(S1)
Rated torque	: 26.9 ft.lb	Insulation class	: F
Locked rotor torque	: 210 %	Service factor	: 1.00
Breakdown torque	: 310 %	Temperature rise	: 105 K
Rated speed	: 2925 rpm	Design	: B

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

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TORQUE AND CURRENT VS SPEED CURVE

Three Phase Induction Motor - Squirrel Cage



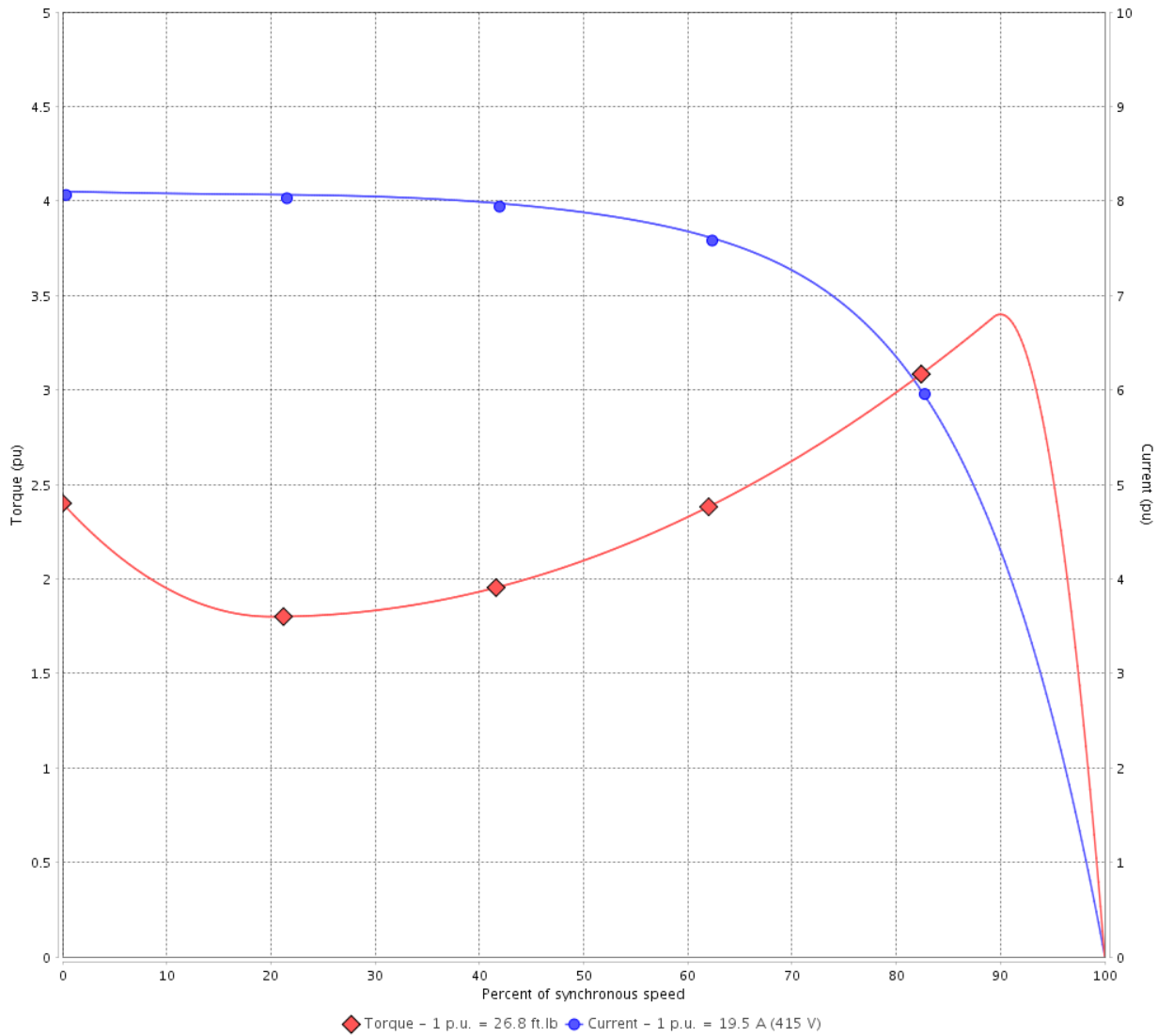
Customer :

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Product code : 13163468

Catalog # : 02036ET3E256TC-SG

TORQUE AND CURRENT VS SPEED CURVE



Performance : 220/415 V 50 Hz 2P

Rated current	: 36.8/19.5 A	Moment of inertia (J)	: 1.22 sq.ft.lb
LRC	: 8.1	Duty cycle	: Cont.(S1)
Rated torque	: 26.8 ft.lb	Insulation class	: F
Locked rotor torque	: 240 %	Service factor	: 1.00
Breakdown torque	: 340 %	Temperature rise	: 80 K
Rated speed	: 2935 rpm	Design	: B

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

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LOAD PERFORMANCE CURVE

Three Phase Induction Motor - Squirrel Cage

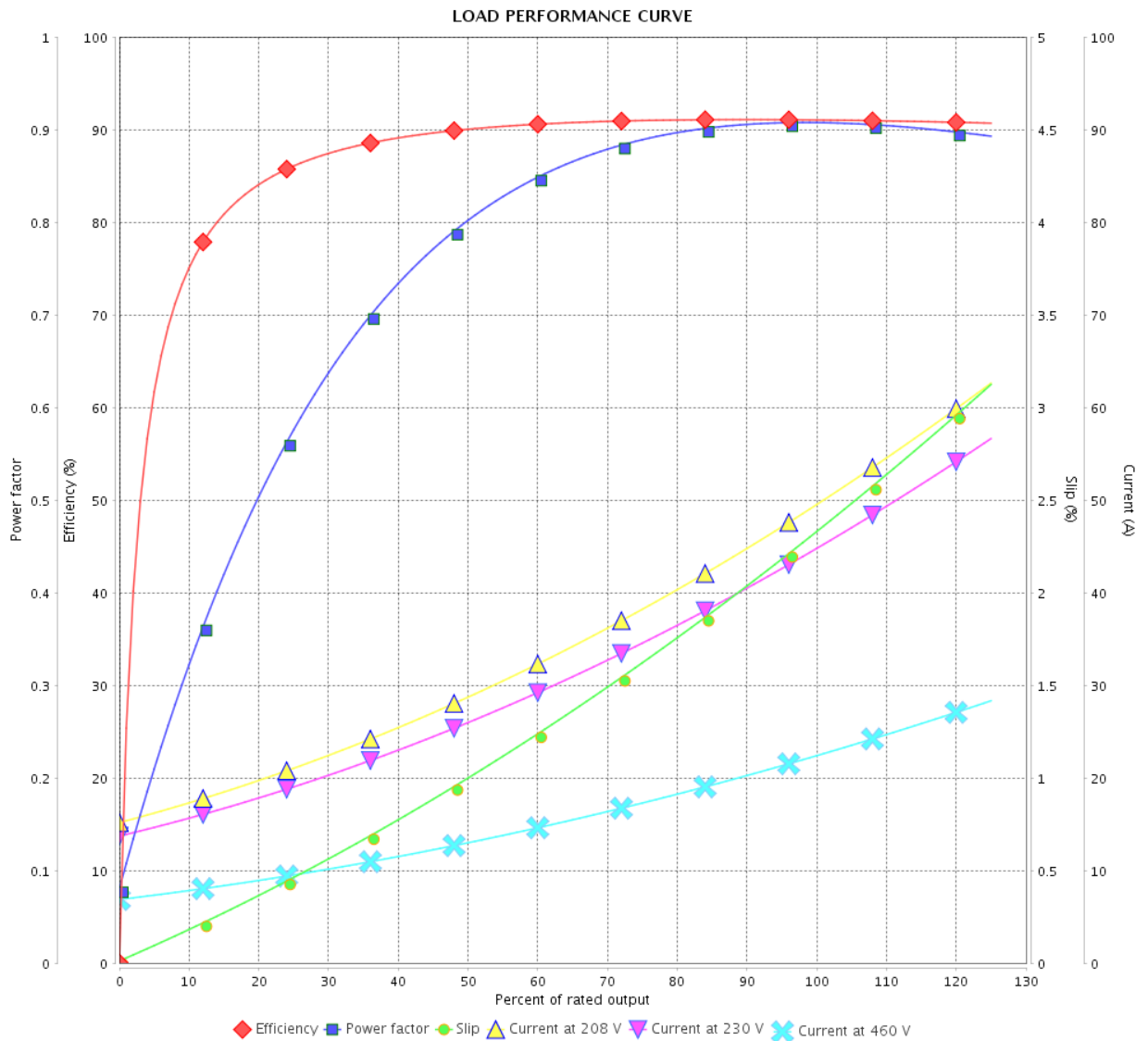


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Performance : 230/460 V 60 Hz 2P

Rated current : 45.4/22.7 A
 LRC : 6.6
 Rated torque : 29.9 ft.lb
 Locked rotor torque : 200 %
 Breakdown torque : 290 %
 Rated speed : 3515 rpm

Moment of inertia (J) : 1.22 sq.ft.lb
 Duty cycle : Cont.(S1)
 Insulation class : F
 Service factor : 1.15
 Temperature rise : 80 K
 Design : B

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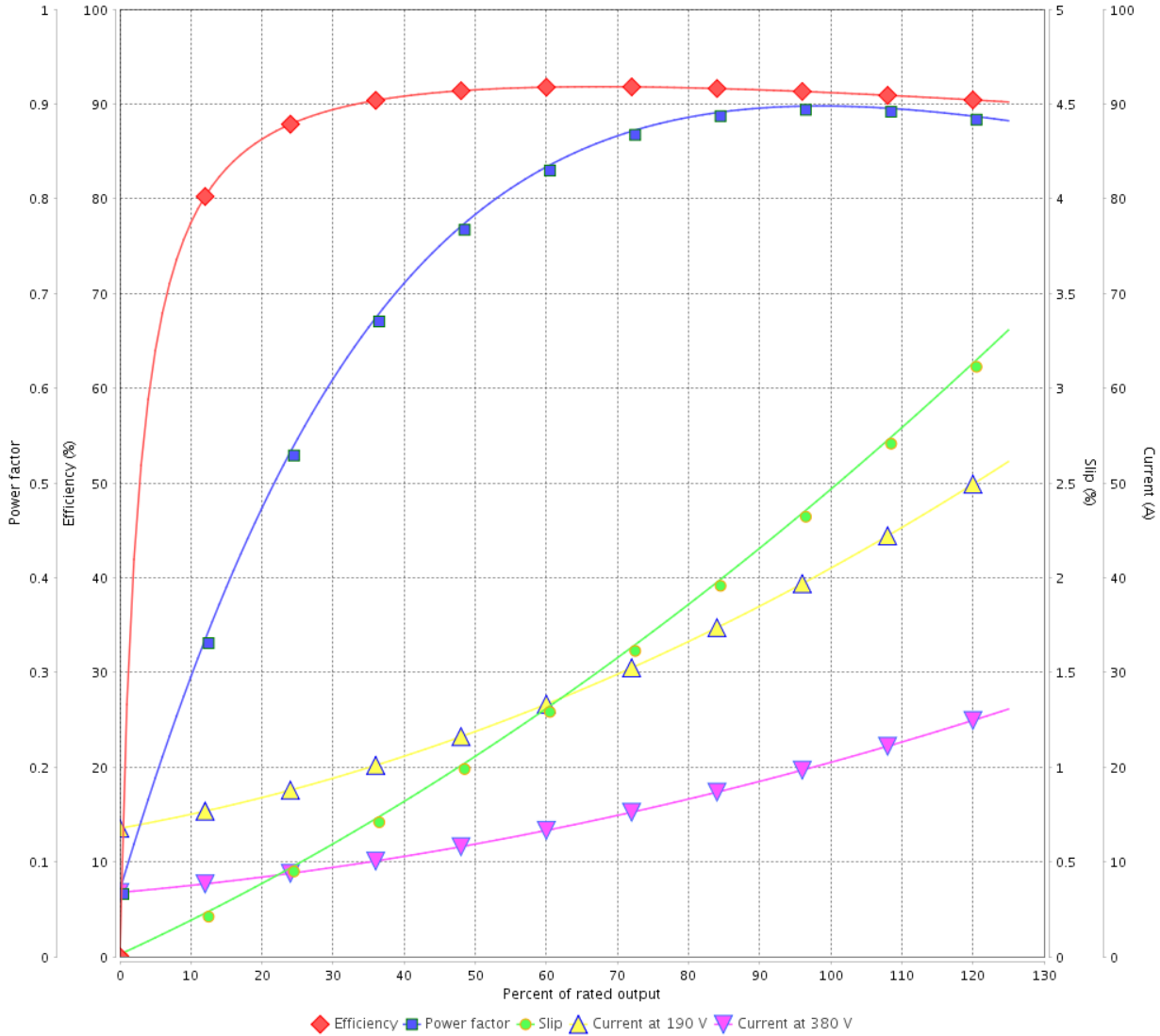
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Performance : 190/380 V 50 Hz 2P

Rated current : 40.8/20.4 A
 LRC : 7.4
 Rated torque : 26.9 ft.lb
 Locked rotor torque : 210 %
 Breakdown torque : 310 %
 Rated speed : 2925 rpm

Moment of inertia (J) : 1.22 sq.ft.lb
 Duty cycle : Cont.(S1)
 Insulation class : F
 Service factor : 1.00
 Temperature rise : 105 K
 Design : B

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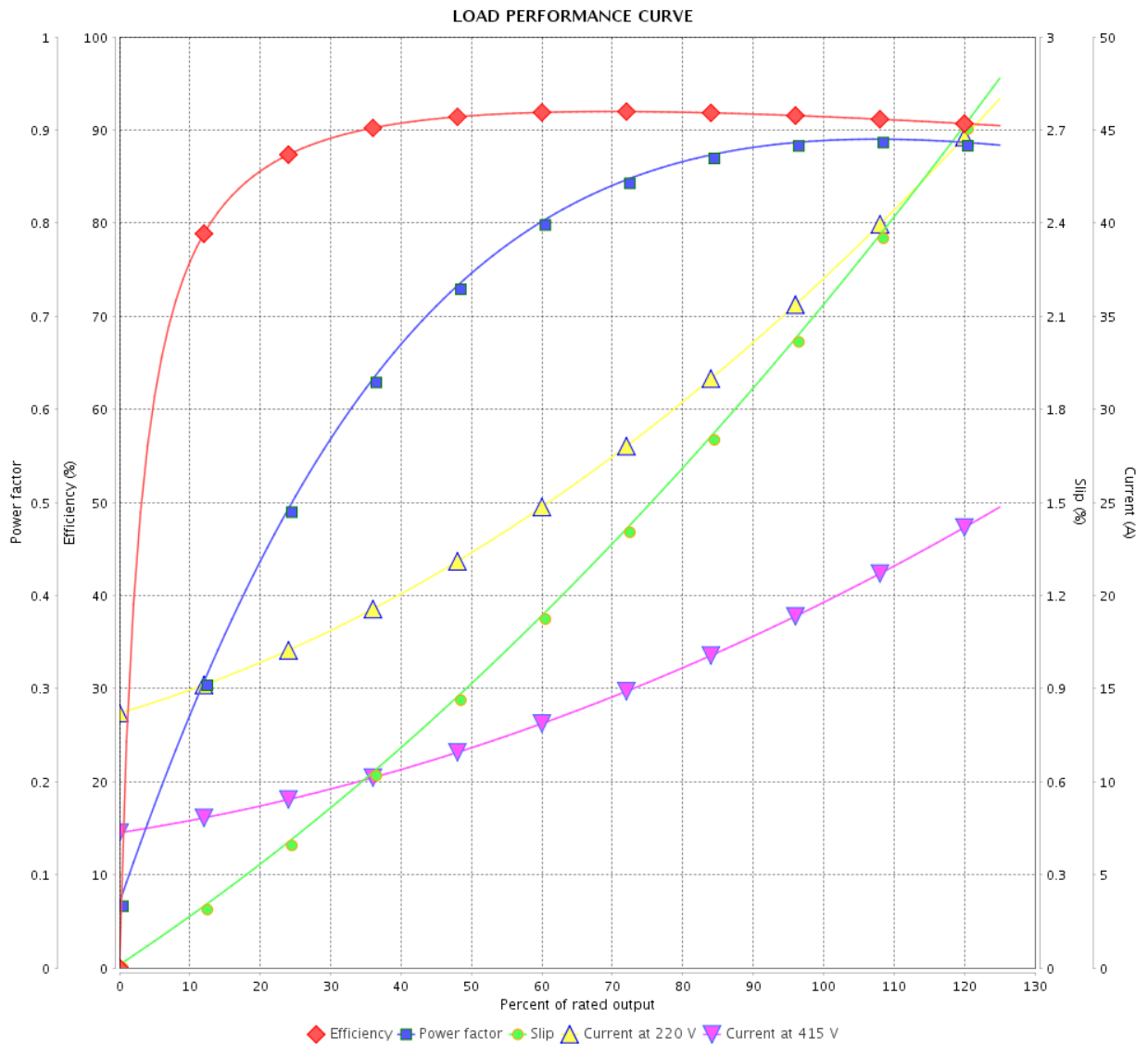


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Performance : 220/415 V 50 Hz 2P

Rated current : 36.8/19.5 A
 LRC : 8.1
 Rated torque : 26.8 ft.lb
 Locked rotor torque : 240 %
 Breakdown torque : 340 %
 Rated speed : 2935 rpm

Moment of inertia (J) : 1.22 sq.ft.lb
 Duty cycle : Cont.(S1)
 Insulation class : F
 Service factor : 1.00
 Temperature rise : 80 K
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THERMAL LIMIT CURVE

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LRC	: 6.6	Duty cycle	: Cont.(S1)
Rated torque	: 29.9 ft.lb	Insulation class	: F
Locked rotor torque	: 200 %	Service factor	: 1.15
Breakdown torque	: 290 %	Temperature rise	: 80 K
Rated speed	: 3515 rpm	Design	: B

Heating constant

Cooling constant

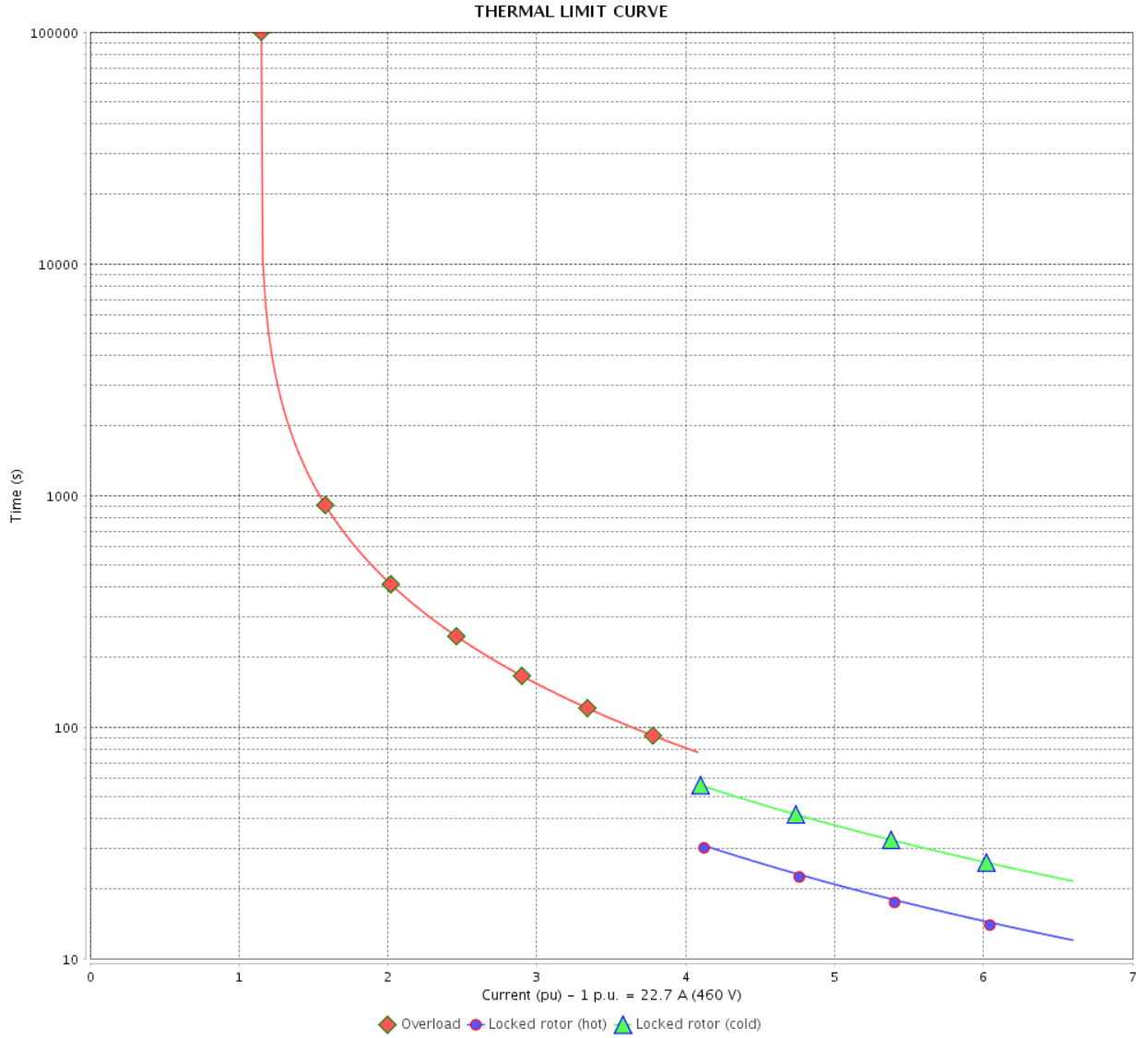
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Rated current	: 40.8/20.4 A	Moment of inertia (J)	: 1.22 sq.ft.lb
LRC	: 7.4	Duty cycle	: Cont.(S1)
Rated torque	: 26.9 ft.lb	Insulation class	: F
Locked rotor torque	: 210 %	Service factor	: 1.00
Breakdown torque	: 310 %	Temperature rise	: 105 K
Rated speed	: 2925 rpm	Design	: B

Heating constant

Cooling constant

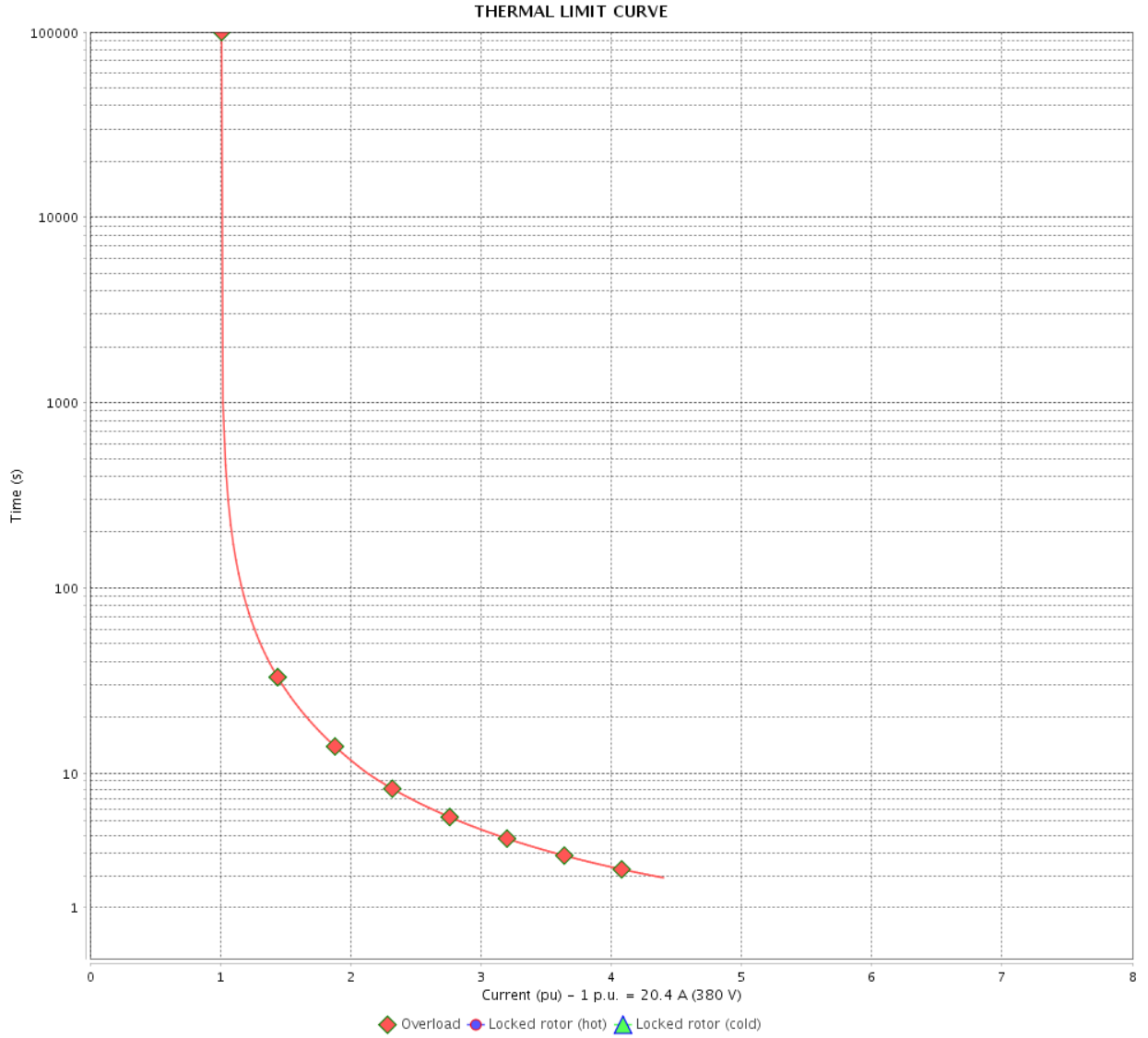
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Rated current	: 36.8/19.5 A	Moment of inertia (J)	: 1.22 sq.ft.lb
LRC	: 8.1	Duty cycle	: Cont.(S1)
Rated torque	: 26.8 ft.lb	Insulation class	: F
Locked rotor torque	: 240 %	Service factor	: 1.00
Breakdown torque	: 340 %	Temperature rise	: 80 K
Rated speed	: 2935 rpm	Design	: B

Heating constant

Cooling constant

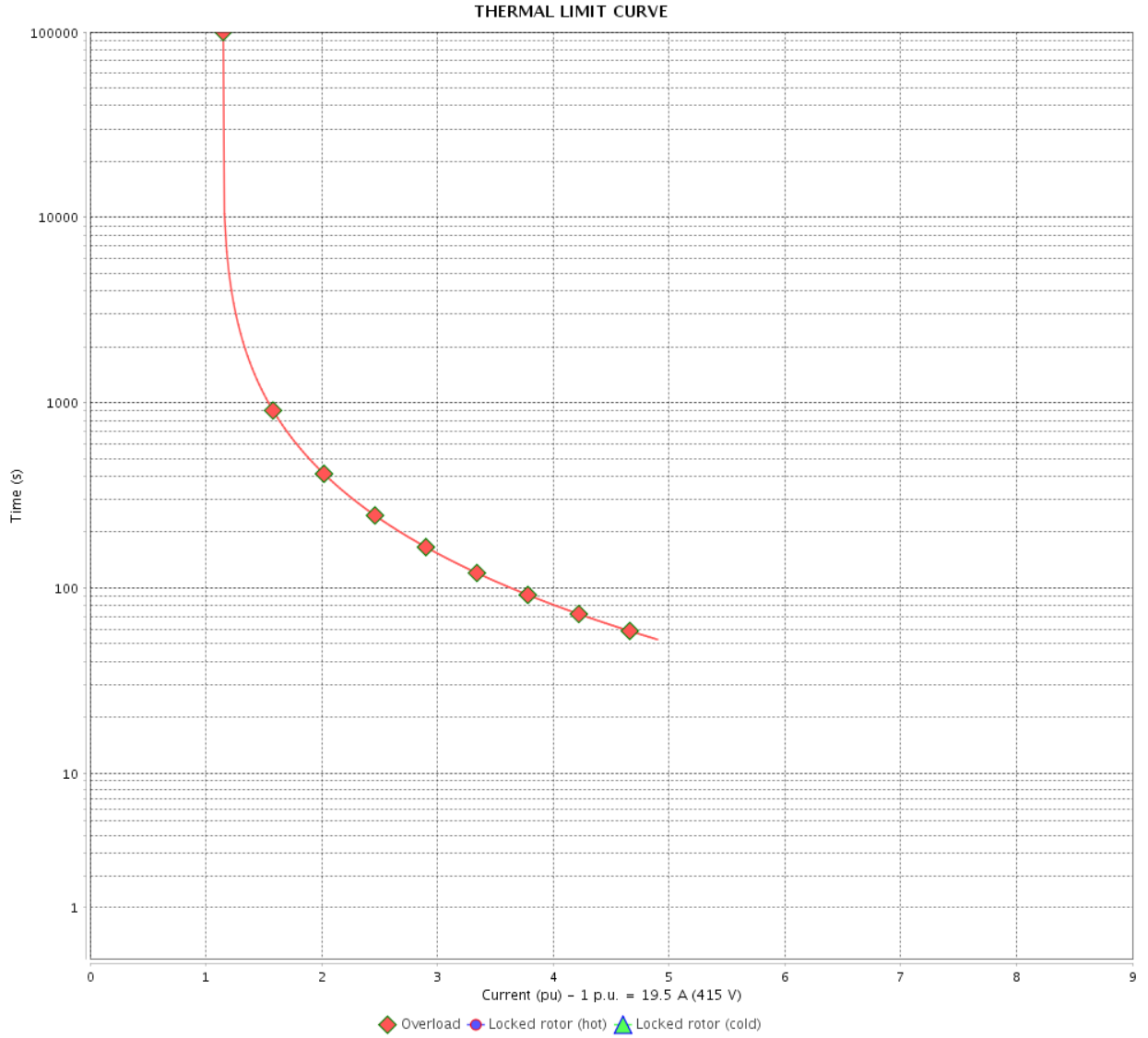
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VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage



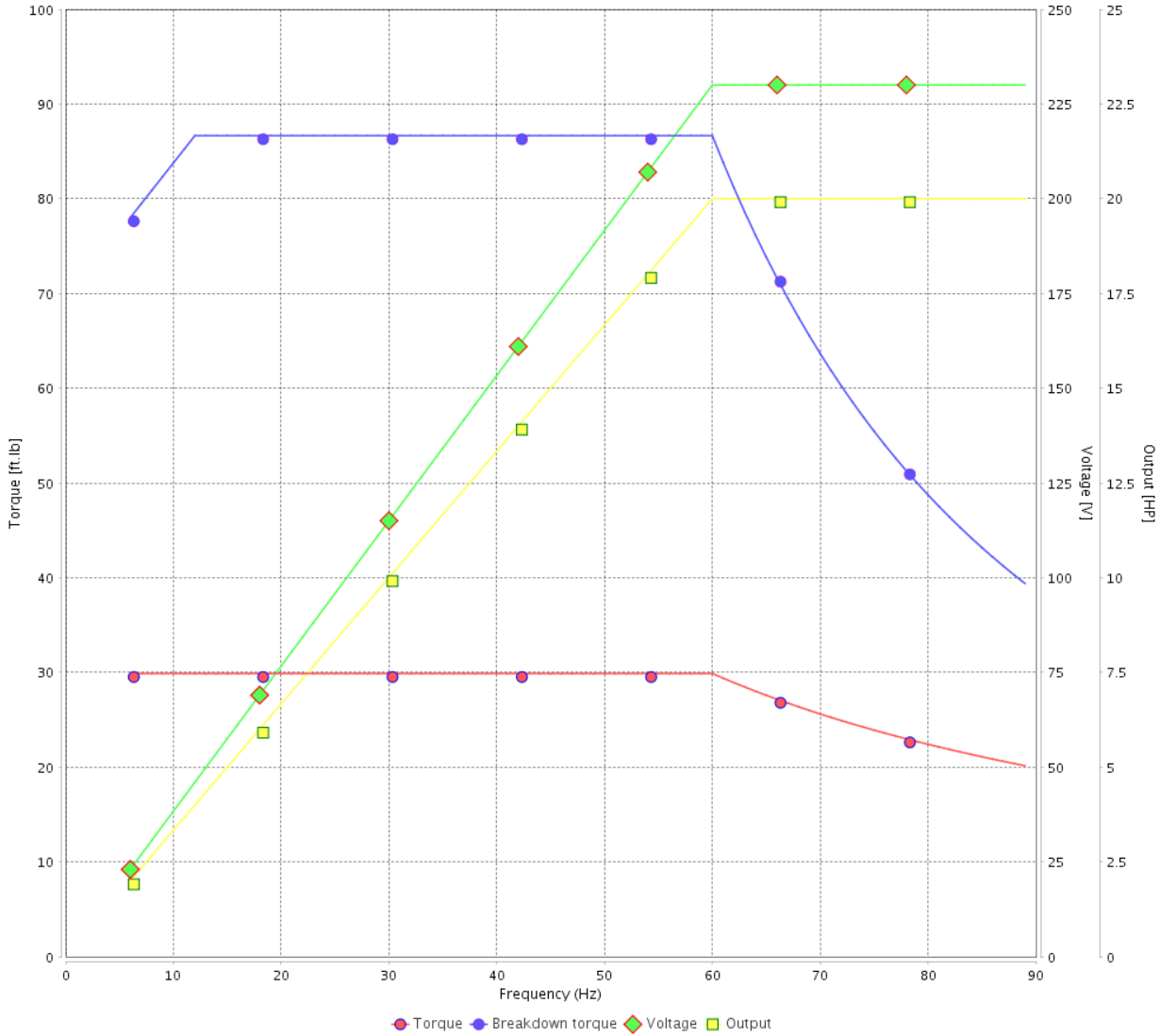
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 Breakdown torque : 290 %
 Rated speed : 3515 rpm

Moment of inertia (J) : 1.22 sq.ft.lb
 Duty cycle : Cont.(S1)
 Insulation class : F
 Service factor : 1.15
 Temperature rise : 80 K
 Design : B

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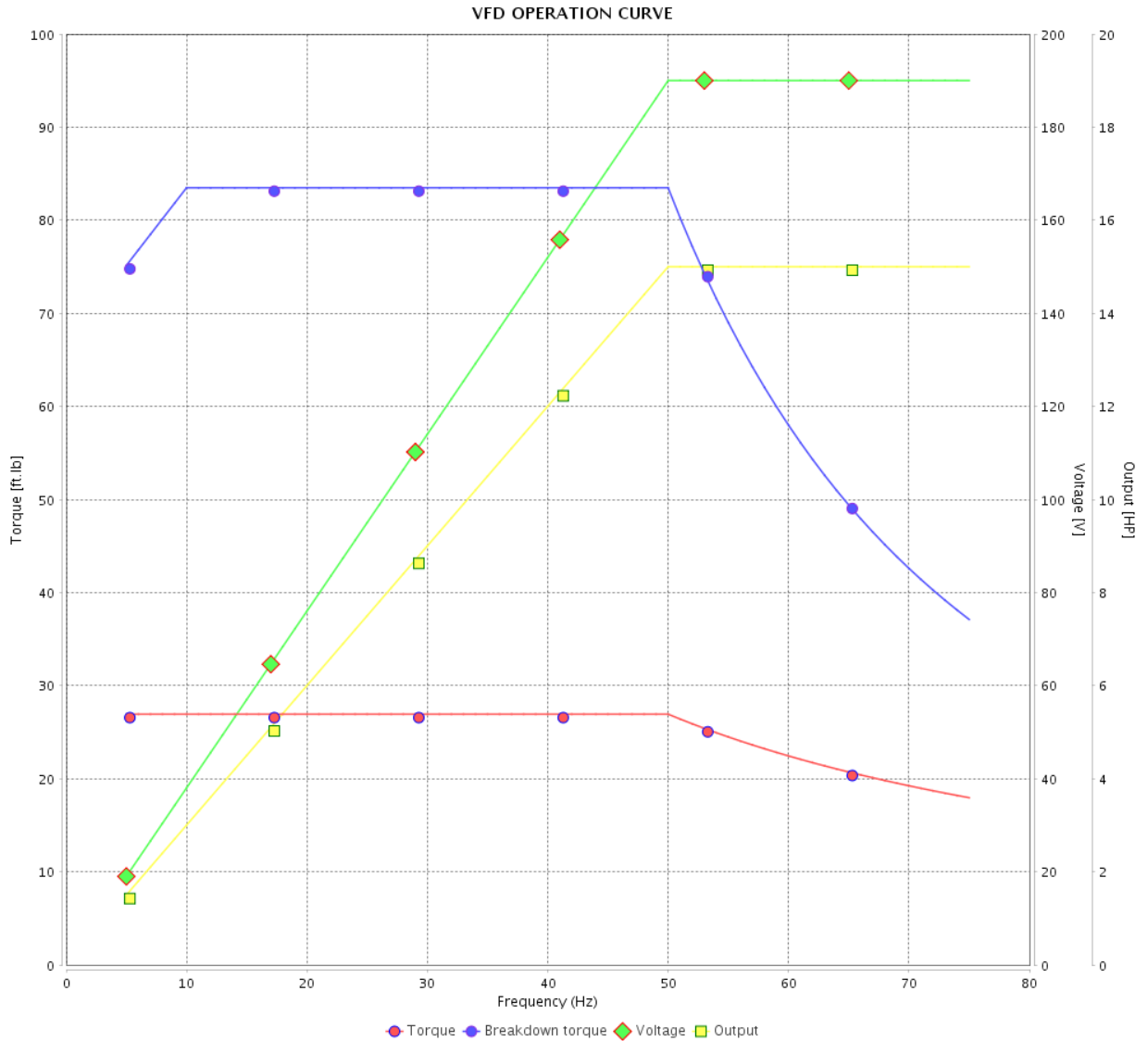
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Rated current : 40.8/20.4 A	Moment of inertia (J) : 1.22 sq.ft.lb
LRC : 7.4	Duty cycle : Cont.(S1)
Rated torque : 26.9 ft.lb	Insulation class : F
Locked rotor torque : 210 %	Service factor : 1.00
Breakdown torque : 310 %	Temperature rise : 105 K
Rated speed : 2925 rpm	Design : B

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VFD OPERATION CURVE

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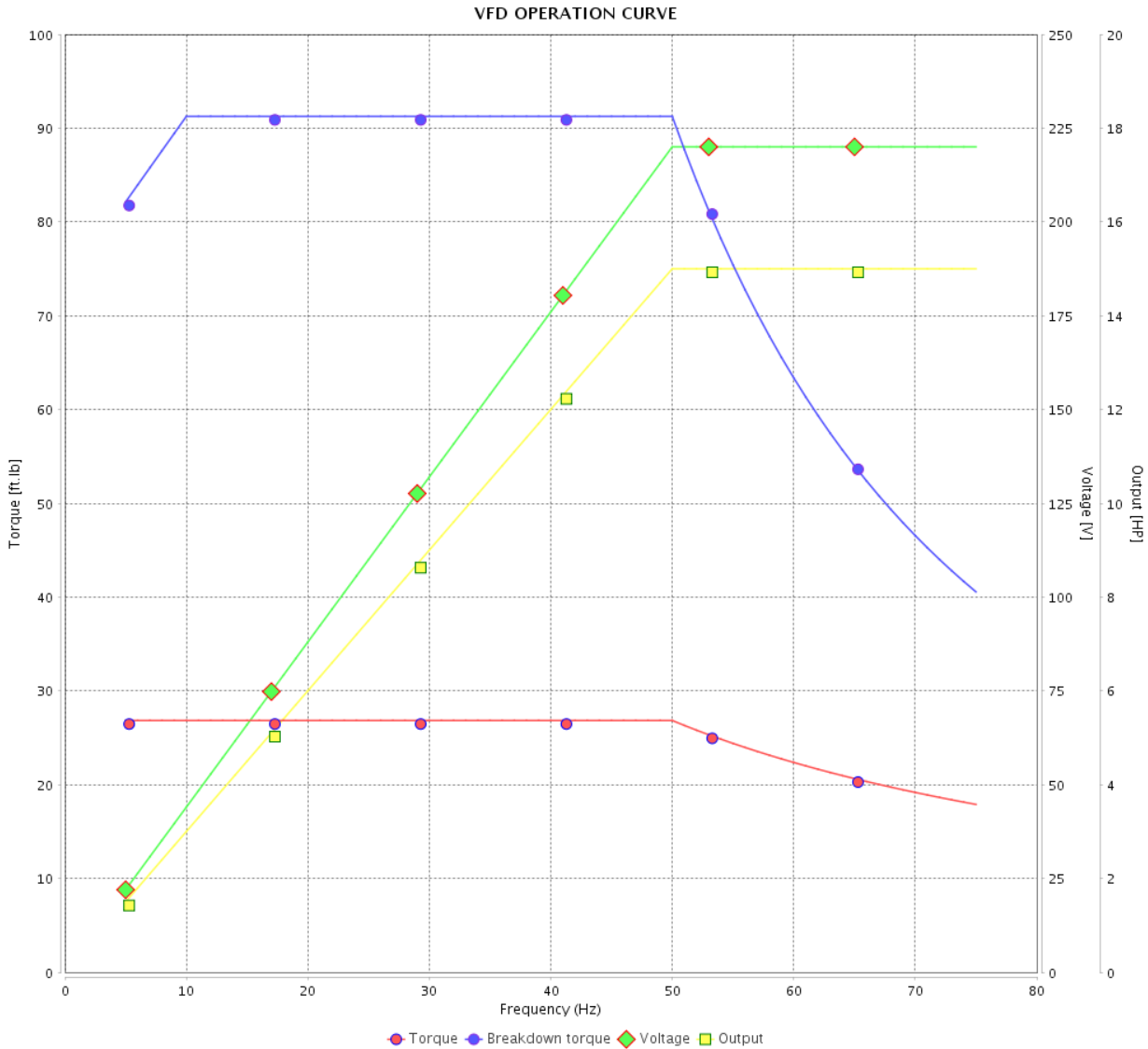


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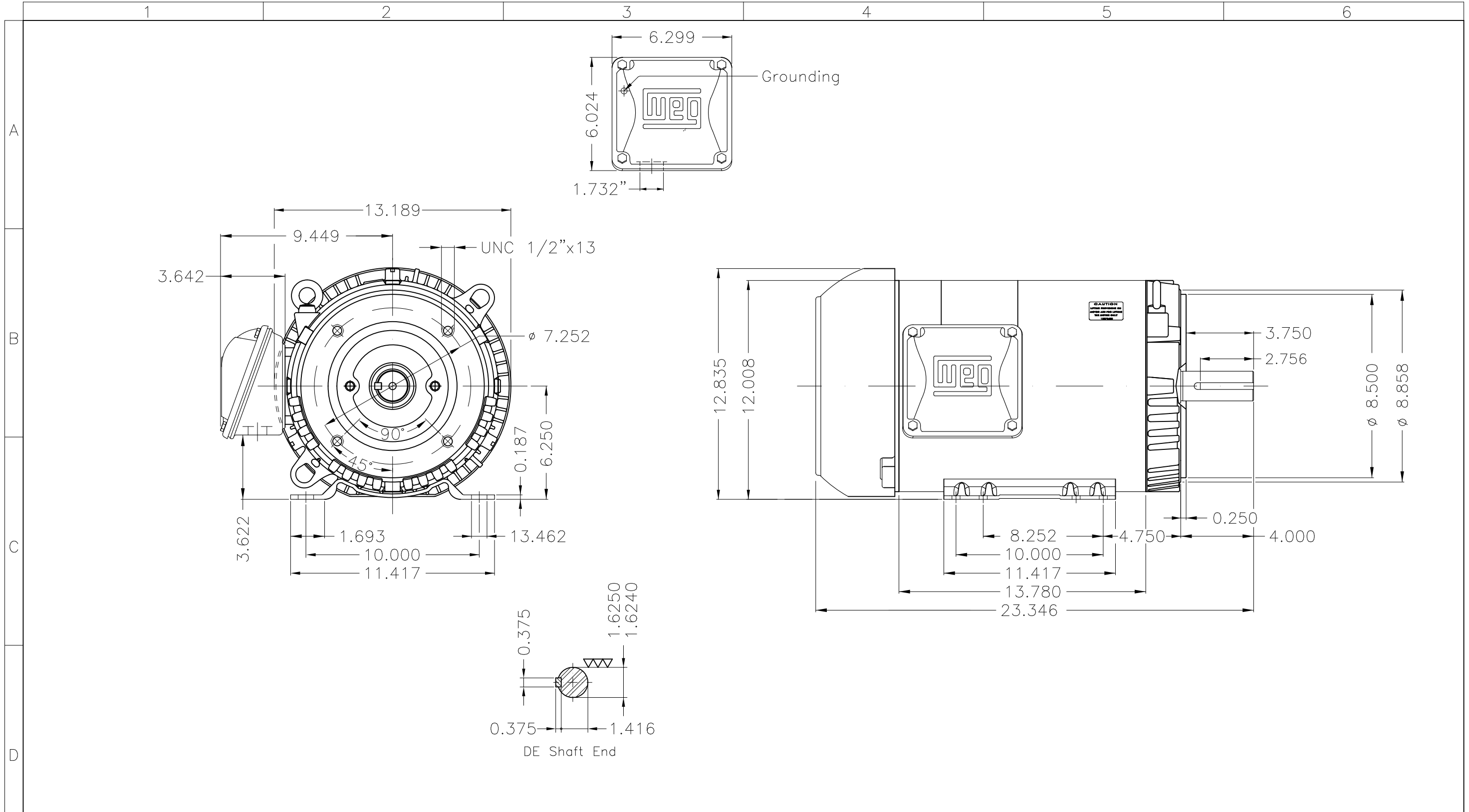


Performance : 220/415 V 50 Hz 2P

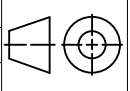
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 Service factor : 1.00
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Internal AEGIS ground ring on the DE
 Color Munsell N 1 matte black
 Painting plan 207N
 Mounting F-1/B34R(D)

ECM	LOC	SUMMARY OF MODIFICATIONS	EXECUTED	CHECKED	RELEASED	DATE	VER
EXECUTED	PIRWBUSER	 THREE PH. MOTOR ROLLED STEEL PREM. EFF. FRAME 254/6TC IP55 TEFC					
CHECKED							
RELEASED							
REL DT.	WMO	Jaragua do Sul	Product Engineering	SHEET		1 / 1	

20 HP 02 Poles 60 Hz

PREVIEW
 WDD


Dimensions in inches XME A3