

# DATA SHEET



## Three Phase Induction Motor - Squirrel Cage

Customer							
Product line	: NEMA Premium Efficiency Three-Phase	Product code	: 12447812				
		Catalog #	: 04018ST3QIE324T-W22				
Frame	: 324/6T	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>	: 572 lb				
Protection degree	: IP55	Moment of inertia (J)	: 9.16 sq.ft.lb				
Design	: B						
Output [HP]	40	30	30	30	40	40	40
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]	47.1	42.8	41.6	41.1	57.4	54.1	52.8
L. R. Amperes [A]	287	291	308	316	287	303	317
LRC [A]	6.1x(Code G)	6.8x(Code H)	7.4x(Code J)	7.7x(Code J)	5.0x(Code E)	5.6x(Code F)	6.0x(Code G)
No load current [A]	17.0	16.8	17.3	18.6	16.8	17.3	18.6
Rated speed [RPM]	1775	1477	1480	1481	1460	1465	1470
Slip [%]	1.39	1.53	1.33	1.27	2.67	2.33	2.00
Rated torque [ft.lb]	118	107	106	106	144	143	143
Locked rotor torque [%]	229	240	270	280	170	190	210
Breakdown torque [%]	240	250	290	310	180	210	229
Service factor	1.25	1.00	1.00	1.00	1.00	1.00	1.00
Temperature rise	80 K	80 K	80 K	80 K	105 K	105 K	105 K
Locked rotor time	36s (cold) 20s (hot)	25s (cold) 14s (hot)	27s (cold) 15s (hot)	27s (cold) 15s (hot)	25s (cold) 14s (hot)	27s (cold) 15s (hot)	27s (cold) 15s (hot)
Noise level <sup>2</sup>	66.0 dB(A)	63.0 dB(A)	63.0 dB(A)	63.0 dB(A)	63.0 dB(A)	63.0 dB(A)	63.0 dB(A)
Efficiency (%)	25%						
	50%	93.6	92.9	92.4	91.7	93.6	93.0
	75%	94.1	93.1	93.0	92.6	93.0	93.0
	100%	94.1	93.0	93.2	93.1	92.4	93.0
Power Factor	25%						
	50%	0.72	0.68	0.64	0.62	0.78	0.72
	75%	0.80	0.78	0.75	0.73	0.84	0.80
	100%	0.85	0.84	0.82	0.80	0.86	0.85
Bearing type	: Drive end 6312 C3	Non drive end 6212 C3	Foundation loads				
Sealing	: Inpro/Seal	Inpro/Seal	Max. traction	: 975 lb			
Lubrication interval	: 20000 h	20000 h	Max. compression	: 1547 lb			
Lubricant amount	: 21 g	13 g					
Lubricant type	: Mobil Polyrex EM						
Notes							
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



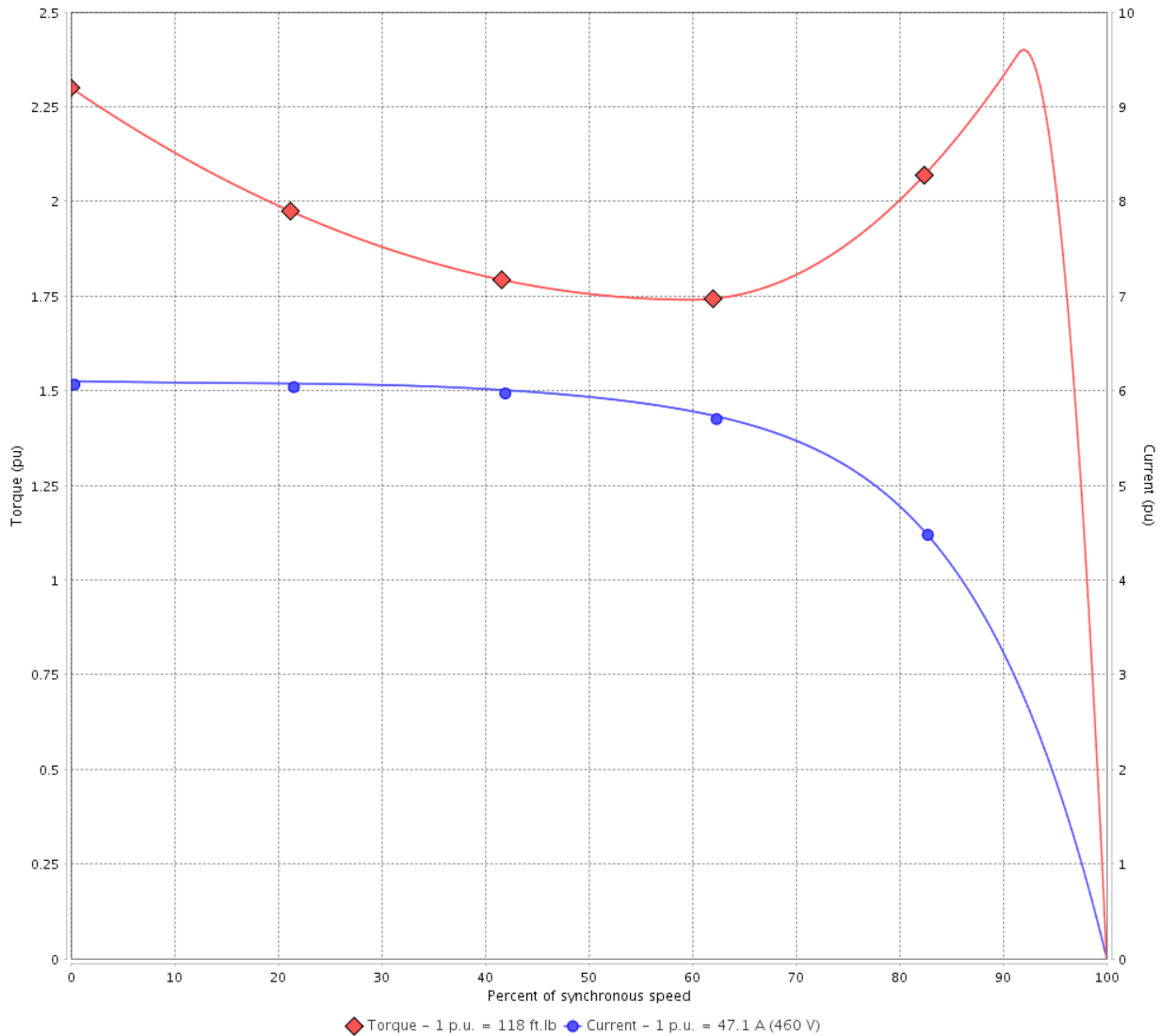
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12447812

Catalog # : 04018ST3QIE324T-W22

TORQUE AND CURRENT VS SPEED CURVE



Performance : 460 V 60 Hz 4P

Rated current	: 47.1 A	Moment of inertia (J)	: 9.16 sq.ft.lb
LRC	: 6.1	Duty cycle	: Cont.(S1)
Rated torque	: 118 ft.lb	Insulation class	: F
Locked rotor torque	: 229 %	Service factor	: 1.25
Breakdown torque	: 240 %	Temperature rise	: 80 K
Rated speed	: 1775 rpm	Design	: B

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

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# TORQUE AND CURRENT VS SPEED CURVE



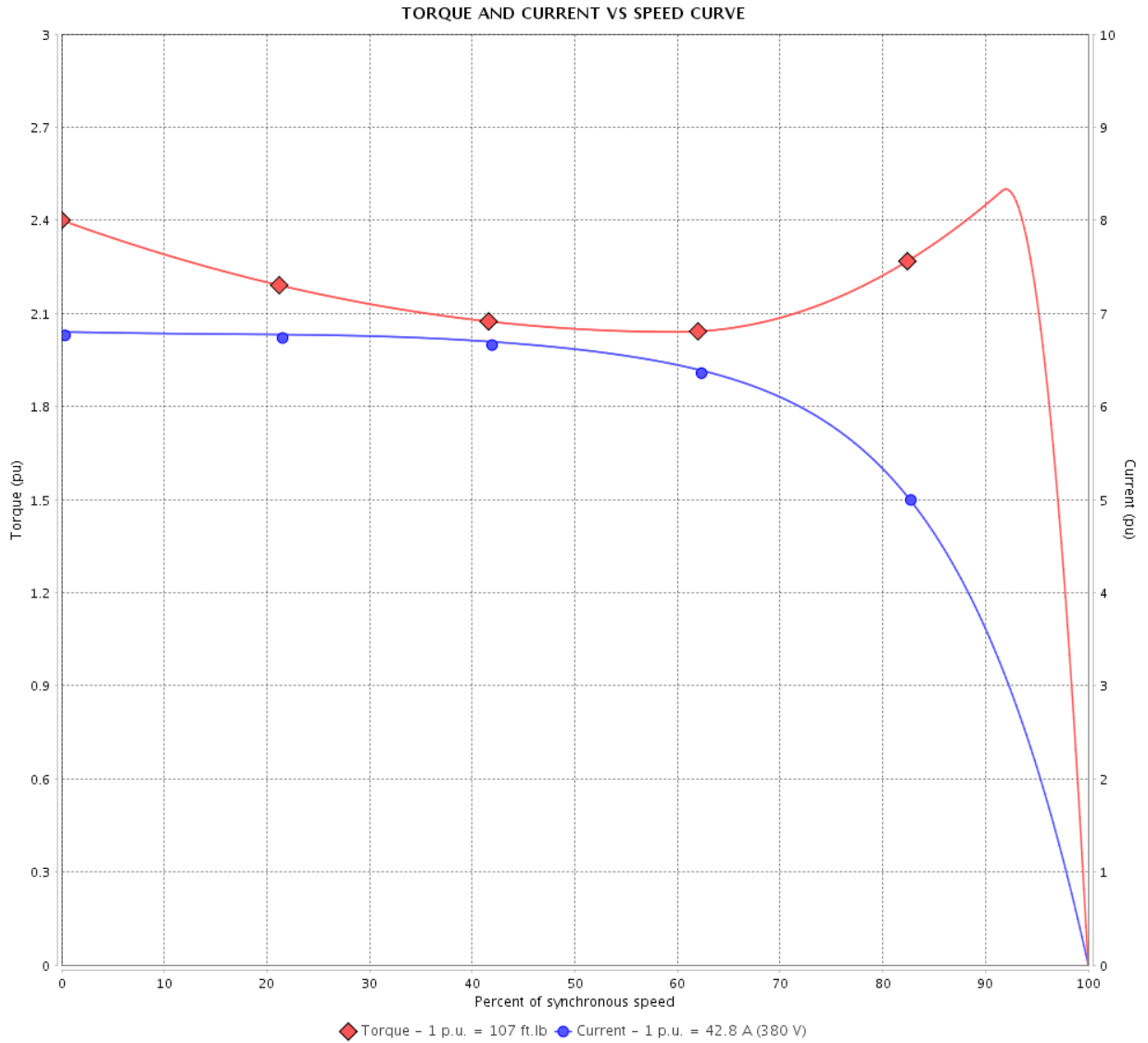
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Performance : 380 V 50 Hz 4P IE3

Rated current	: 42.8 A	Moment of inertia (J)	: 9.16 sq.ft.lb
LRC	: 6.8	Duty cycle	: Cont.(S1)
Rated torque	: 107 ft.lb	Insulation class	: F
Locked rotor torque	: 240 %	Service factor	: 1.00
Breakdown torque	: 250 %	Temperature rise	: 80 K
Rated speed	: 1477 rpm	Design	: B

Locked rotor time : 25s (cold) 14s (hot)

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# TORQUE AND CURRENT VS SPEED CURVE

## Three Phase Induction Motor - Squirrel Cage



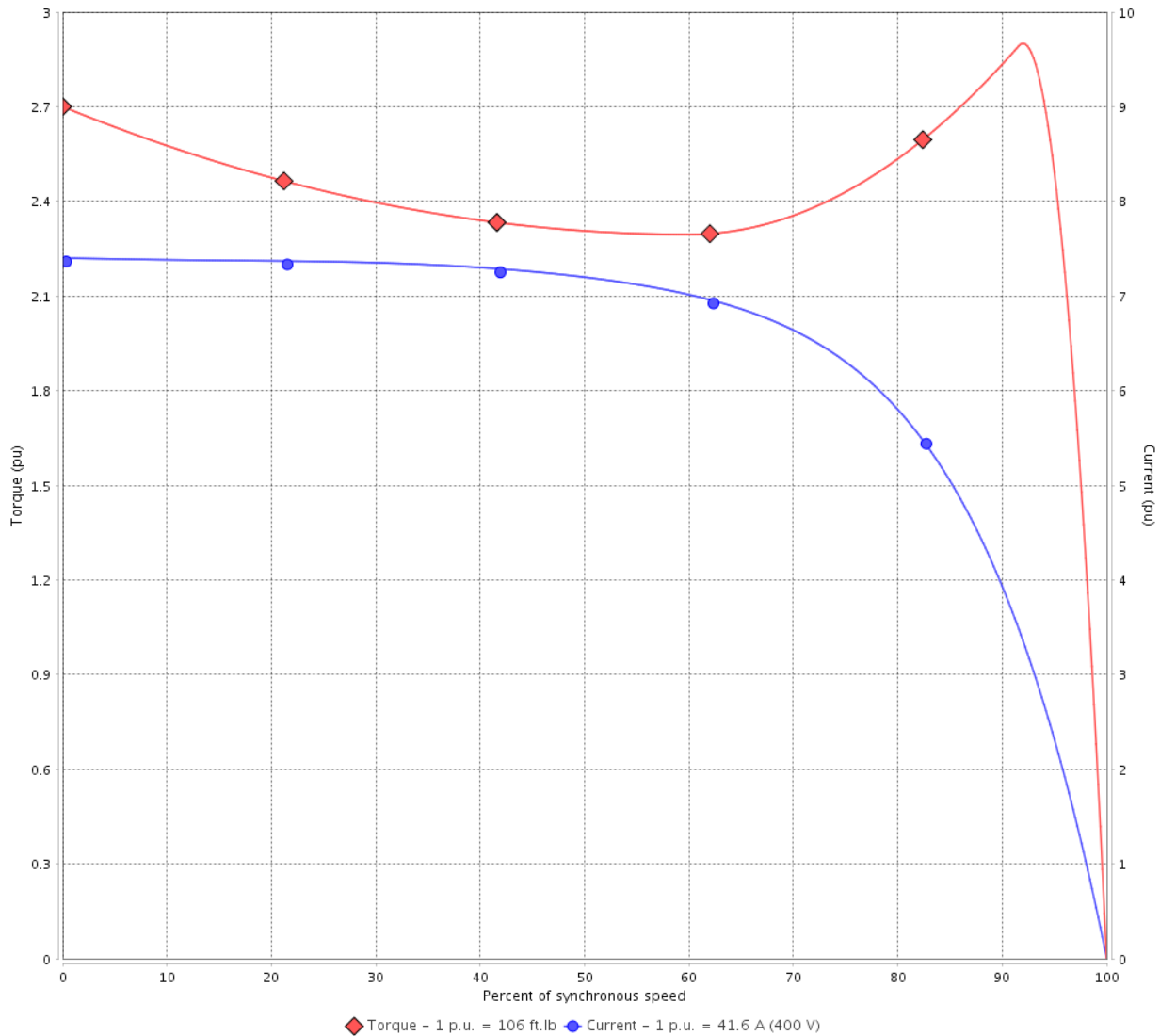
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TORQUE AND CURRENT VS SPEED CURVE



Performance : 400 V 50 Hz 4P IE3

Rated current	: 41.6 A	Moment of inertia (J)	: 9.16 sq.ft.lb
LRC	: 7.4	Duty cycle	: Cont.(S1)
Rated torque	: 106 ft.lb	Insulation class	: F
Locked rotor torque	: 270 %	Service factor	: 1.00
Breakdown torque	: 290 %	Temperature rise	: 80 K
Rated speed	: 1480 rpm	Design	: B

Locked rotor time : 27s (cold) 15s (hot)

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# TORQUE AND CURRENT VS SPEED CURVE



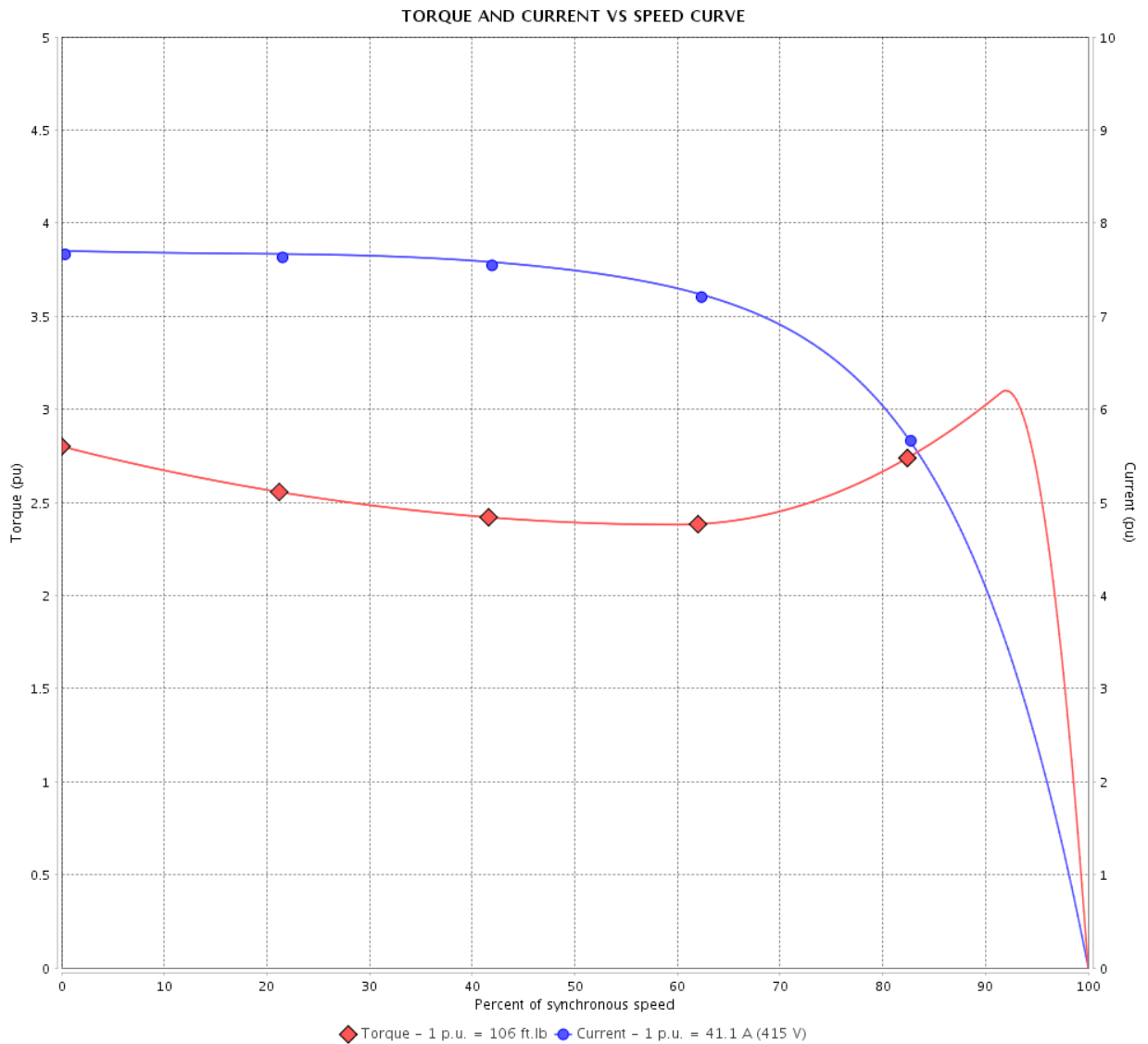
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Performance : 415 V 50 Hz 4P IE3

Rated current	: 41.1 A	Moment of inertia (J)	: 9.16 sq.ft.lb
LRC	: 7.7	Duty cycle	: Cont.(S1)
Rated torque	: 106 ft.lb	Insulation class	: F
Locked rotor torque	: 280 %	Service factor	: 1.00
Breakdown torque	: 310 %	Temperature rise	: 80 K
Rated speed	: 1481 rpm	Design	: B

Locked rotor time : 27s (cold) 15s (hot)

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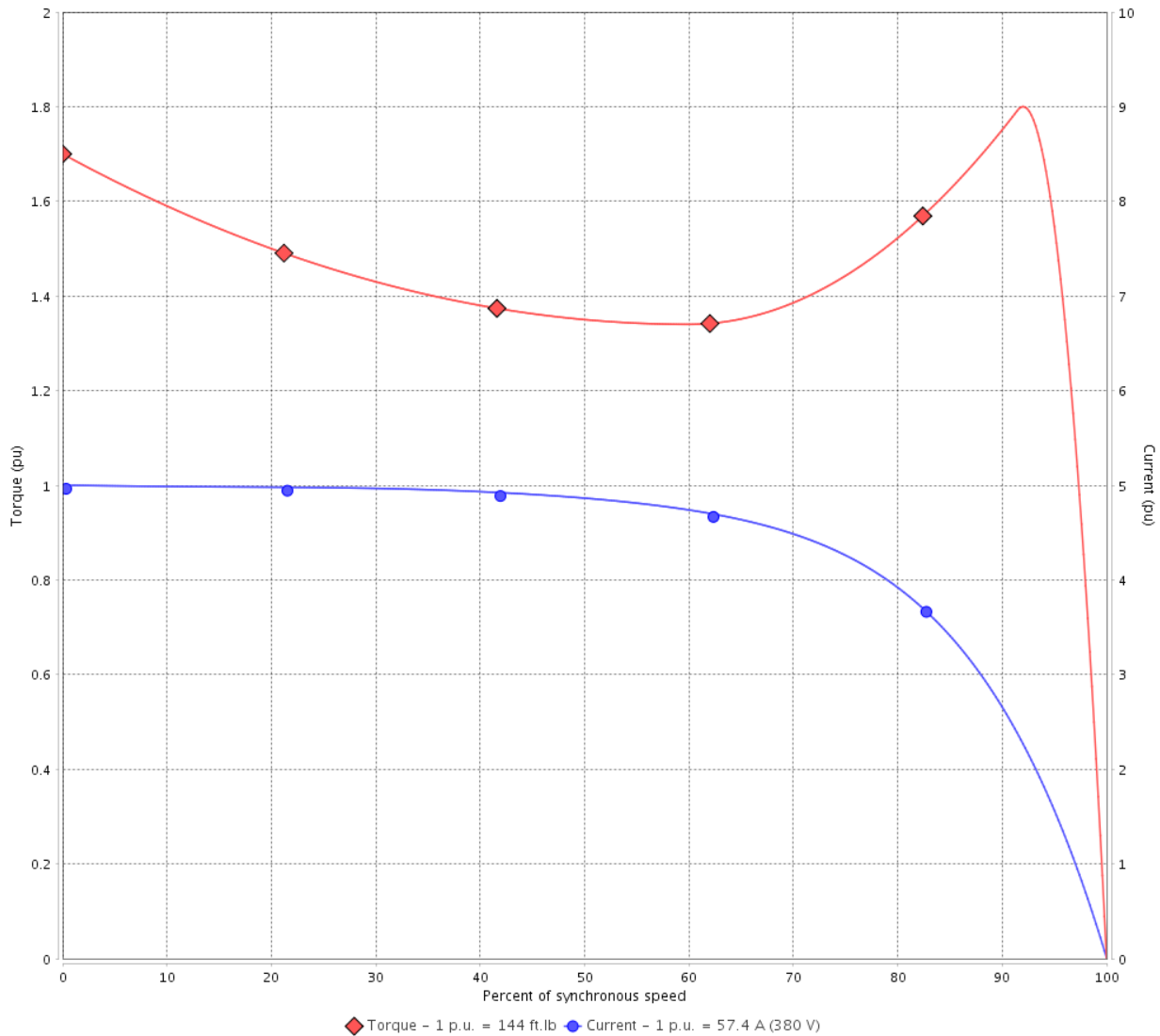
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Product code : 12447812

Catalog # : 04018ST3QIE324T-W22

TORQUE AND CURRENT VS SPEED CURVE



Performance : 380 V 50 Hz 4P IE2

Rated current	: 57.4 A	Moment of inertia (J)	: 9.16 sq.ft.lb
LRC	: 5.0	Duty cycle	: Cont.(S1)
Rated torque	: 144 ft.lb	Insulation class	: F
Locked rotor torque	: 170 %	Service factor	: 1.00
Breakdown torque	: 180 %	Temperature rise	: 105 K
Rated speed	: 1460 rpm	Design	: B

Locked rotor time : 25s (cold) 14s (hot)

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# TORQUE AND CURRENT VS SPEED CURVE



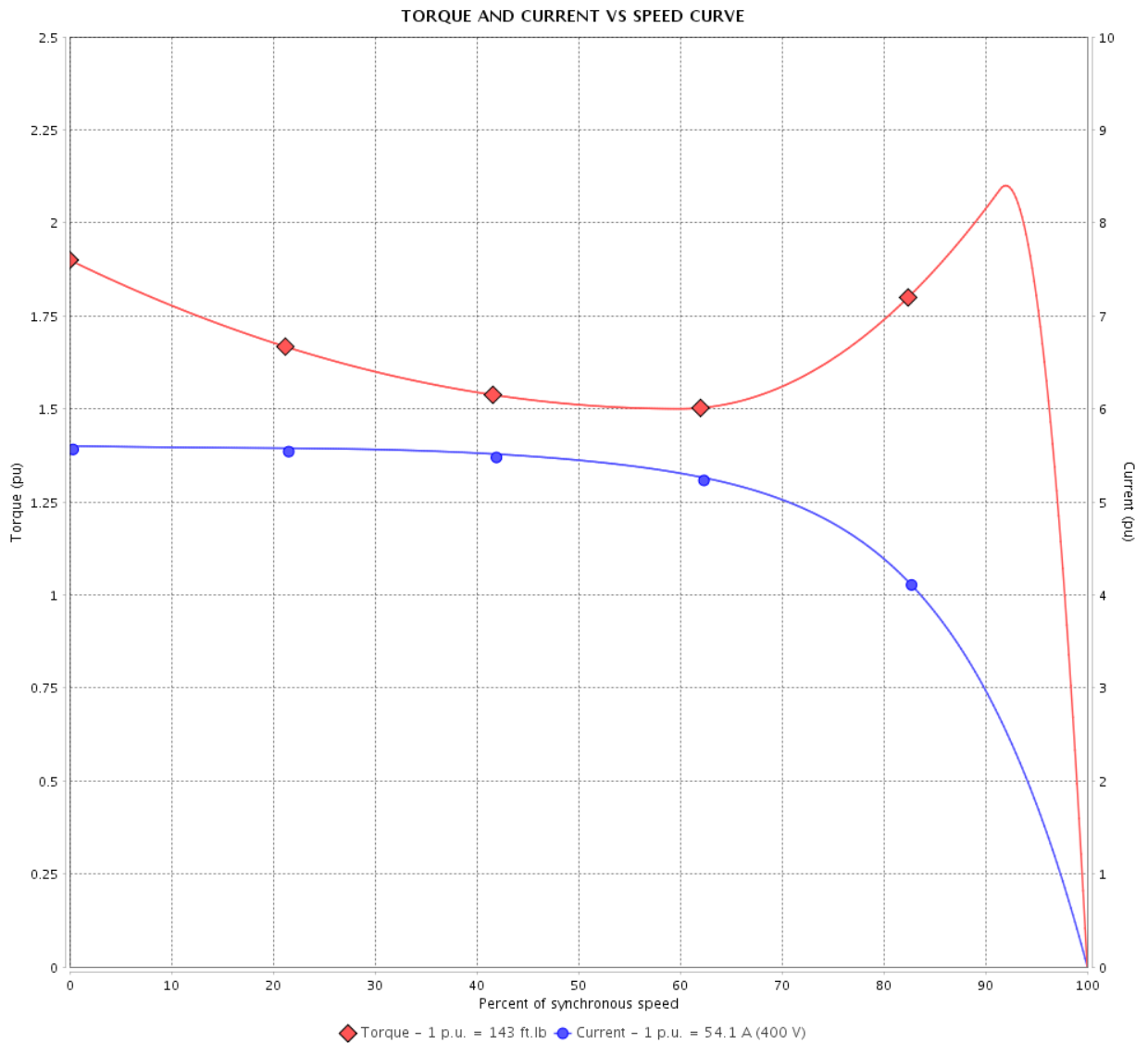
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Product code : 12447812

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Performance : 400 V 50 Hz 4P IE2

Rated current	: 54.1 A	Moment of inertia (J)	: 9.16 sq.ft.lb
LRC	: 5.6	Duty cycle	: Cont.(S1)
Rated torque	: 143 ft.lb	Insulation class	: F
Locked rotor torque	: 190 %	Service factor	: 1.00
Breakdown torque	: 210 %	Temperature rise	: 105 K
Rated speed	: 1465 rpm	Design	: B

Locked rotor time : 27s (cold) 15s (hot)

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# TORQUE AND CURRENT VS SPEED CURVE

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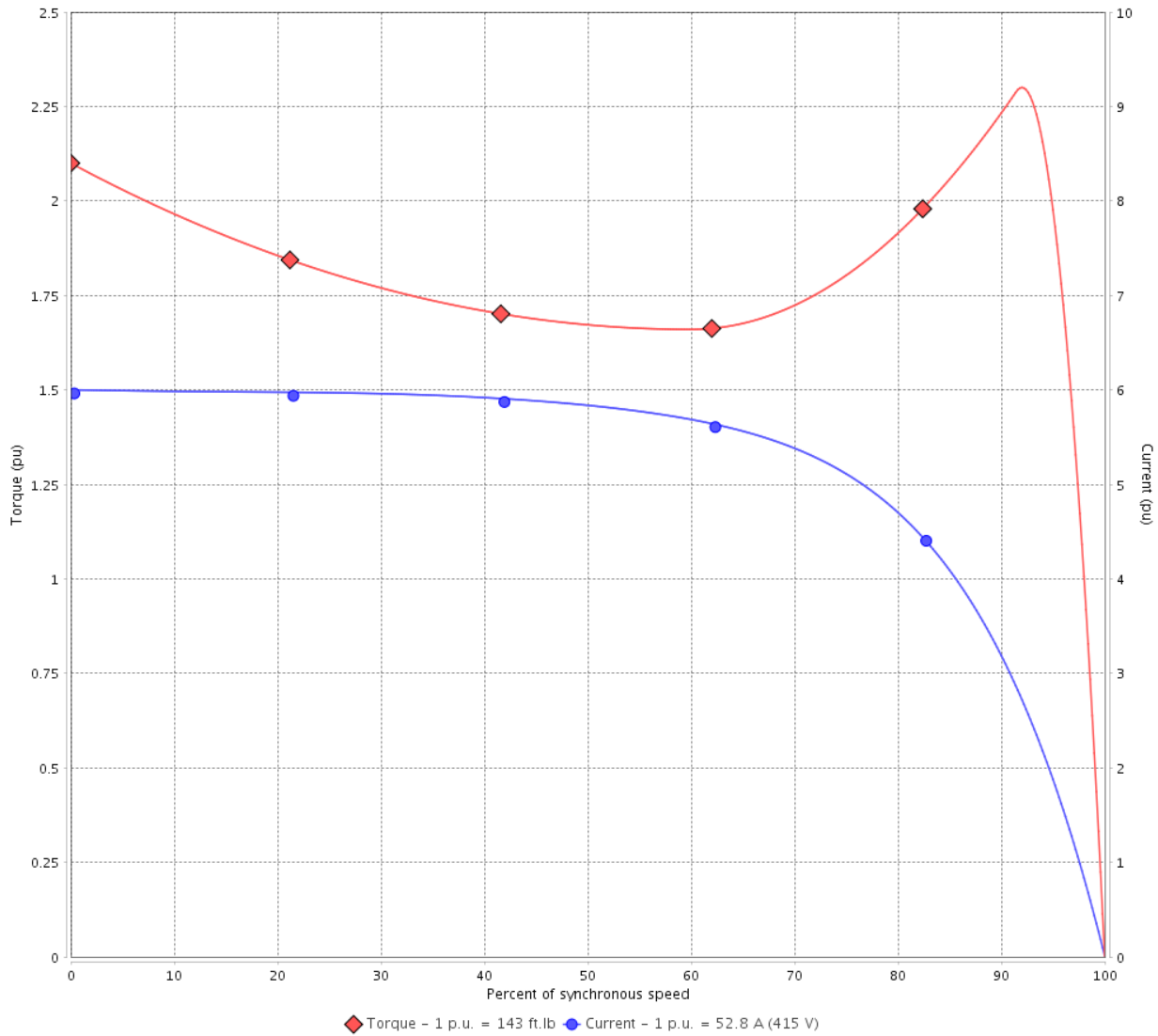
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TORQUE AND CURRENT VS SPEED CURVE



Performance : 415 V 50 Hz 4P IE2

Rated current	: 52.8 A	Moment of inertia (J)	: 9.16 sq.ft.lb
LRC	: 6.0	Duty cycle	: Cont.(S1)
Rated torque	: 143 ft.lb	Insulation class	: F
Locked rotor torque	: 210 %	Service factor	: 1.00
Breakdown torque	: 229 %	Temperature rise	: 105 K
Rated speed	: 1470 rpm	Design	: B

Locked rotor time : 27s (cold) 15s (hot)

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# LOAD PERFORMANCE CURVE

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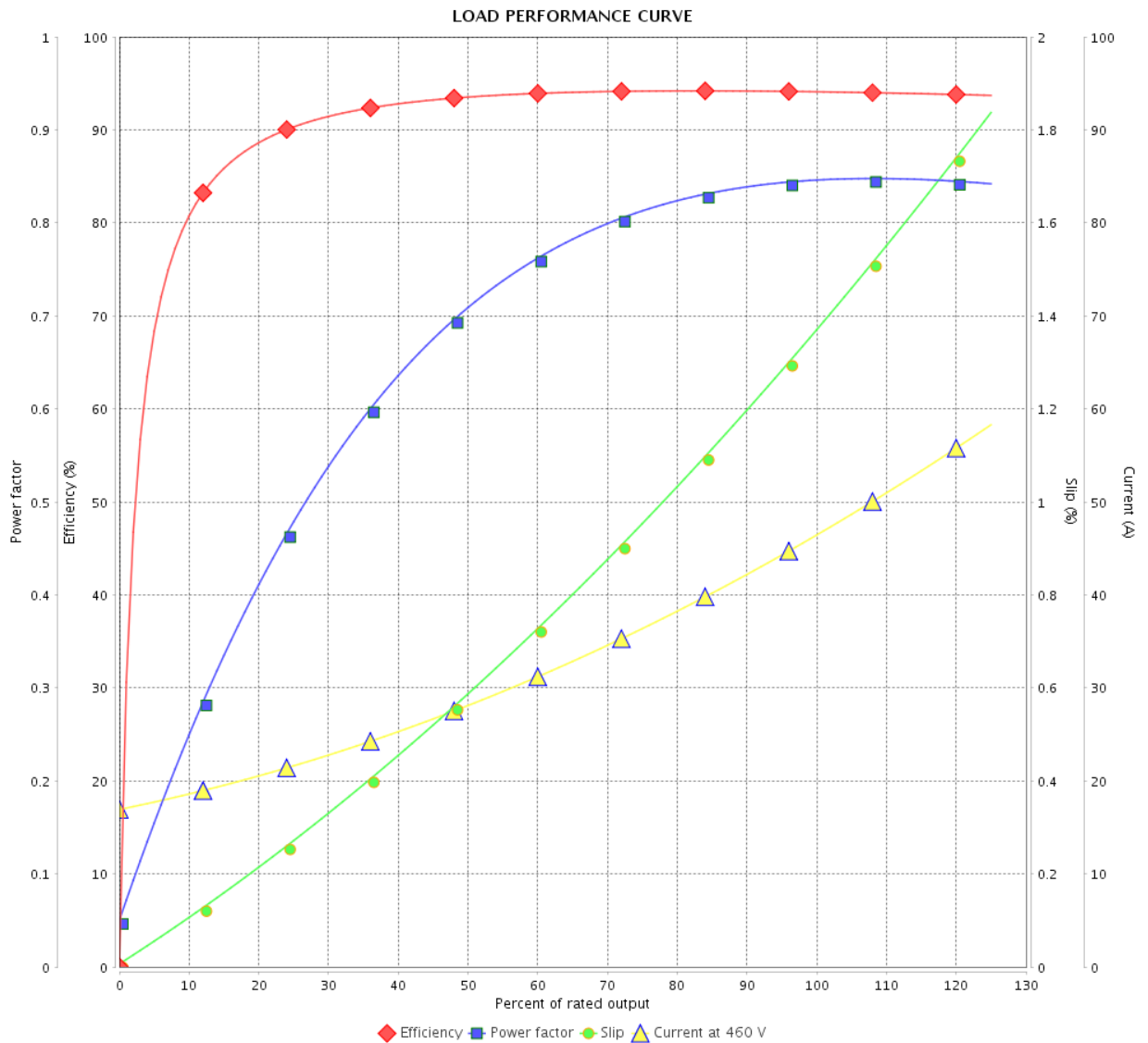


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Performance : 460 V 60 Hz 4P

Rated current : 47.1 A  
 LRC : 6.1  
 Rated torque : 118 ft.lb  
 Locked rotor torque : 229 %  
 Breakdown torque : 240 %  
 Rated speed : 1775 rpm

Moment of inertia (J) : 9.16 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.25  
 Temperature rise : 80 K  
 Design : B

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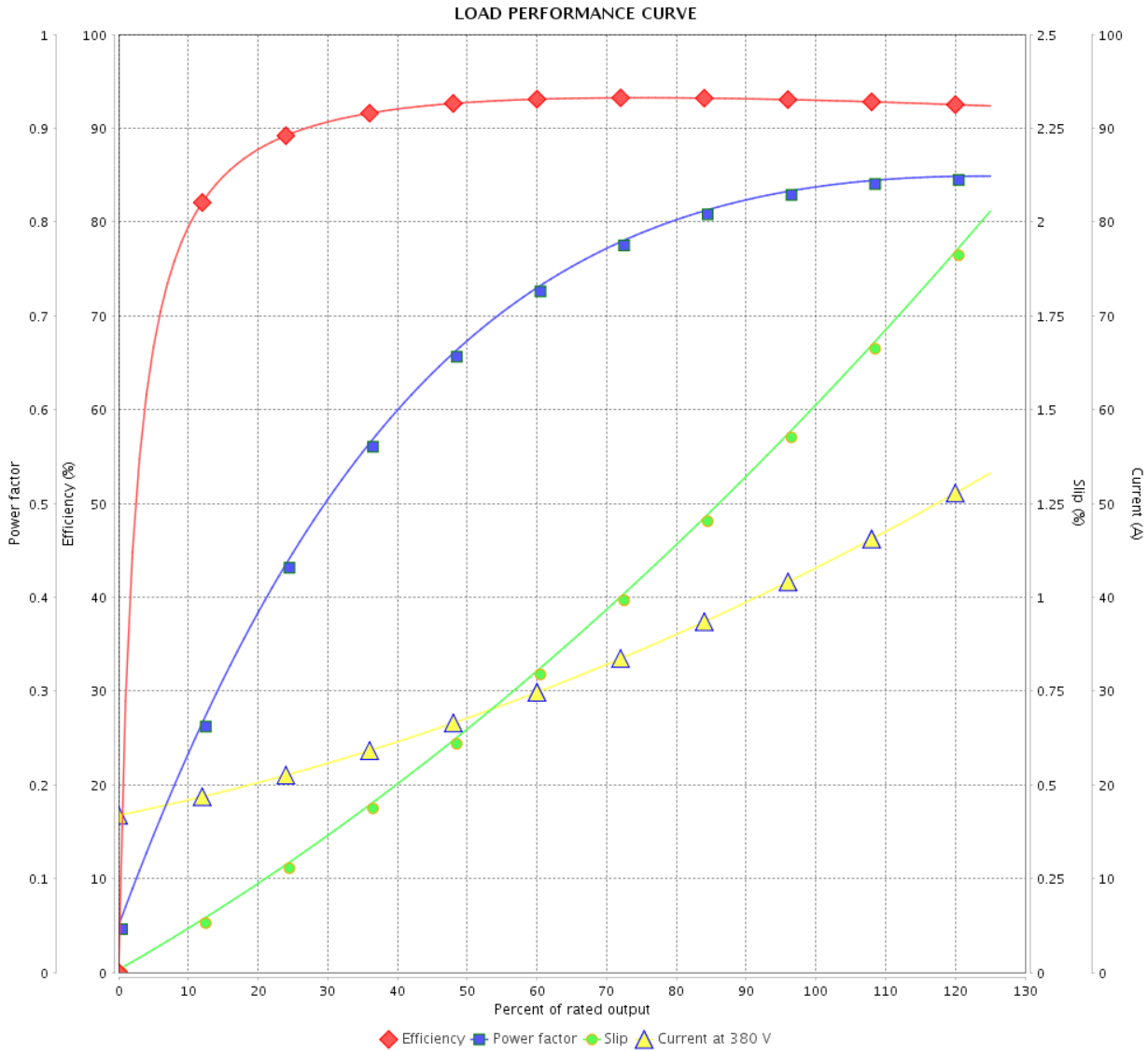


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Performance : 380 V 50 Hz 4P IE3

Rated current : 42.8 A  
 LRC : 6.8  
 Rated torque : 107 ft.lb  
 Locked rotor torque : 240 %  
 Breakdown torque : 250 %  
 Rated speed : 1477 rpm

Moment of inertia (J) : 9.16 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : B

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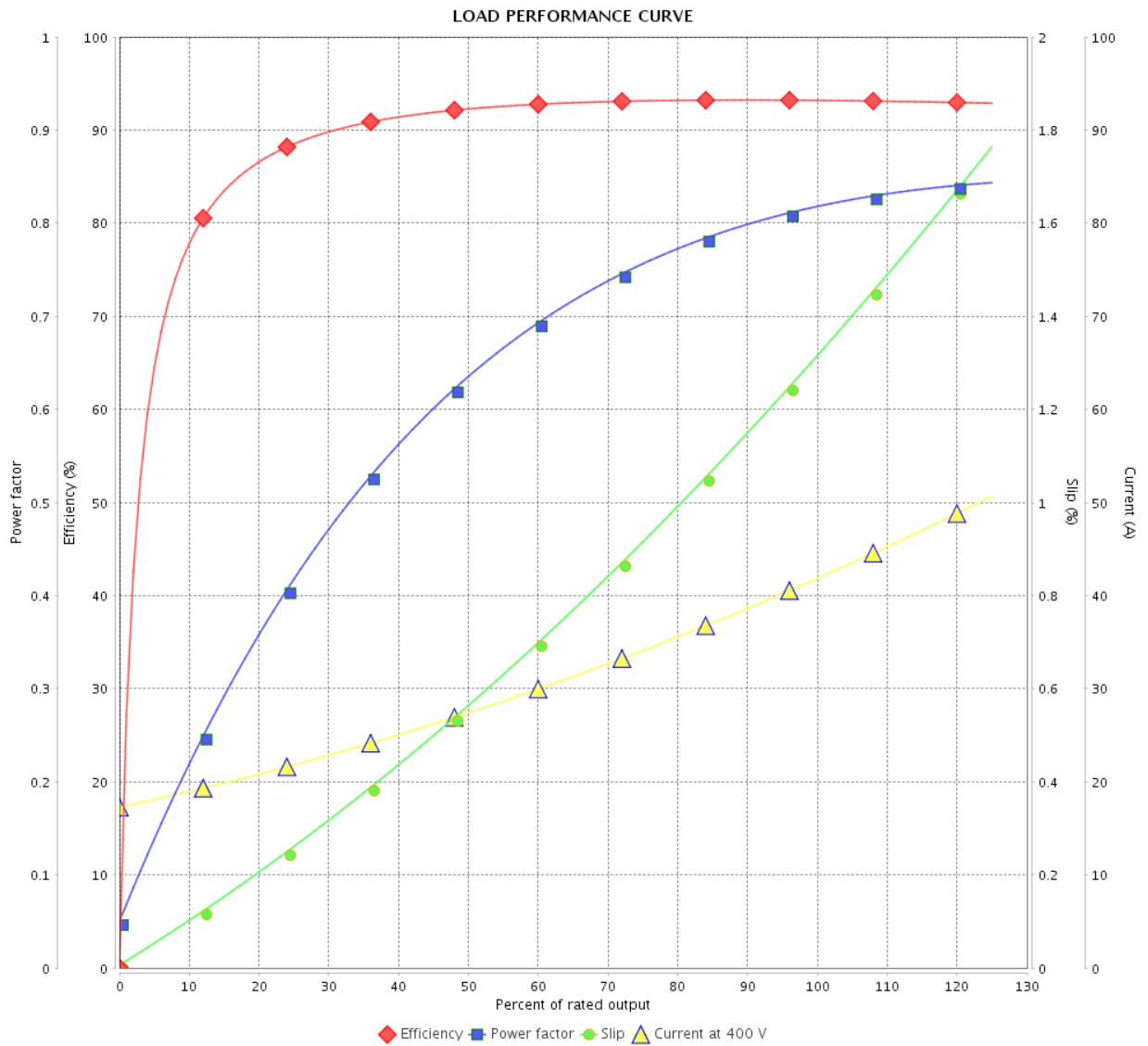


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Performance : 400 V 50 Hz 4P IE3

Rated current : 41.6 A  
 LRC : 7.4  
 Rated torque : 106 ft.lb  
 Locked rotor torque : 270 %  
 Breakdown torque : 290 %  
 Rated speed : 1480 rpm

Moment of inertia (J) : 9.16 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : B

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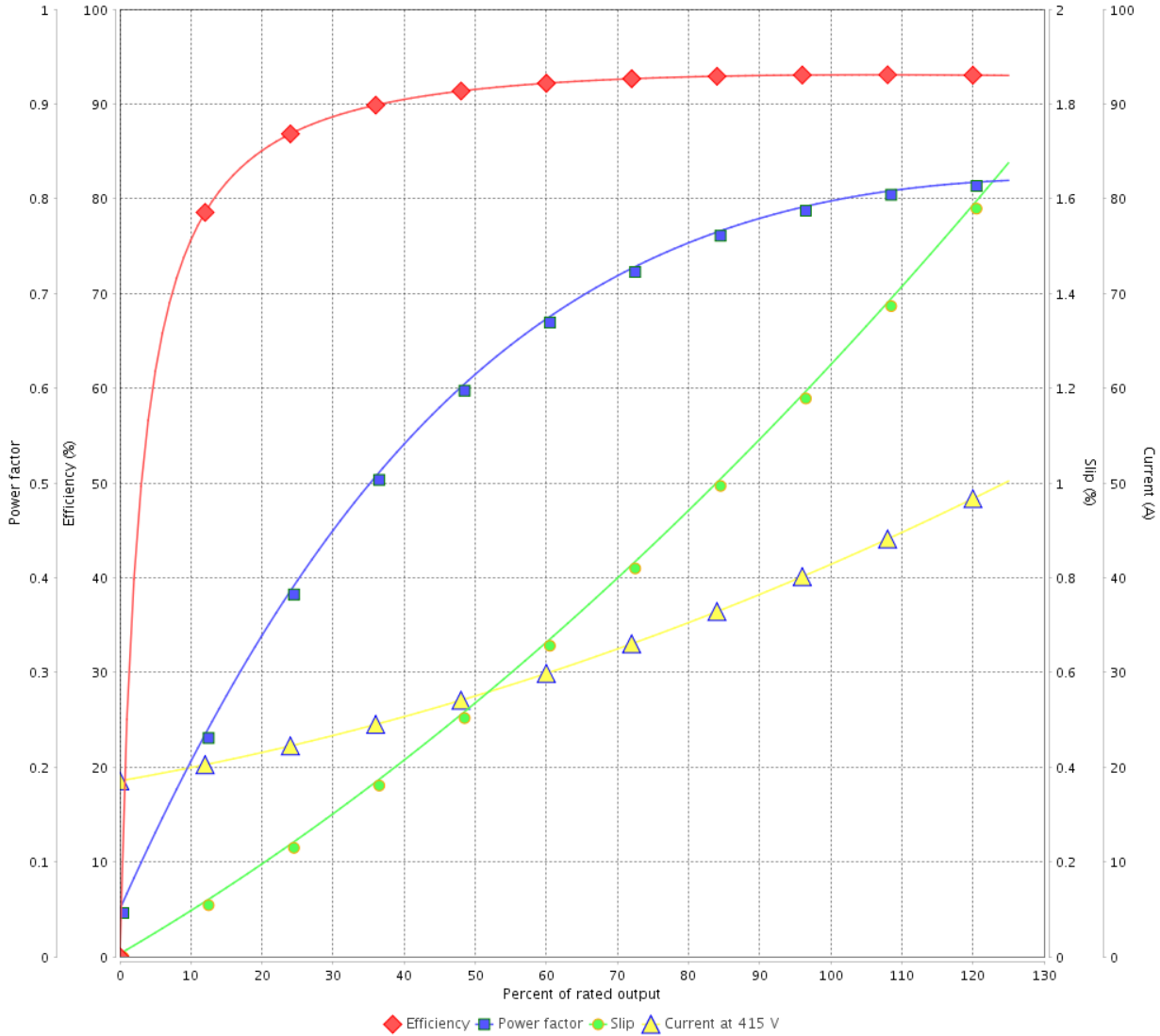
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Performance : 415 V 50 Hz 4P IE3

Rated current	: 41.1 A	Moment of inertia (J)	: 9.16 sq.ft.lb
LRC	: 7.7	Duty cycle	: Cont.(S1)
Rated torque	: 106 ft.lb	Insulation class	: F
Locked rotor torque	: 280 %	Service factor	: 1.00
Breakdown torque	: 310 %	Temperature rise	: 80 K
Rated speed	: 1481 rpm	Design	: B

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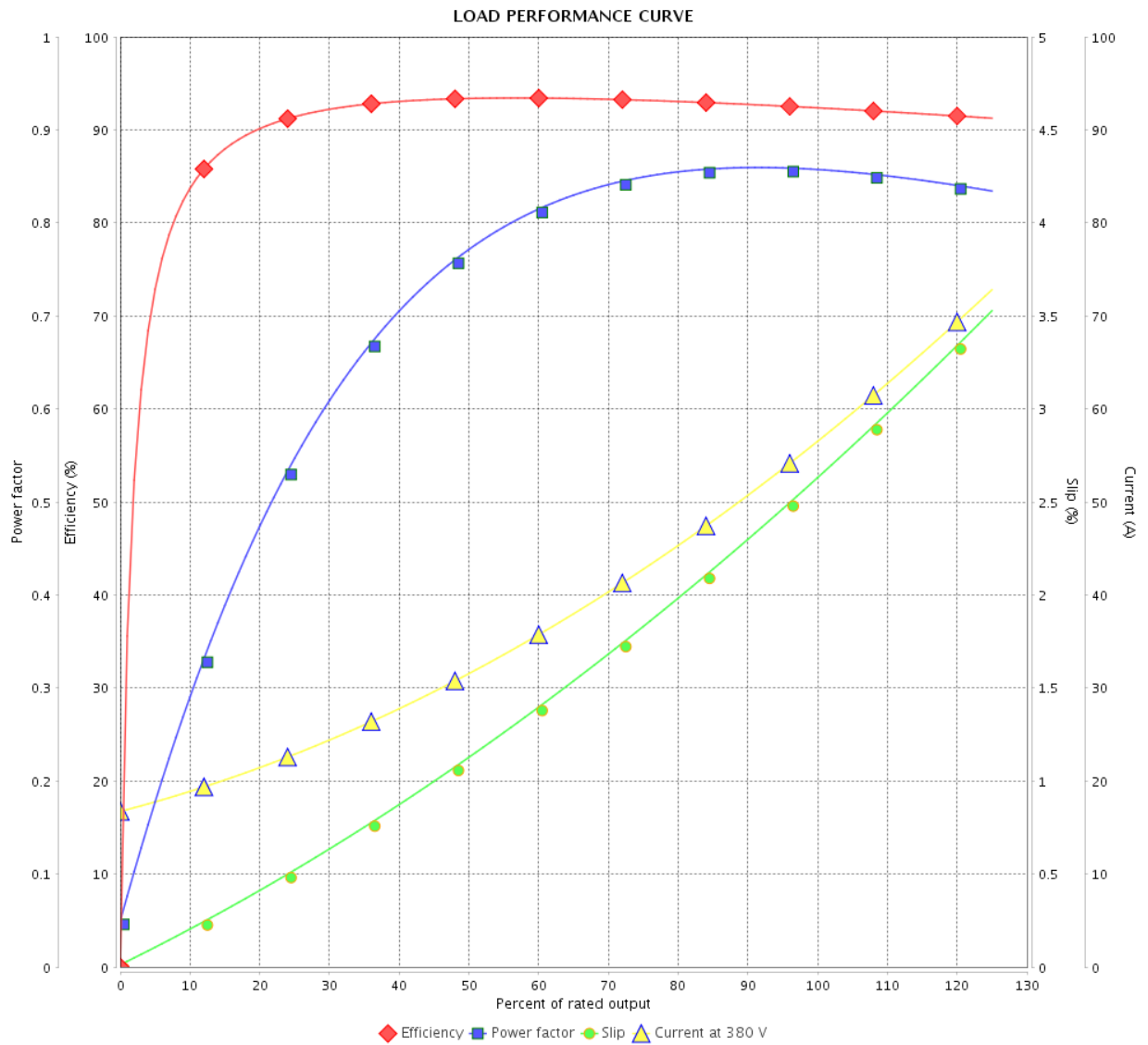


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Product line : NEMA Premium Efficiency Three-Phase

Product code : 12447812

Catalog # : 04018ST3QIE324T-W22



Performance : 380 V 50 Hz 4P IE2

Rated current : 57.4 A  
 LRC : 5.0  
 Rated torque : 144 ft.lb  
 Locked rotor torque : 170 %  
 Breakdown torque : 180 %  
 Rated speed : 1460 rpm

Moment of inertia (J) : 9.16 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 105 K  
 Design : B

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Three Phase Induction Motor - Squirrel Cage



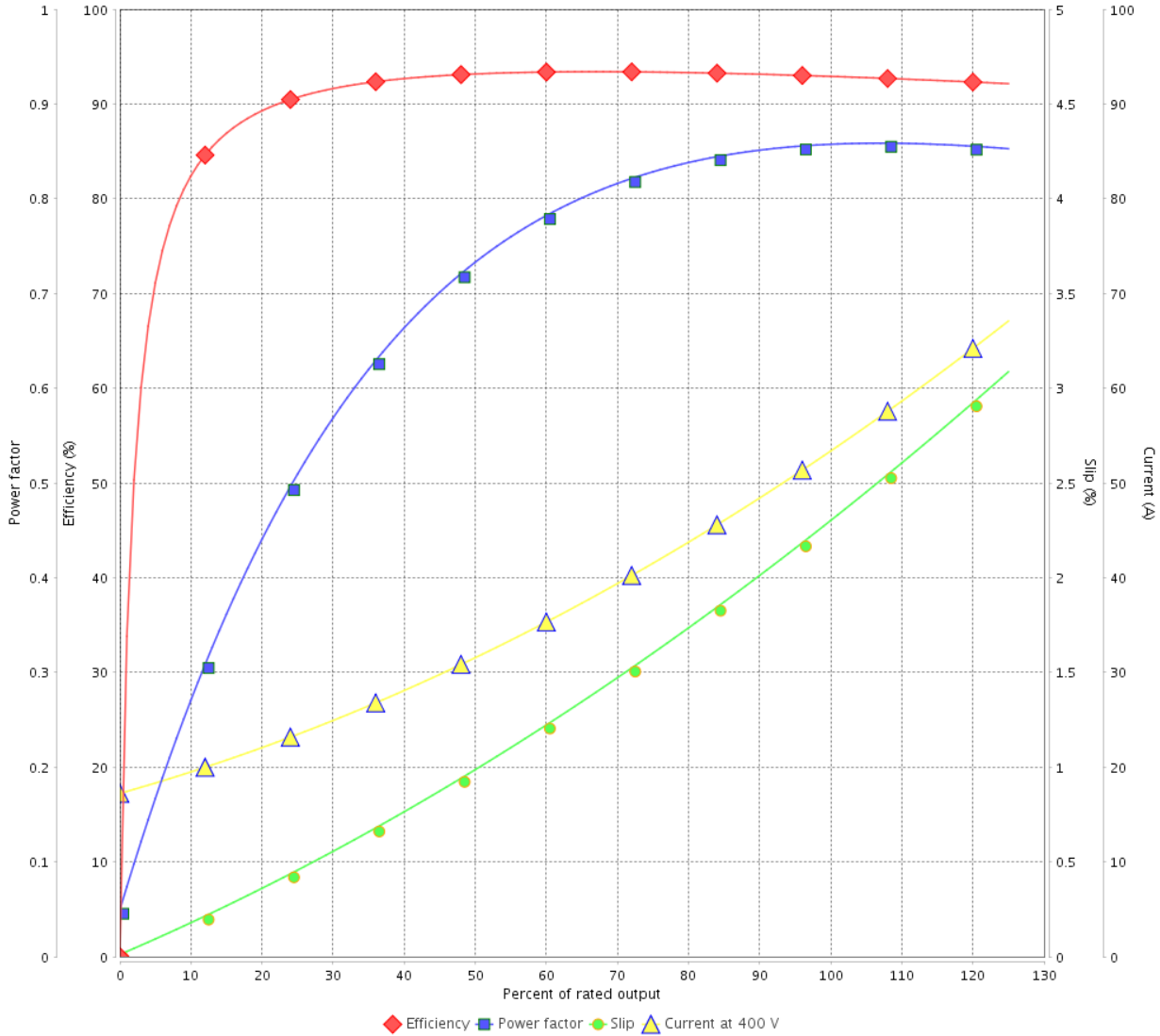
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LOAD PERFORMANCE CURVE



Performance : 400 V 50 Hz 4P IE2

Rated current : 54.1 A  
 LRC : 5.6  
 Rated torque : 143 ft.lb  
 Locked rotor torque : 190 %  
 Breakdown torque : 210 %  
 Rated speed : 1465 rpm

Moment of inertia (J) : 9.16 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 105 K  
 Design : B

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# LOAD PERFORMANCE CURVE

## Three Phase Induction Motor - Squirrel Cage

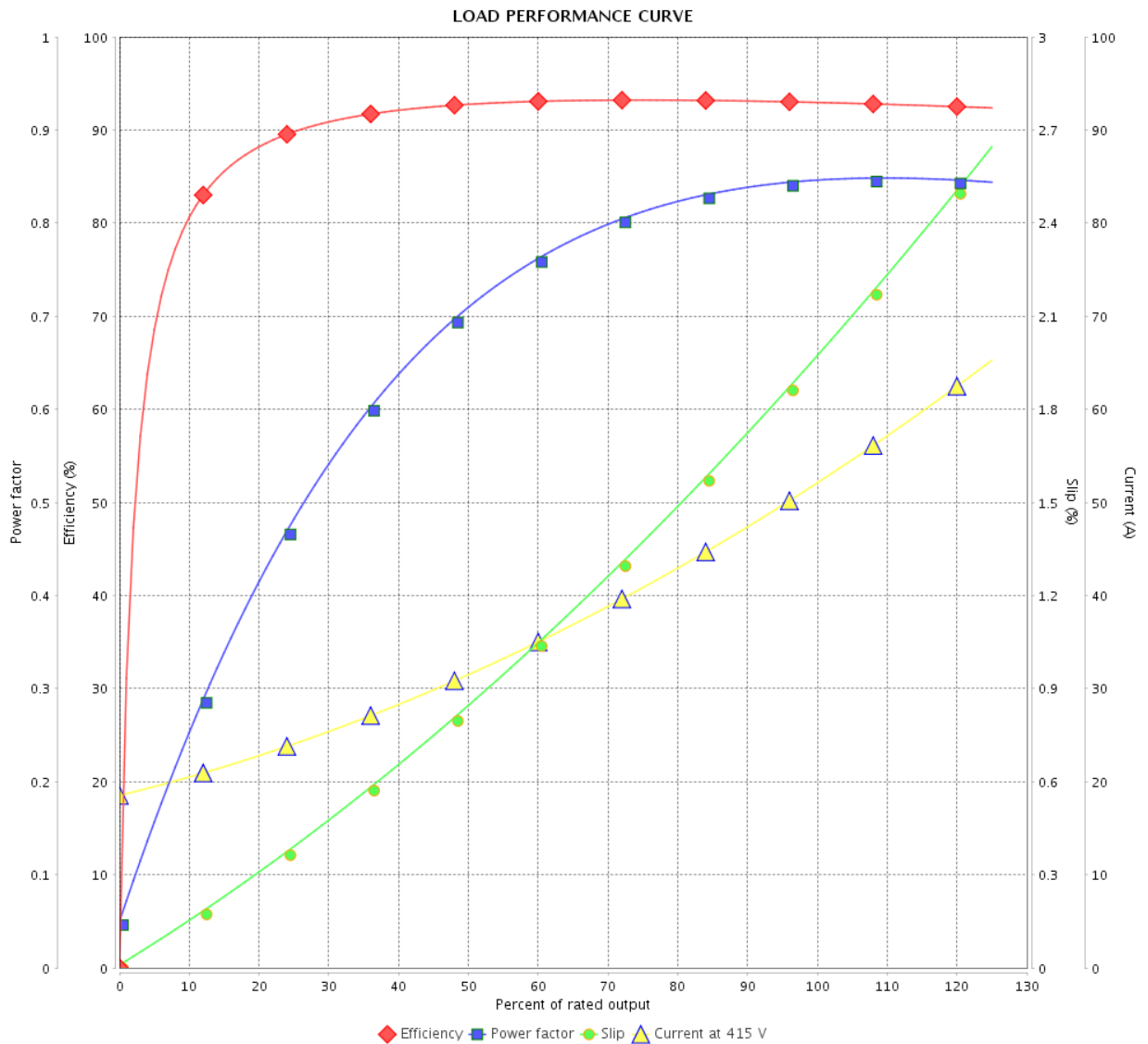


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Rated current : 52.8 A  
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 Rated torque : 143 ft.lb  
 Locked rotor torque : 210 %  
 Breakdown torque : 229 %  
 Rated speed : 1470 rpm

Moment of inertia (J) : 9.16 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 105 K  
 Design : B

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# THERMAL LIMIT CURVE



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Rated current : 47.1 A	Moment of inertia (J) : 9.16 sq.ft.lb
LRC : 6.1	Duty cycle : Cont.(S1)
Rated torque : 118 ft.lb	Insulation class : F
Locked rotor torque : 229 %	Service factor : 1.25
Breakdown torque : 240 %	Temperature rise : 80 K
Rated speed : 1775 rpm	Design : B

Heating constant

Cooling constant

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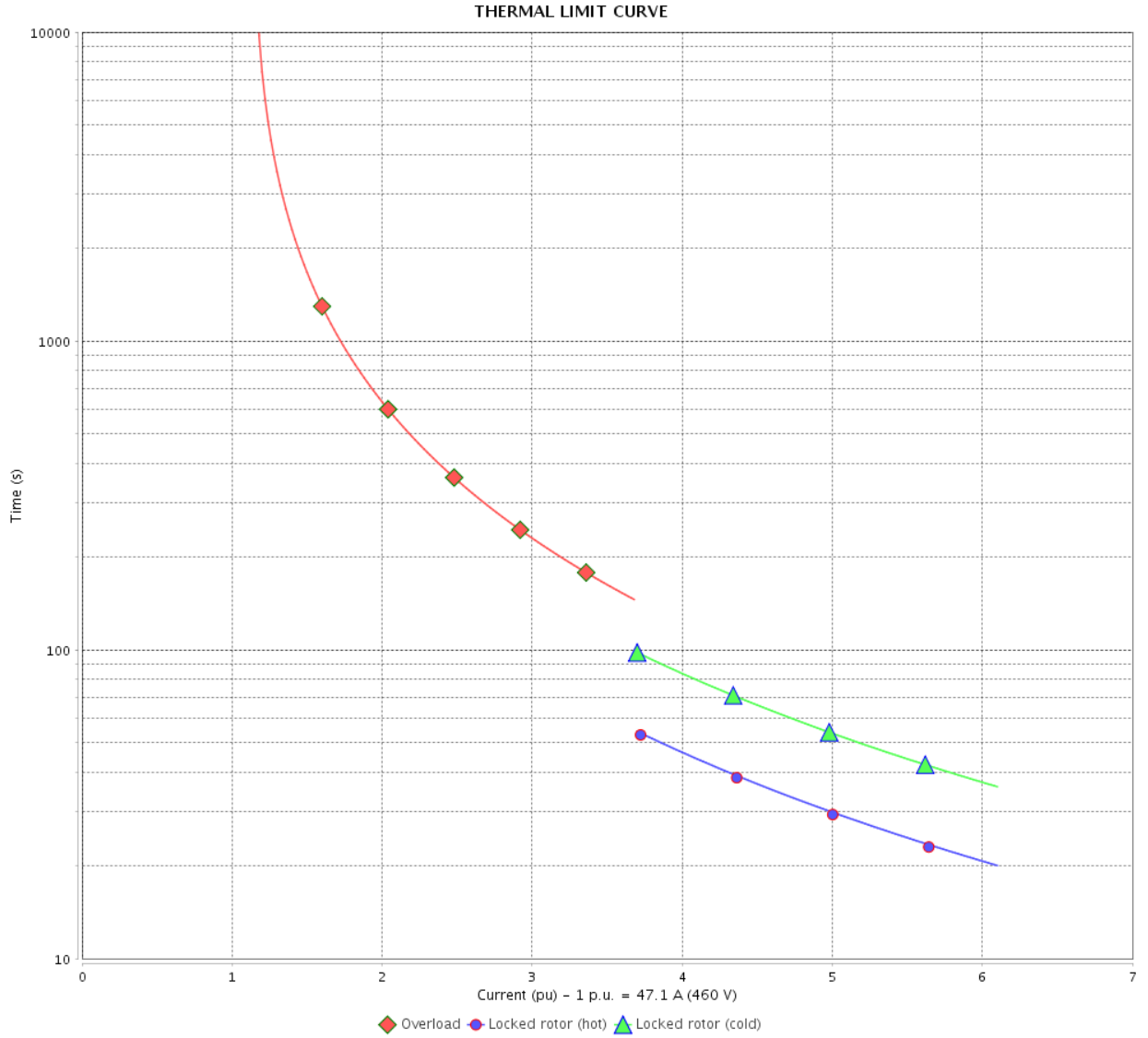


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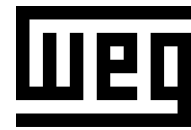


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Rated current	: 42.8 A	Moment of inertia (J)	: 9.16 sq.ft.lb
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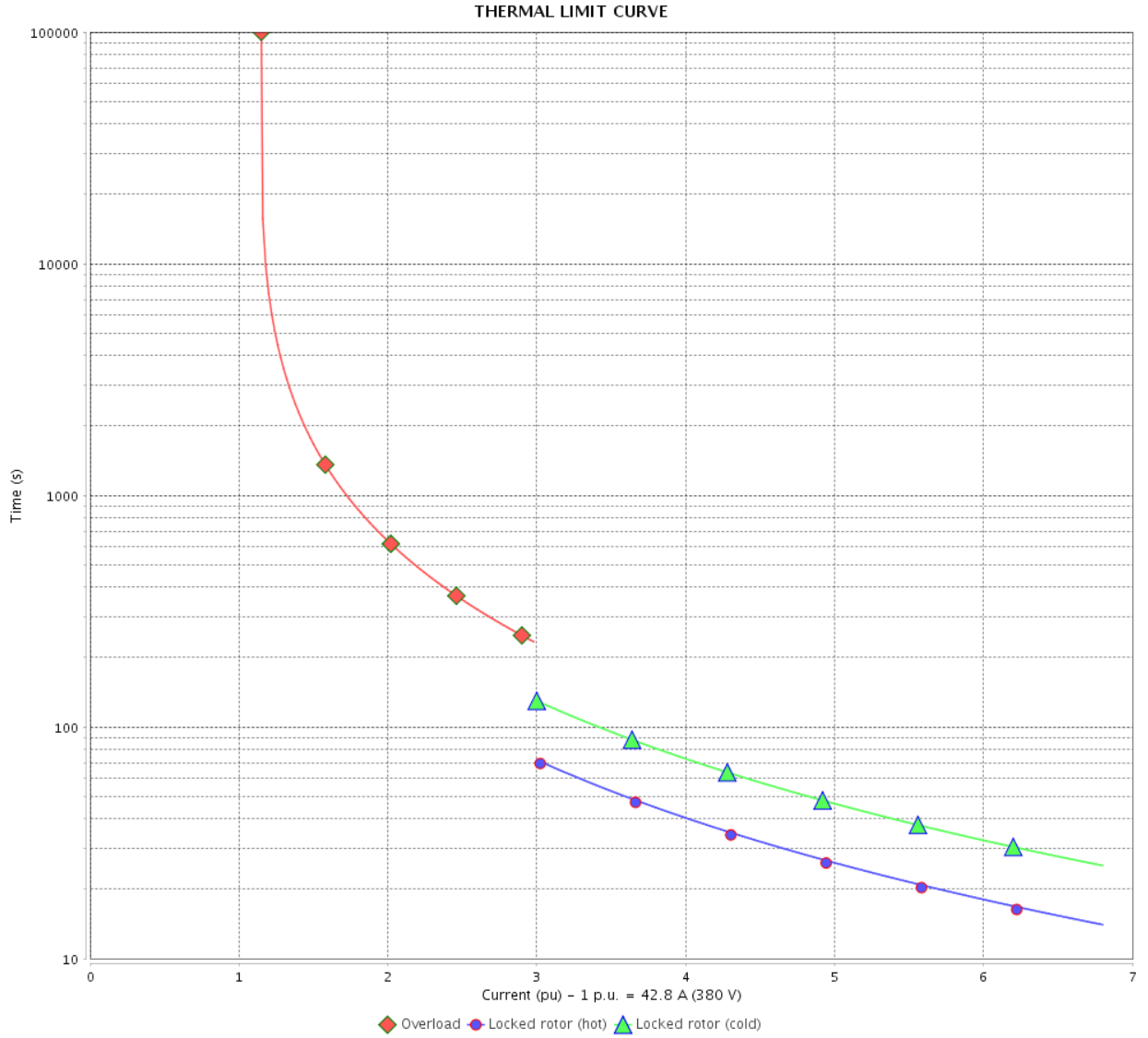
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Rated torque	: 106 ft.lb	Insulation class	: F
Locked rotor torque	: 270 %	Service factor	: 1.00
Breakdown torque	: 290 %	Temperature rise	: 80 K
Rated speed	: 1480 rpm	Design	: B

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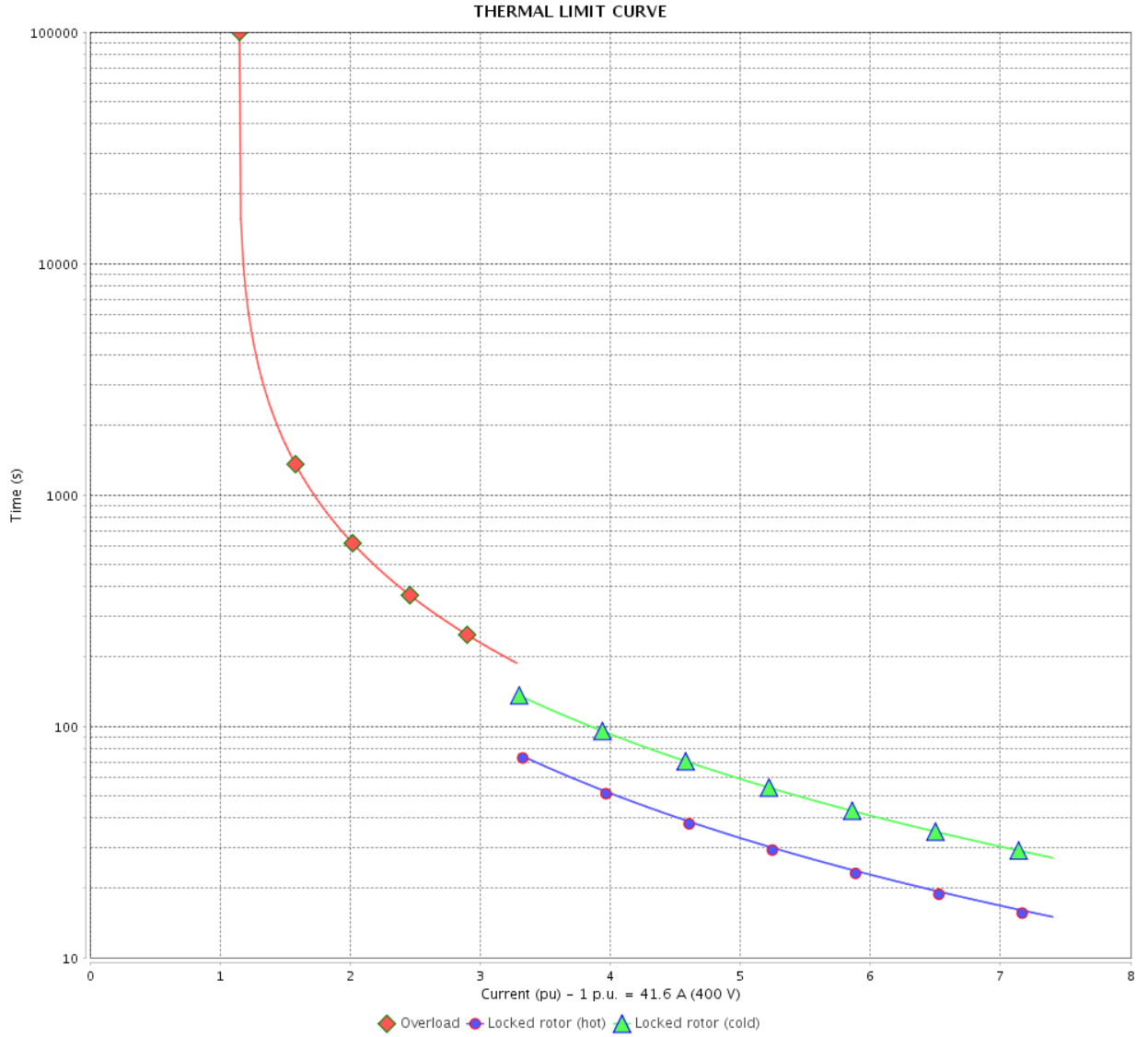
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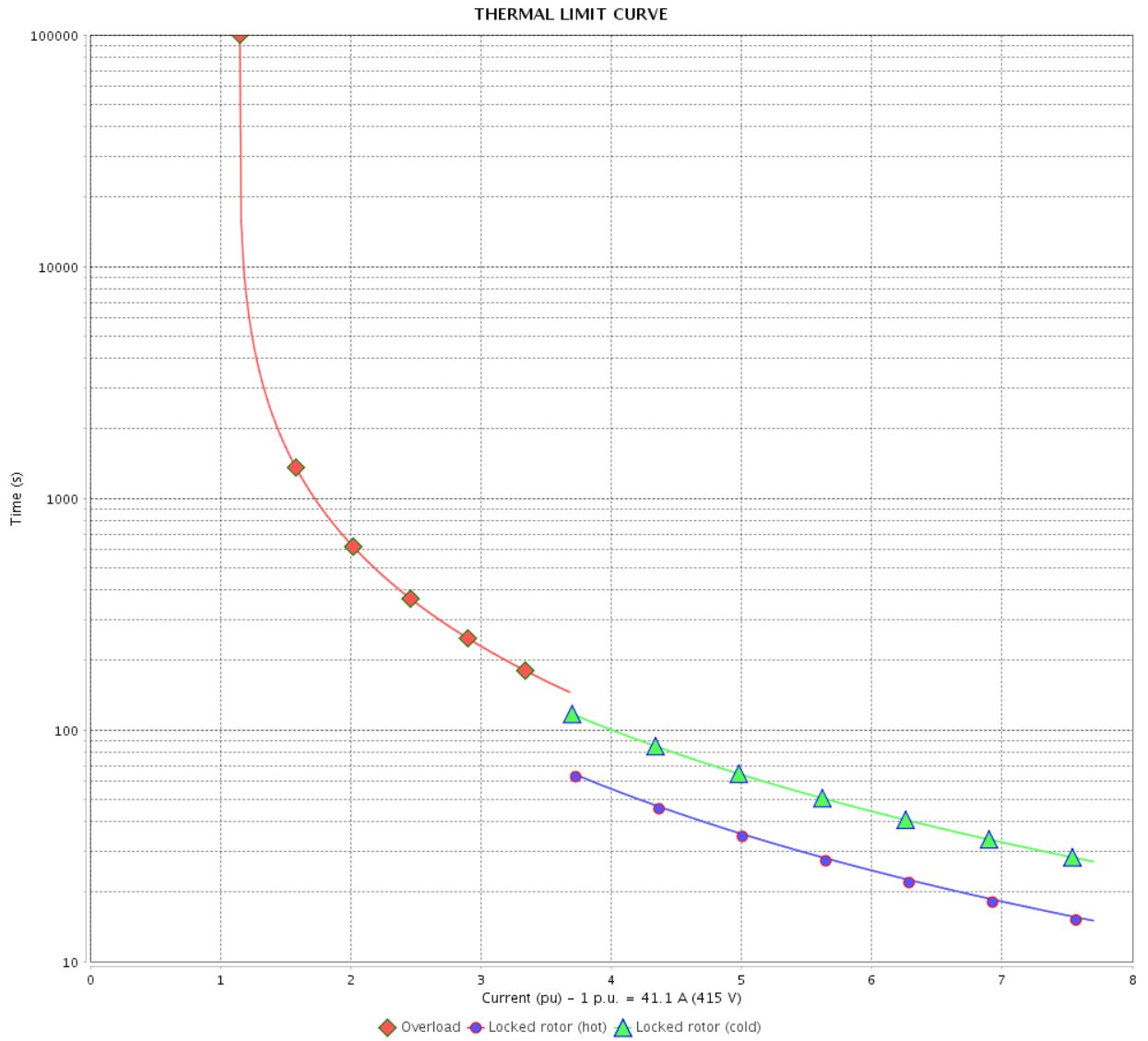
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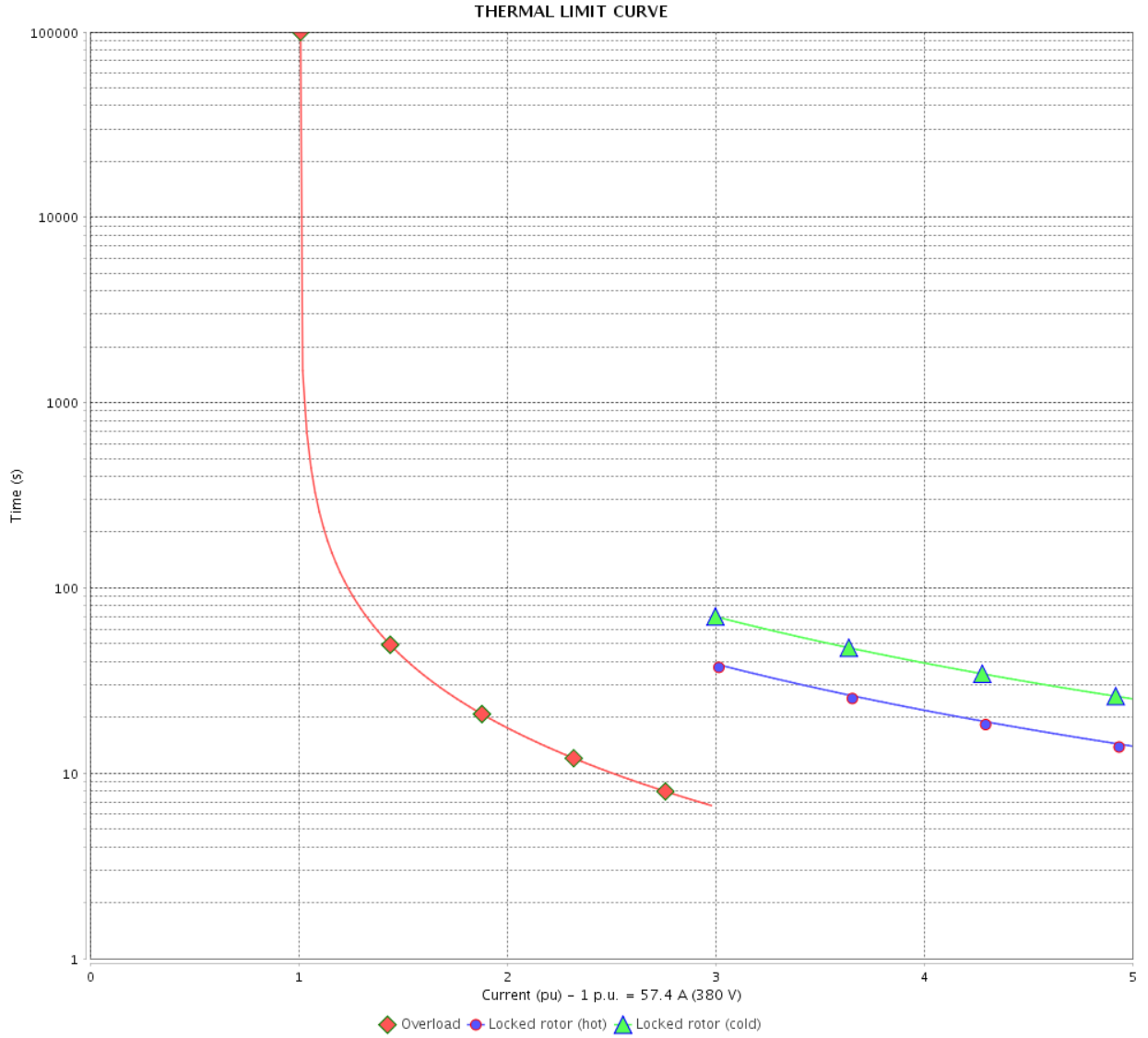


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Three Phase Induction Motor - Squirrel Cage

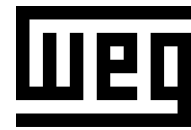


Customer : \_\_\_\_\_



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



## Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : NEMA Premium Efficiency Three-Phase  
 Product code : 12447812  
 Catalog # : 04018ST3QIE324T-W22

Performance : 400 V 50 Hz 4P IE2

Rated current : 54.1 A	Moment of inertia (J) : 9.16 sq.ft.lb
LRC : 5.6	Duty cycle : Cont.(S1)
Rated torque : 143 ft.lb	Insulation class : F
Locked rotor torque : 190 %	Service factor : 1.00
Breakdown torque : 210 %	Temperature rise : 105 K
Rated speed : 1465 rpm	Design : B

Heating constant

Cooling constant

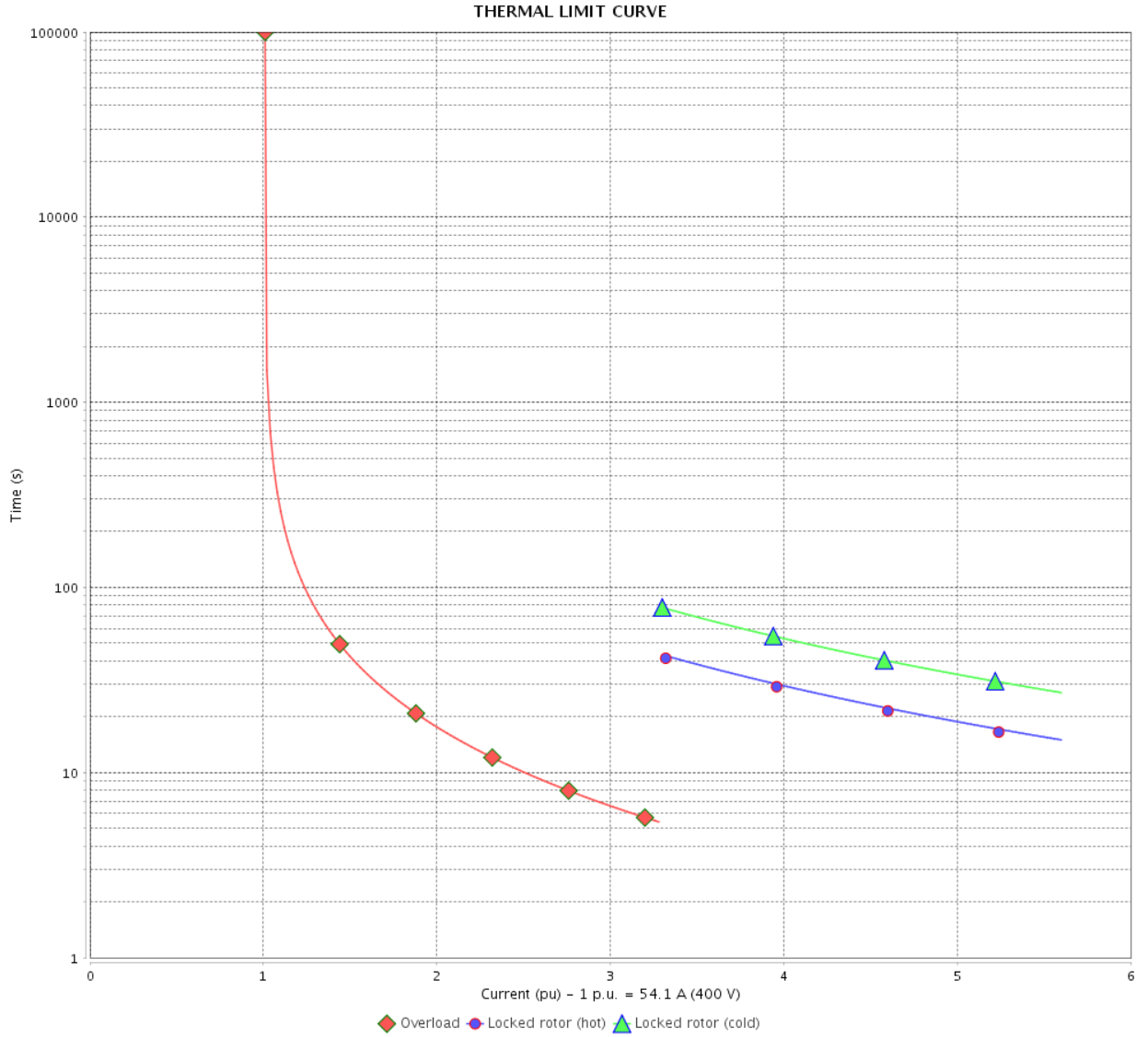
Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page 26 / 36	Revision
Checked by				
Date	12/04/2022			

# THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



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



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Performed by		Page 27 / 36		Revision
Checked by				
Date				

# THERMAL LIMIT CURVE



## Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : NEMA Premium Efficiency Three-Phase  
 Product code : 12447812  
 Catalog # : 04018ST3QIE324T-W22

Performance : 415 V 50 Hz 4P IE2

Rated current : 52.8 A	Moment of inertia (J) : 9.16 sq.ft.lb
LRC : 6.0	Duty cycle : Cont.(S1)
Rated torque : 143 ft.lb	Insulation class : F
Locked rotor torque : 210 %	Service factor : 1.00
Breakdown torque : 229 %	Temperature rise : 105 K
Rated speed : 1470 rpm	Design : B

Heating constant

Cooling constant

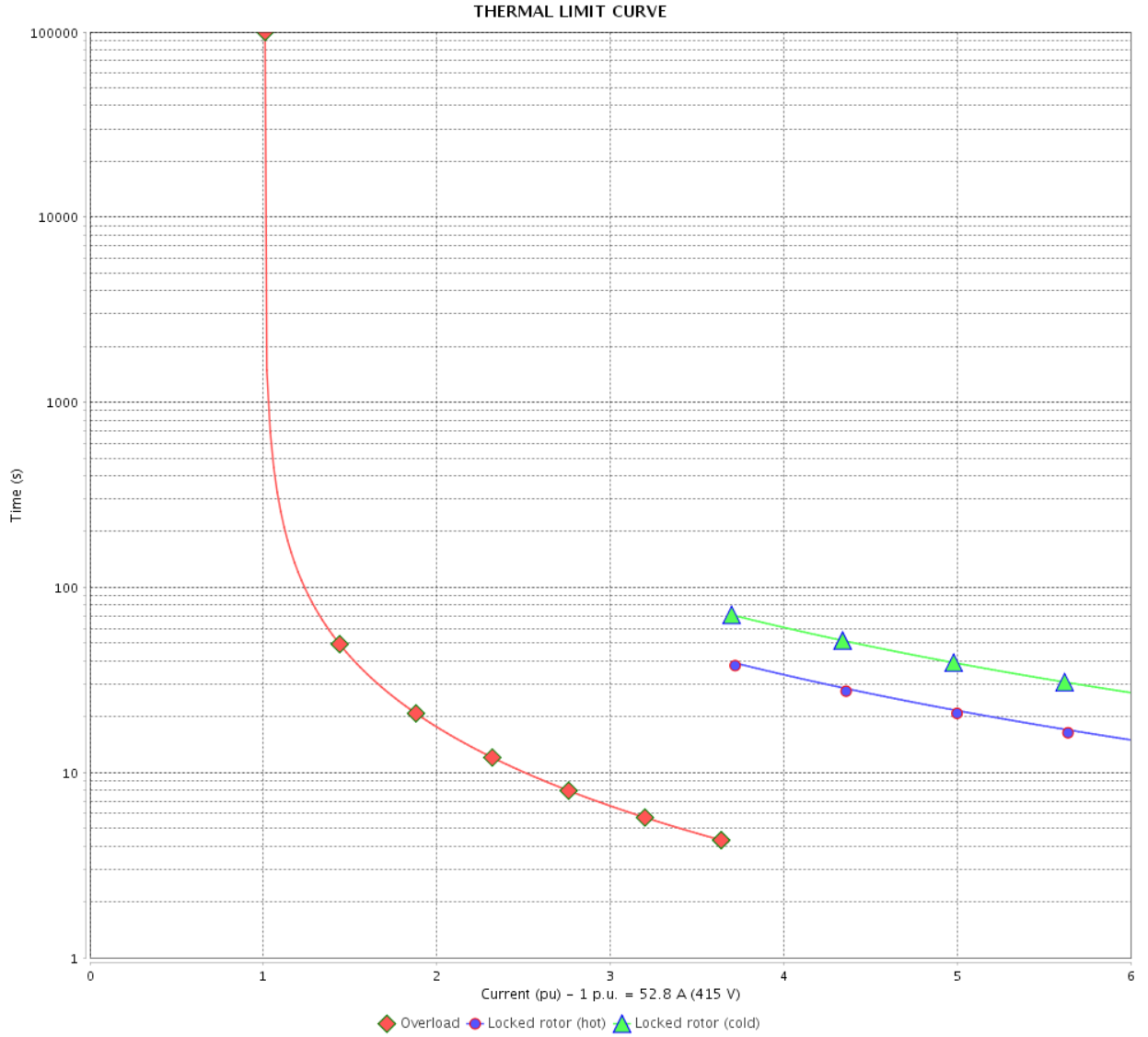
Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page 28 / 36	Revision
Checked by				
Date	12/04/2022			

# THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



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



Rev.	Changes Summary	Performed	Checked	Date
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Date		12/04/2022		

# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

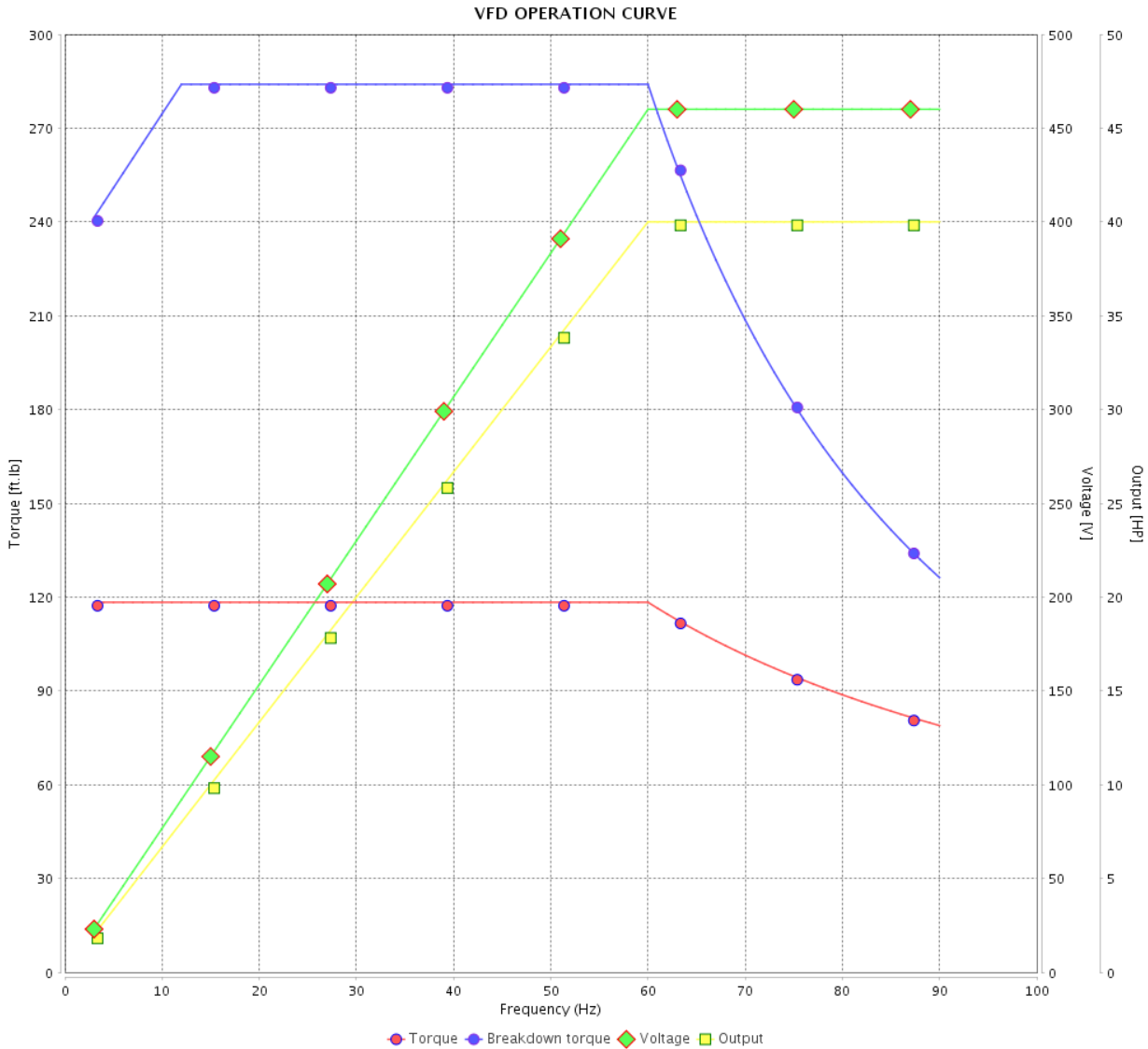


Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12447812

Catalog # : 04018ST3QIE324T-W22



Performance : 460 V 60 Hz 4P

Rated current	: 47.1 A	Moment of inertia (J)	: 9.16 sq.ft.lb
LRC	: 6.1	Duty cycle	: Cont.(S1)
Rated torque	: 118 ft.lb	Insulation class	: F
Locked rotor torque	: 229 %	Service factor	: 1.25
Breakdown torque	: 240 %	Temperature rise	: 80 K
Rated speed	: 1775 rpm	Design	: B

Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page 30 / 36	Revision
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Date	12/04/2022			

# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

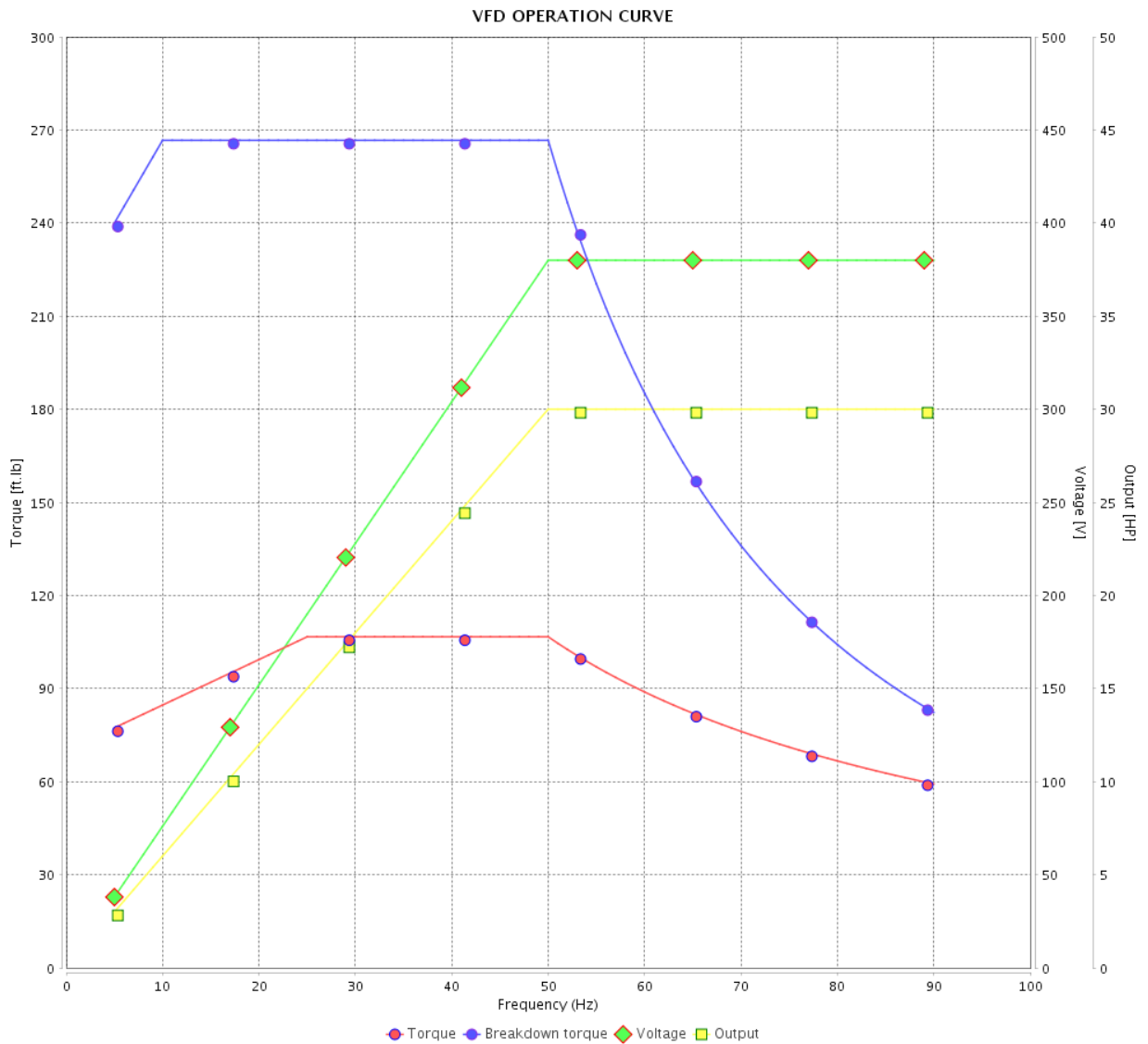


Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12447812

Catalog # : 04018ST3QIE324T-W22



Performance : 380 V 50 Hz 4P IE3

Rated current : 42.8 A  
 LRC : 6.8  
 Rated torque : 107 ft.lb  
 Locked rotor torque : 240 %  
 Breakdown torque : 250 %  
 Rated speed : 1477 rpm

Moment of inertia (J) : 9.16 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : B

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Date				
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# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage



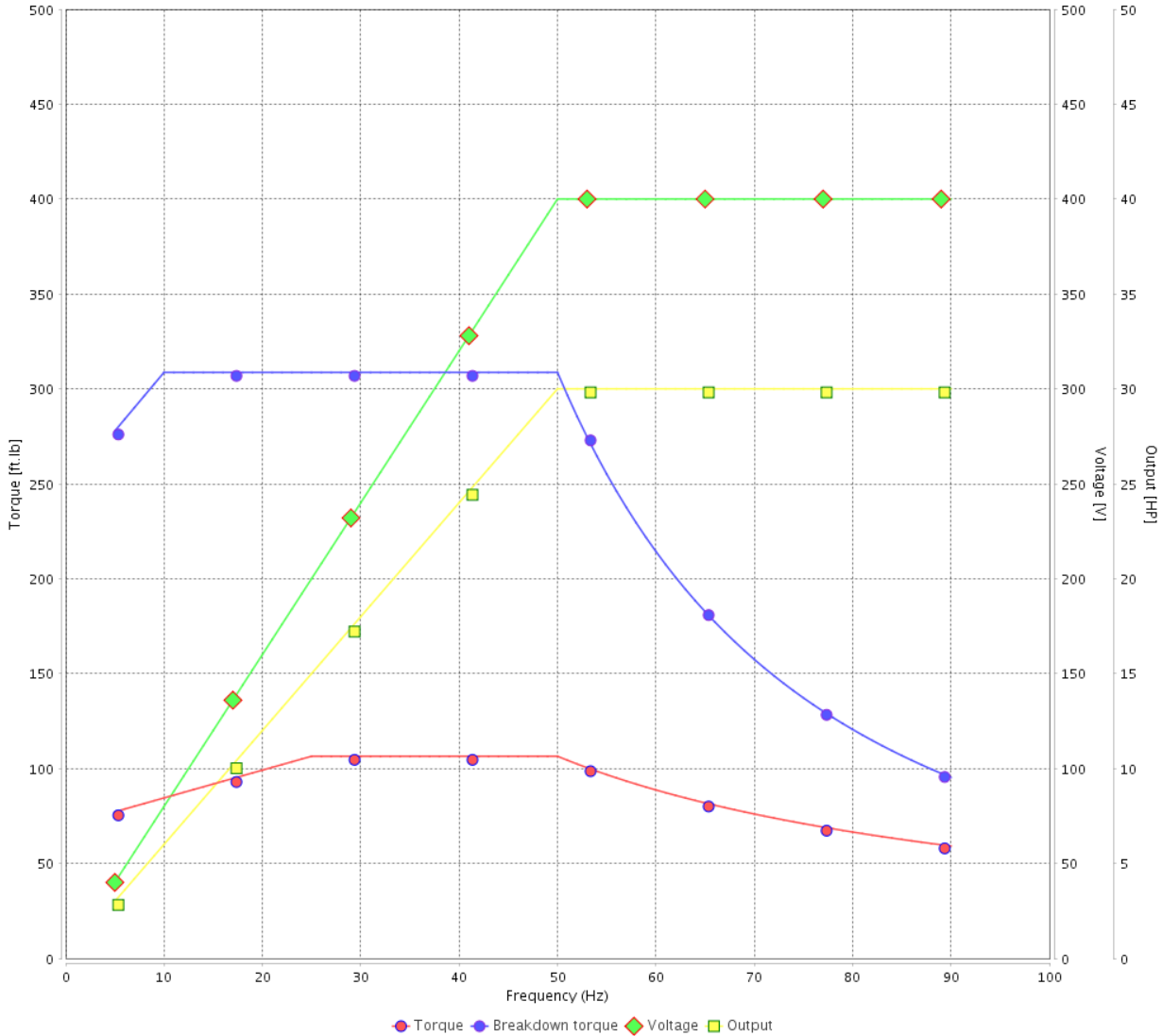
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12447812

Catalog # : 04018ST3QIE324T-W22

VFD OPERATION CURVE



Performance : 400 V 50 Hz 4P IE3

Rated current	: 41.6 A	Moment of inertia (J)	: 9.16 sq.ft.lb
LRC	: 7.4	Duty cycle	: Cont.(S1)
Rated torque	: 106 ft.lb	Insulation class	: F
Locked rotor torque	: 270 %	Service factor	: 1.00
Breakdown torque	: 290 %	Temperature rise	: 80 K
Rated speed	: 1480 rpm	Design	: B

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# VFD OPERATION CURVE

## Three Phase Induction Motor - Squirrel Cage

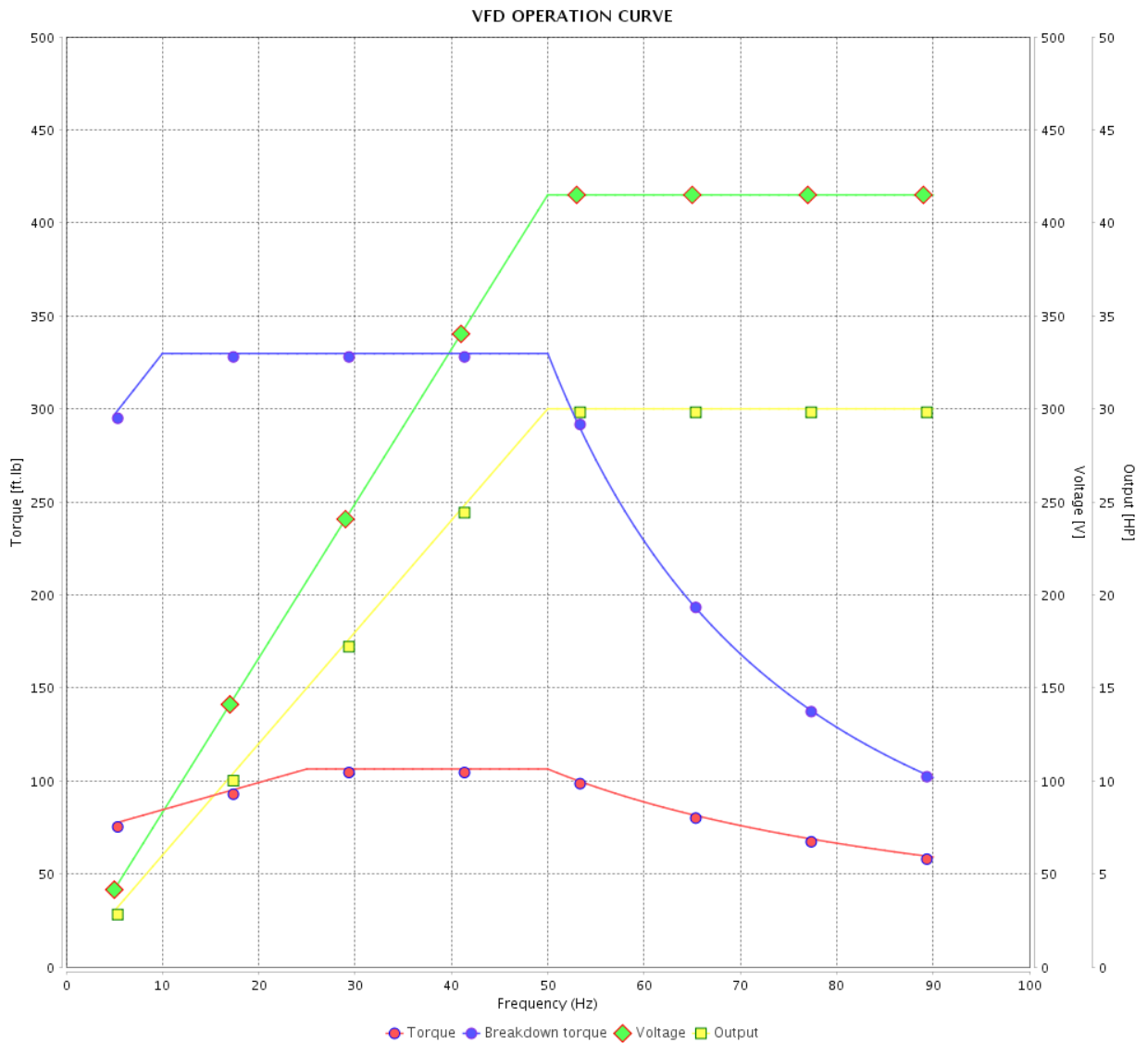


Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12447812

Catalog # : 04018ST3QIE324T-W22



Performance : 415 V 50 Hz 4P IE3

Rated current : 41.1 A  
 LRC : 7.7  
 Rated torque : 106 ft.lb  
 Locked rotor torque : 280 %  
 Breakdown torque : 310 %  
 Rated speed : 1481 rpm

Moment of inertia (J) : 9.16 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : B

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# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

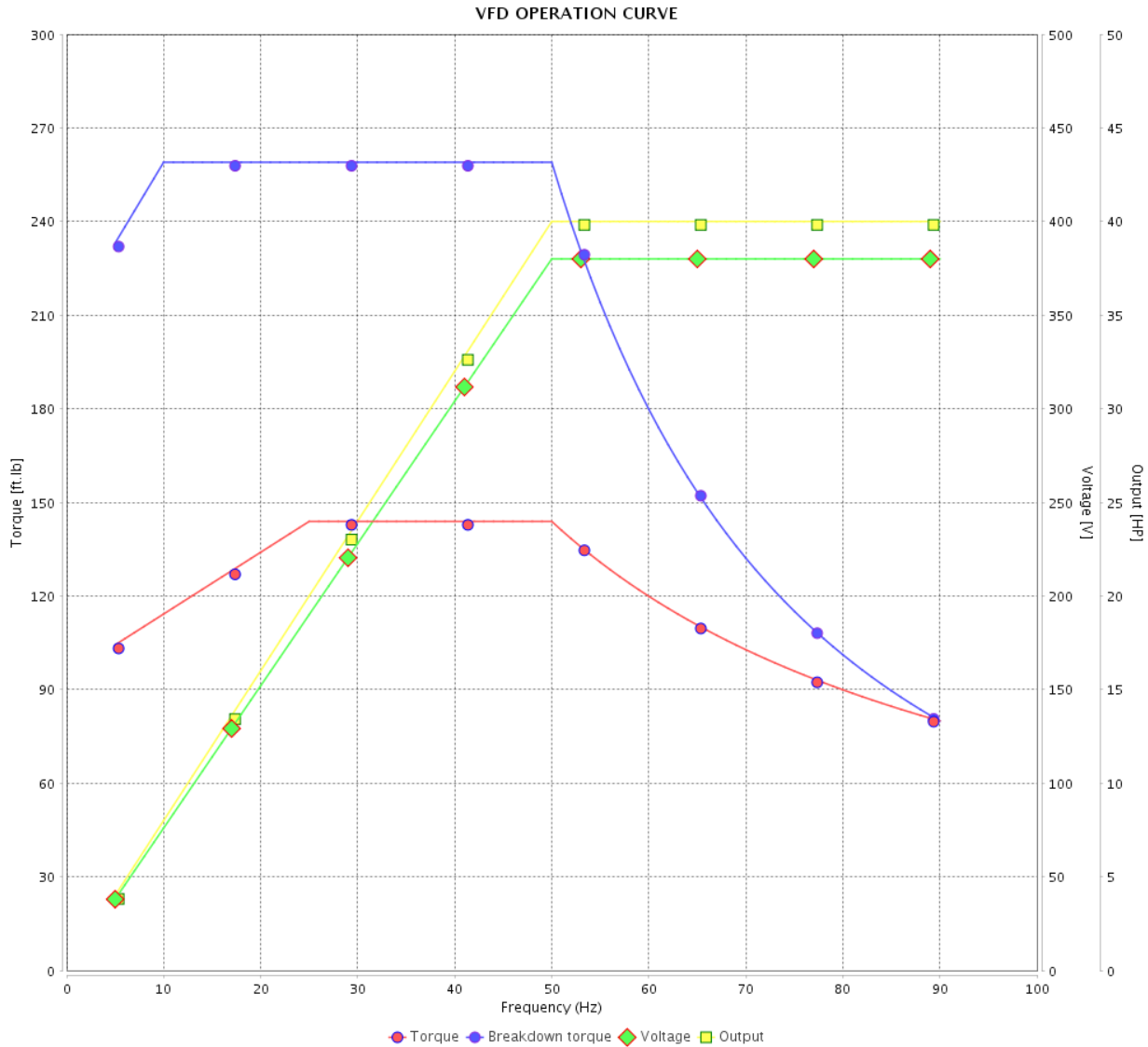


Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12447812

Catalog # : 04018ST3QIE324T-W22



Performance : 380 V 50 Hz 4P IE2

Rated current	: 57.4 A	Moment of inertia (J)	: 9.16 sq.ft.lb
LRC	: 5.0	Duty cycle	: Cont.(S1)
Rated torque	: 144 ft.lb	Insulation class	: F
Locked rotor torque	: 170 %	Service factor	: 1.00
Breakdown torque	: 180 %	Temperature rise	: 105 K
Rated speed	: 1460 rpm	Design	: B

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Date	12/04/2022			

# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

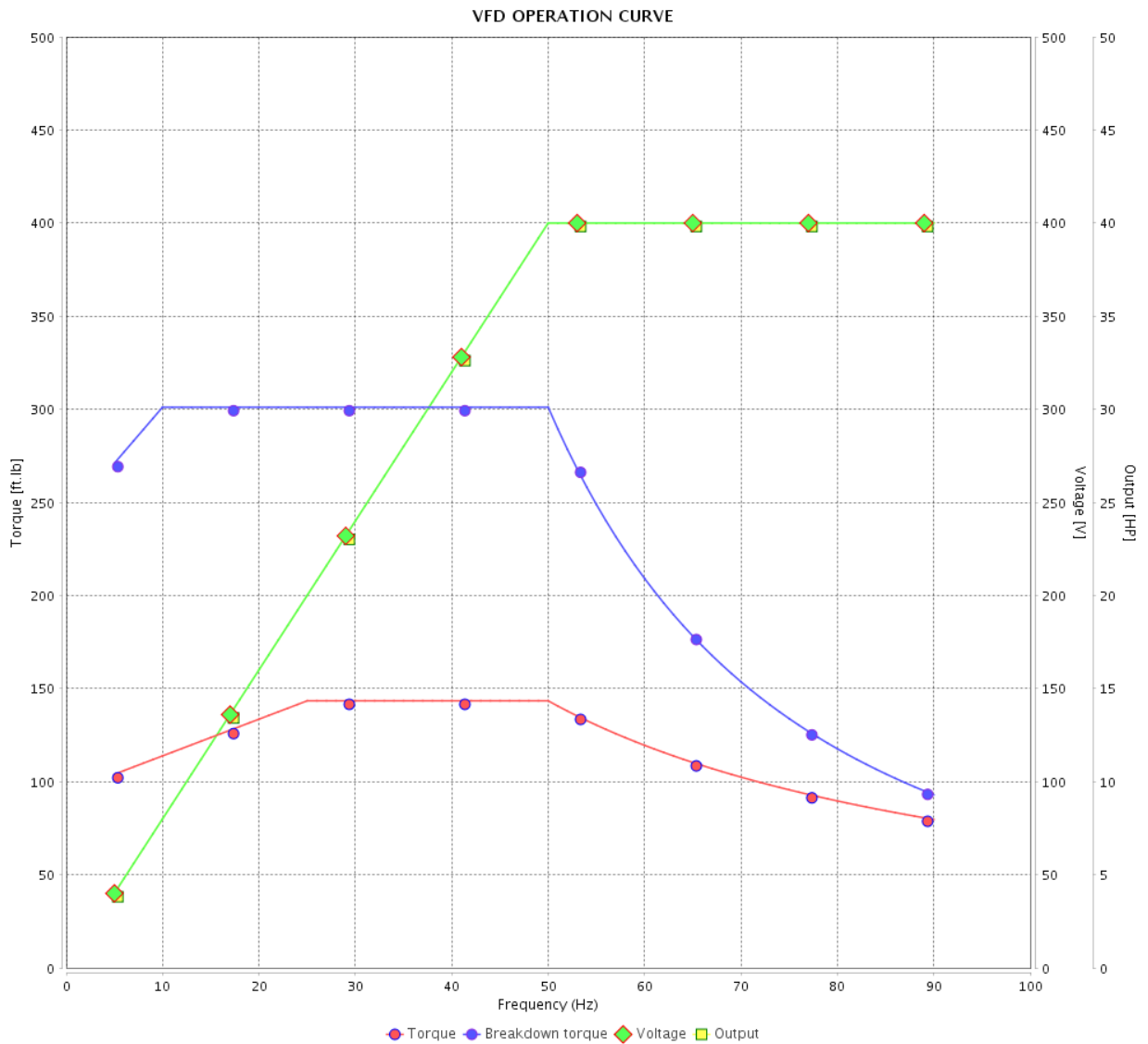


Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12447812

Catalog # : 04018ST3QIE324T-W22



Performance : 400 V 50 Hz 4P IE2

Rated current : 54.1 A  
 LRC : 5.6  
 Rated torque : 143 ft.lb  
 Locked rotor torque : 190 %  
 Breakdown torque : 210 %  
 Rated speed : 1465 rpm

Moment of inertia (J) : 9.16 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 105 K  
 Design : B

Rev.	Changes Summary	Performed	Checked	Date
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# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage



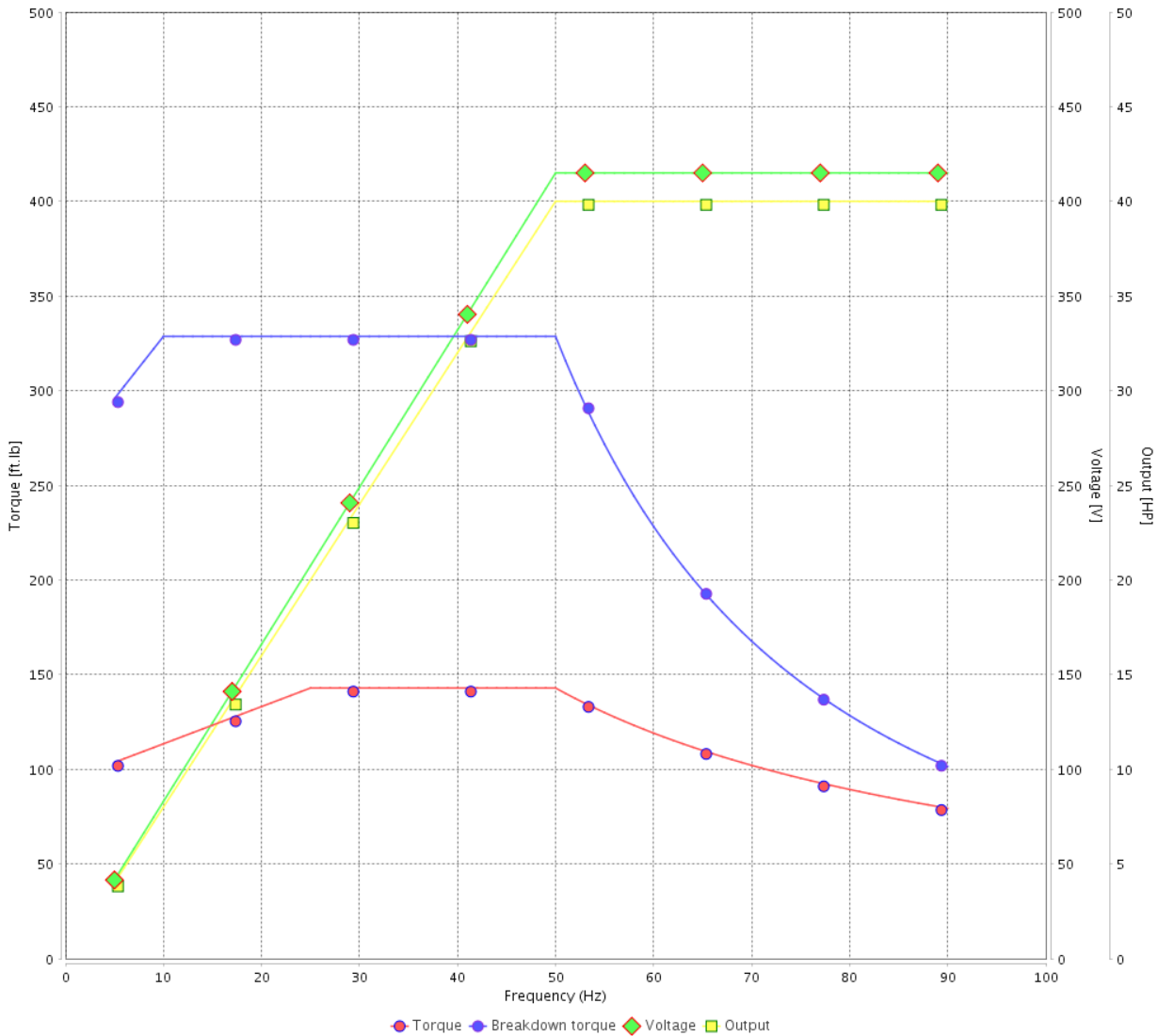
Customer : \_\_\_\_\_

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12447812

Catalog # : 04018ST3QIE324T-W22

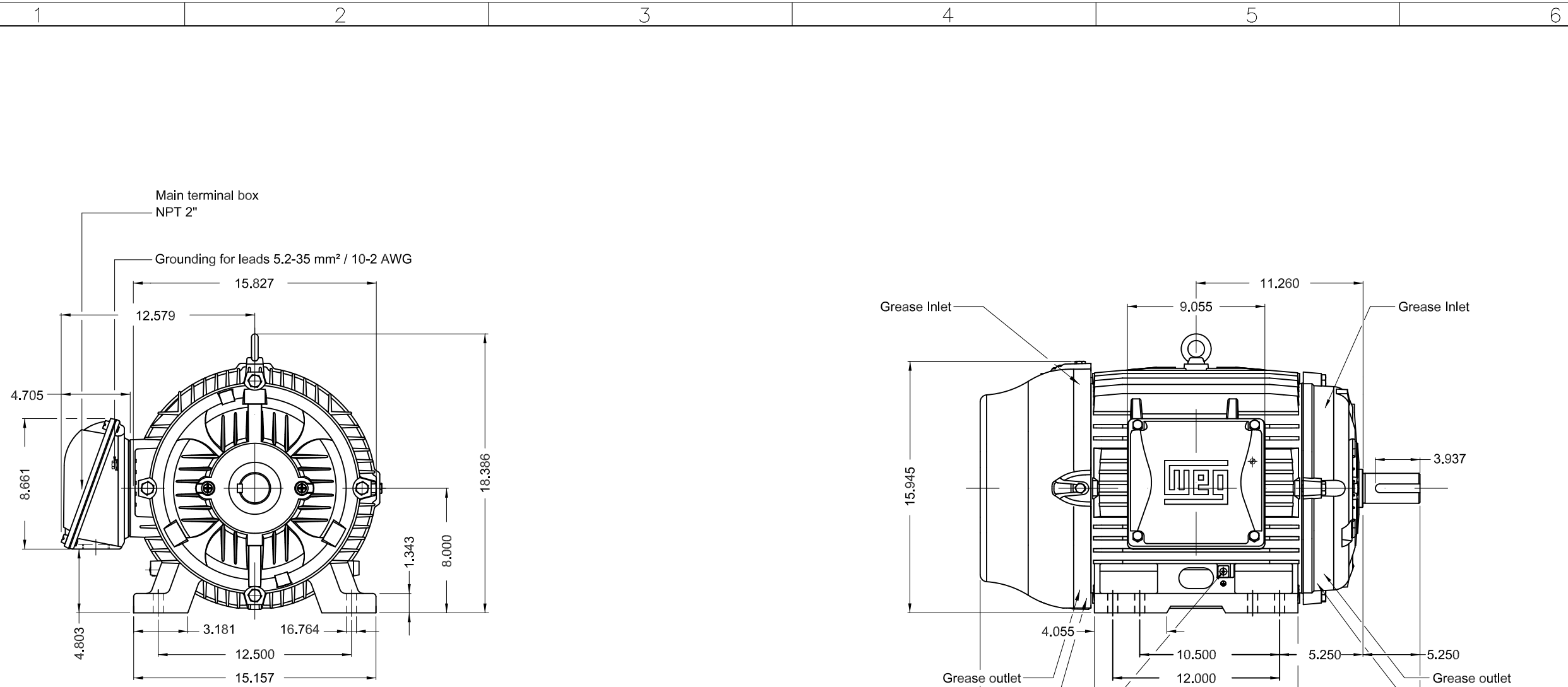
VFD OPERATION CURVE



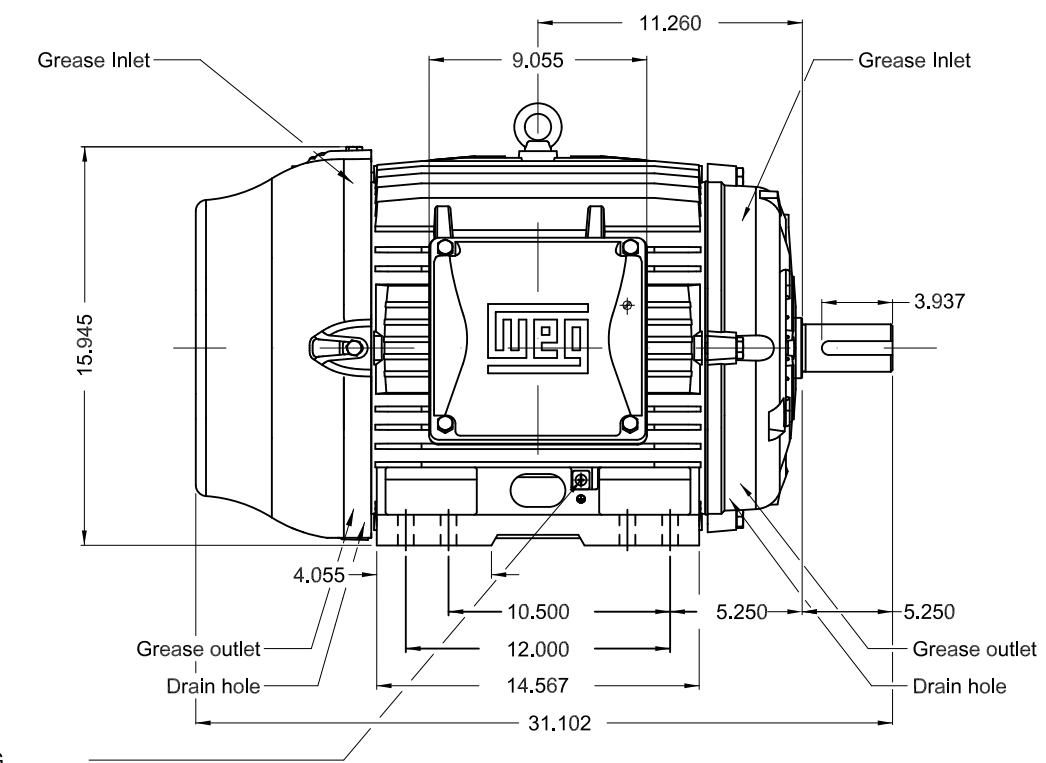
Performance : 415 V 50 Hz 4P IE2

Rated current	: 52.8 A	Moment of inertia (J)	: 9.16 sq.ft.lb
LRC	: 6.0	Duty cycle	: Cont.(S1)
Rated torque	: 143 ft.lb	Insulation class	: F
Locked rotor torque	: 210 %	Service factor	: 1.00
Breakdown torque	: 229 %	Temperature rise	: 105 K
Rated speed	: 1470 rpm	Design	: B

Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page 36 / 36	Revision
Checked by				
Date	12/04/2022			

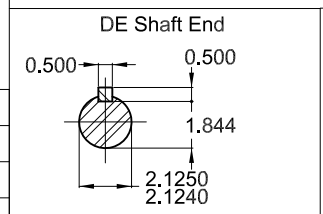


Grounding for leads 5.2-35 mm<sup>2</sup> / 10-2 AWG



40 HP 04 Poles 60 Hz A

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



ECM	LOC	SUMMARY OF MODIFICATIONS	EXECUTED	CHECKED	RELEASED	DATE	VER
EXECUTED	PIRWBUSER	THREE PH. MOTOR IEEE 841 W22 PREM. EFF.					
CHECKED		FRAME 324/6T IP55 TEFC					
RELEASED							
REL DT.	WMO	Jaragua do Sul	Product Engineering				

**PREVIEW**  
**WDD**

**WEG**

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