

DATA SHEET



Three Phase Induction Motor - Squirrel Cage

Customer								
Product line	: W40 NEMA Premium Efficiency Three-Phase	Product code	: 13346174					
		Catalog #	: 50036OT3G447/9TS-W40					
Frame	: 447/9TS	Cooling method	: IC01 - ODP					
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	: 2203 lb					
Protection degree	: IP23	Moment of inertia (J)	: 46.9 sq.ft.lb					
Design	: A							
Output [HP]	500	400	400	400	450	450	450	
Poles	2	2	2	2	2	2	2	
Frequency [Hz]	60	50	50	50	50	50	50	
Rated voltage [V]	460	380	400	415	380	400	415	
Rated current [A]	536	529	508	495	582	559	545	
L. R. Amperes [A]	3806	3756	4013	4356	3667	3913	4251	
LRC [A]	7.1x(Code G)	7.1x(Code G)	7.9x(Code H)	8.8x(Code J)	6.3x(Code F)	7.0x(Code G)	7.8x(Code H)	
No load current [A]	120	115	130	150	115	130	150	
Rated speed [RPM]	3570	2970	2975	2975	2965	2970	2975	
Slip [%]	0.83	1.00	0.83	0.83	1.17	1.00	0.83	
Rated torque [ft.lb]	735	707	706	706	797	796	794	
Locked rotor torque [%]	190	200	229	250	180	200	220	
Breakdown torque [%]	250	250	270	290	220	240	260	
Service factor	1.15	1.15	1.15	1.15	1.15	1.15	1.15	
Temperature rise	80 K	80 K	80 K	80 K	80 K	80 K	80 K	
Locked rotor time	25s (cold) 14s (hot)	21s (cold) 12s (hot)	21s (cold) 12s (hot)	21s (cold) 12s (hot)	21s (cold) 12s (hot)	21s (cold) 12s (hot)	21s (cold) 12s (hot)	
Noise level ²	87.0 dB(A)	81.0 dB(A)	81.0 dB(A)	81.0 dB(A)	81.0 dB(A)	81.0 dB(A)	81.0 dB(A)	
Efficiency (%)	25%	95.7	93.6	93.5	93.5	94.2	94.2	94.2
	50%	95.8	94.3	94.2	94.2	95.0	95.0	95.0
	75%	96.2	95.2	95.2	95.2	95.0	95.0	95.0
	100%	96.2	95.8	95.8	95.8	95.8	95.8	95.8
Power Factor	25%	0.62	0.61	0.57	0.53	0.65	0.60	0.57
	50%	0.84	0.82	0.79	0.77	0.85	0.82	0.80
	75%	0.89	0.89	0.87	0.86	0.89	0.88	0.87
	100%	0.90	0.90	0.89	0.88	0.90	0.89	0.88
Bearing type	: 6314 C3	Drive end	Non drive end	Foundation loads				
Sealing	: Without	Without	Without	Max. traction	: 4404 lb			
		Bearing Seal	Bearing Seal	Max. compression	: 6607 lb			
Lubrication interval	: 14418 h	14418 h	14418 h					
Lubricant amount	: 27 g	27 g	27 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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Thermal protection

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

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TORQUE AND CURRENT VS SPEED CURVE



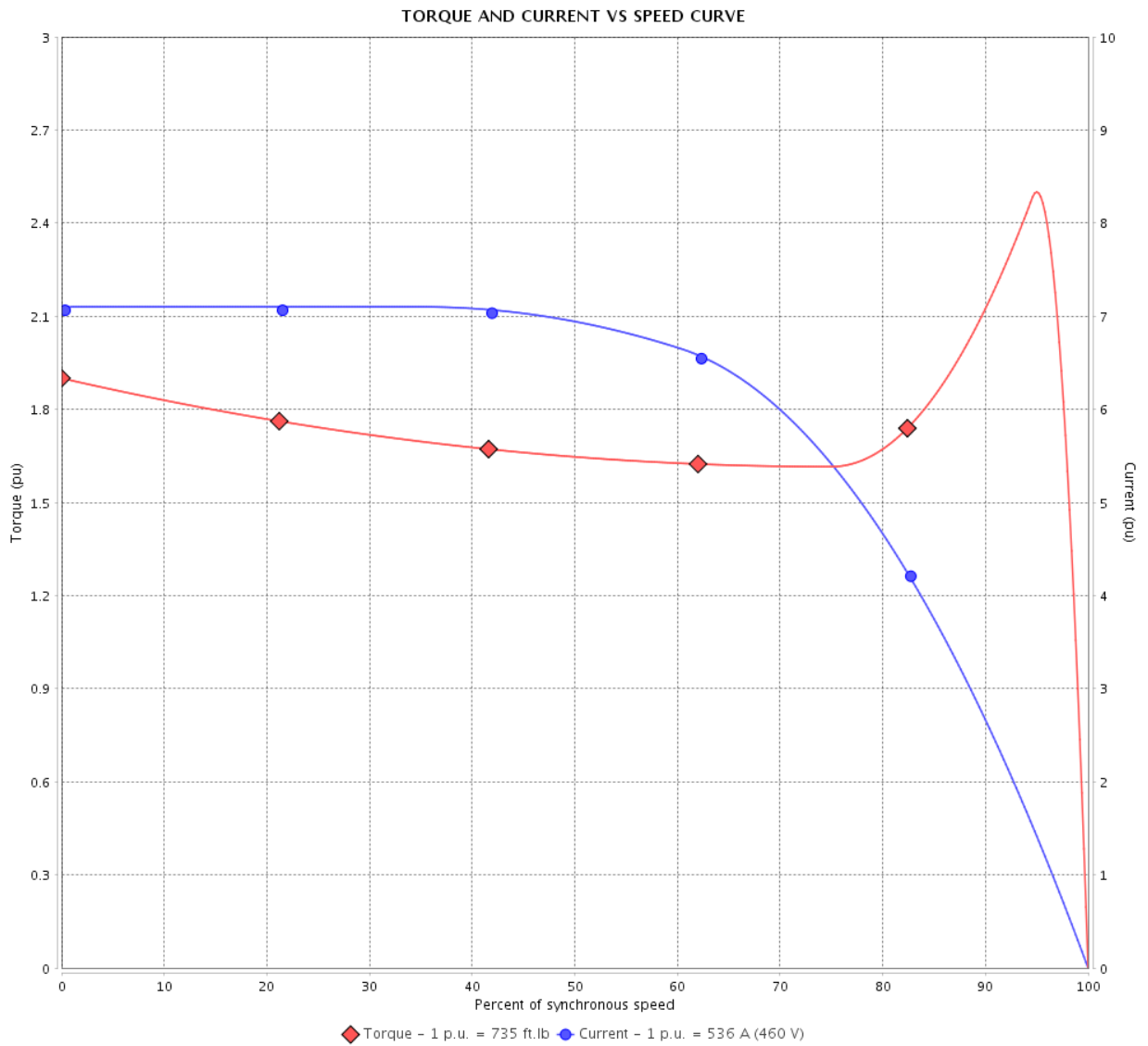
Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : W40 NEMA Premium Efficiency
Three-Phase

Product code : 13346174

Catalog # : 50036OT3G447/9TS-W40



Performance : 460 V 60 Hz 2P

Rated current	: 536 A	Moment of inertia (J)	: 46.9 sq.ft.lb
LRC	: 7.1	Duty cycle	: Cont.(S1)
Rated torque	: 735 ft.lb	Insulation class	: F
Locked rotor torque	: 190 %	Service factor	: 1.15
Breakdown torque	: 250 %	Temperature rise	: 80 K
Rated speed	: 3570 rpm	Design	: A

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

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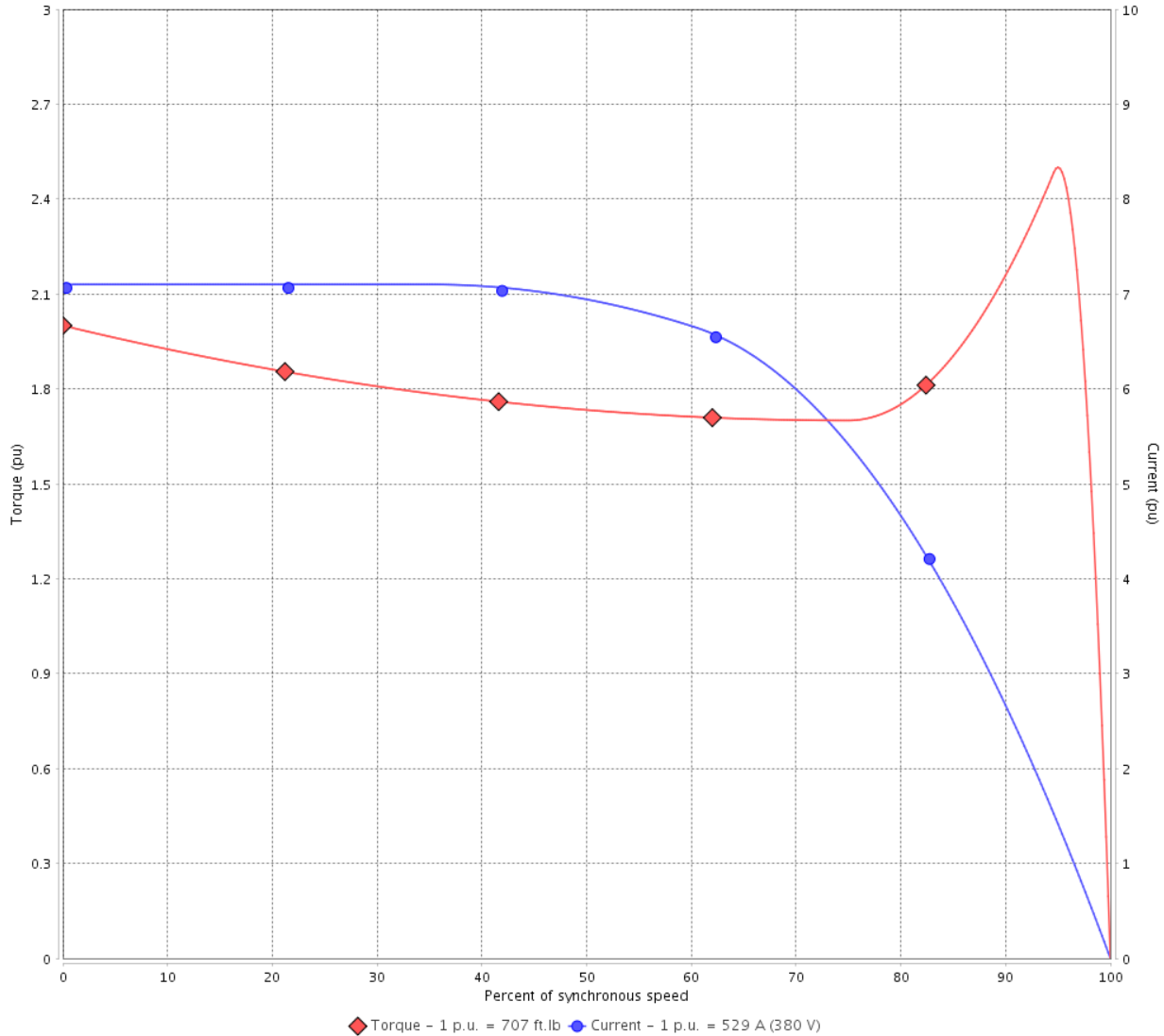
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TORQUE AND CURRENT VS SPEED CURVE



Performance : 380 V 50 Hz 2P IE3

Rated current	: 529 A	Moment of inertia (J)	: 46.9 sq.ft.lb
LRC	: 7.1	Duty cycle	: Cont.(S1)
Rated torque	: 707 ft.lb	Insulation class	: F
Locked rotor torque	: 200 %	Service factor	: 1.15
Breakdown torque	: 250 %	Temperature rise	: 80 K
Rated speed	: 2970 rpm	Design	: A

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

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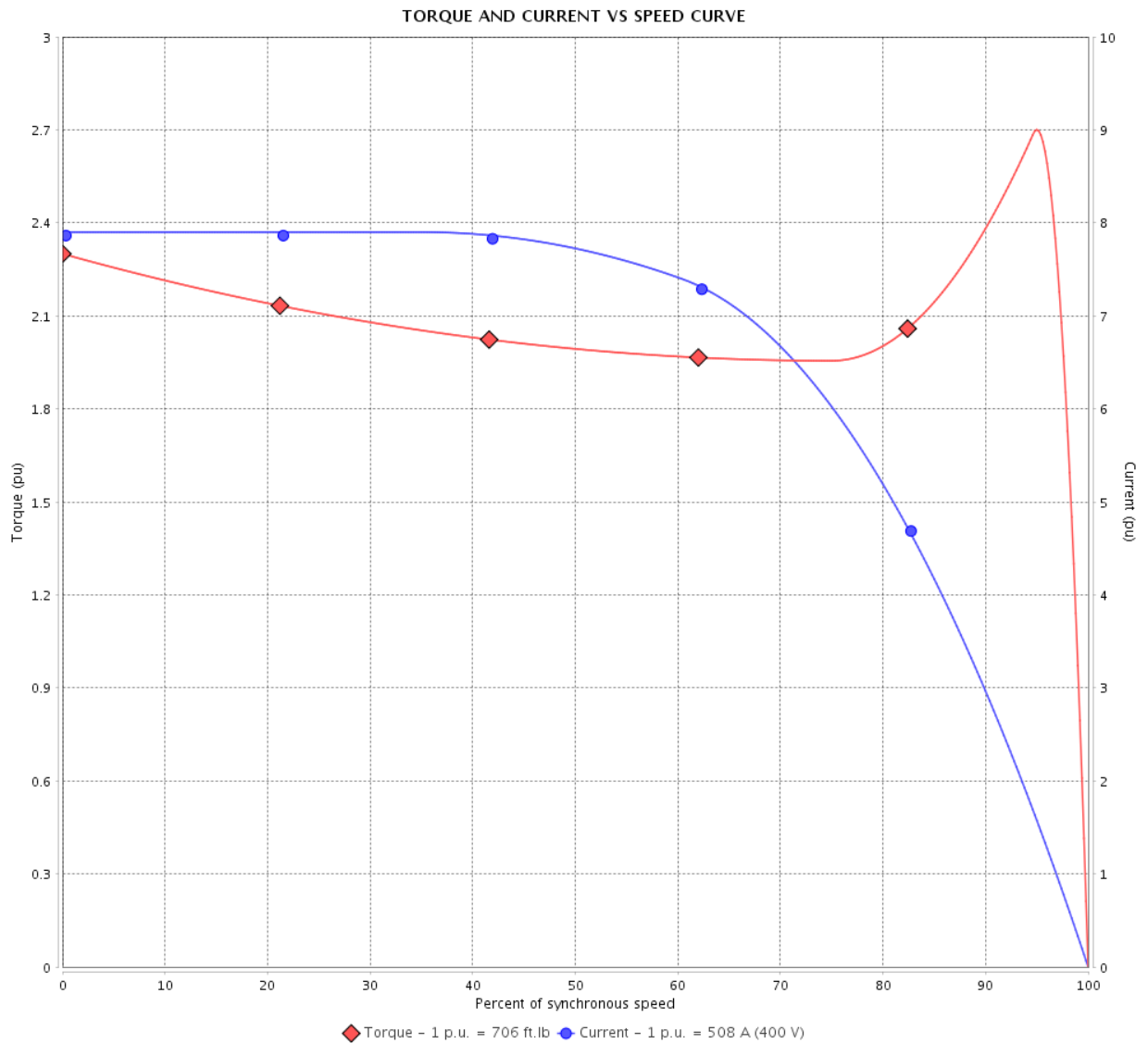
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Customer :

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Product code : 13346174

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Performance : 400 V 50 Hz 2P IE3

Rated current	: 508 A	Moment of inertia (J)	: 46.9 sq.ft.lb
LRC	: 7.9	Duty cycle	: Cont.(S1)
Rated torque	: 706 ft.lb	Insulation class	: F
Locked rotor torque	: 229 %	Service factor	: 1.15
Breakdown torque	: 270 %	Temperature rise	: 80 K
Rated speed	: 2975 rpm	Design	: A

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

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TORQUE AND CURRENT VS SPEED CURVE

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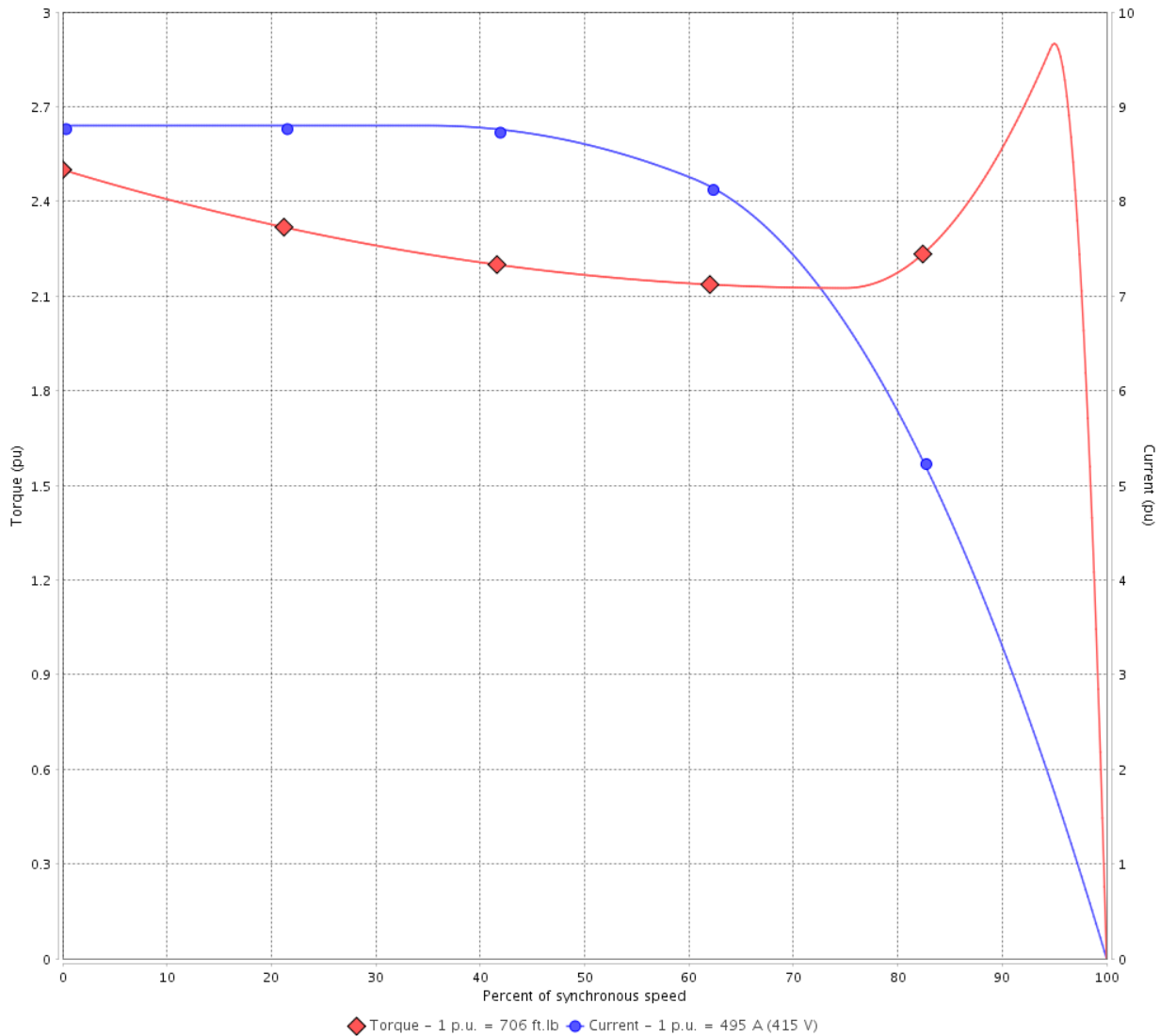
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TORQUE AND CURRENT VS SPEED CURVE



Performance : 415 V 50 Hz 2P IE3

Rated current	: 495 A	Moment of inertia (J)	: 46.9 sq.ft.lb
LRC	: 8.8	Duty cycle	: Cont.(S1)
Rated torque	: 706 ft.lb	Insulation class	: F
Locked rotor torque	: 250 %	Service factor	: 1.15
Breakdown torque	: 290 %	Temperature rise	: 80 K
Rated speed	: 2975 rpm	Design	: A

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

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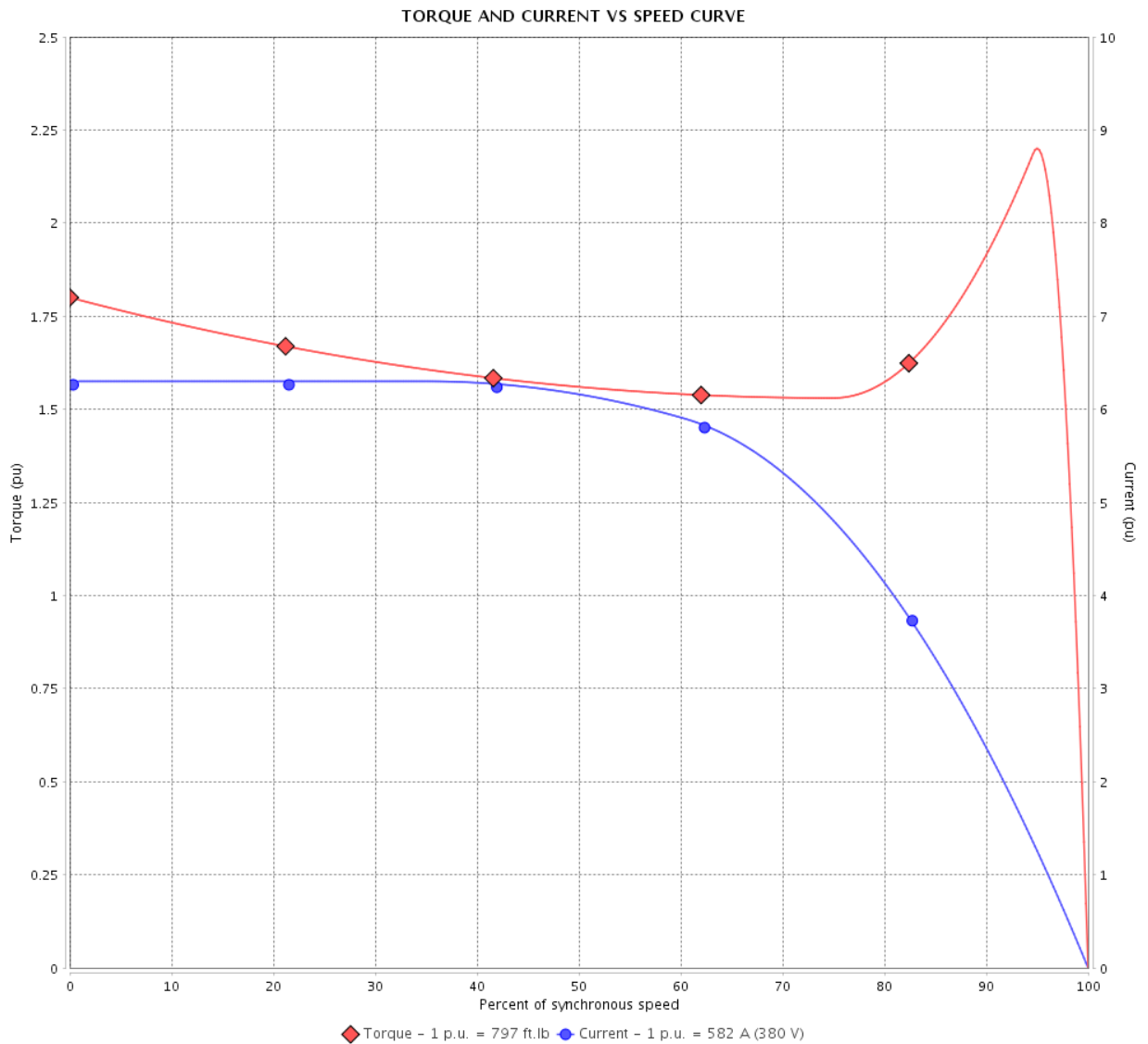
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Performance : 380 V 50 Hz 2P IE3

Rated current	: 582 A	Moment of inertia (J)	: 46.9 sq.ft.lb
LRC	: 6.3	Duty cycle	: Cont.(S1)
Rated torque	: 797 ft.lb	Insulation class	: F
Locked rotor torque	: 180 %	Service factor	: 1.15
Breakdown torque	: 220 %	Temperature rise	: 80 K
Rated speed	: 2965 rpm	Design	: A

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

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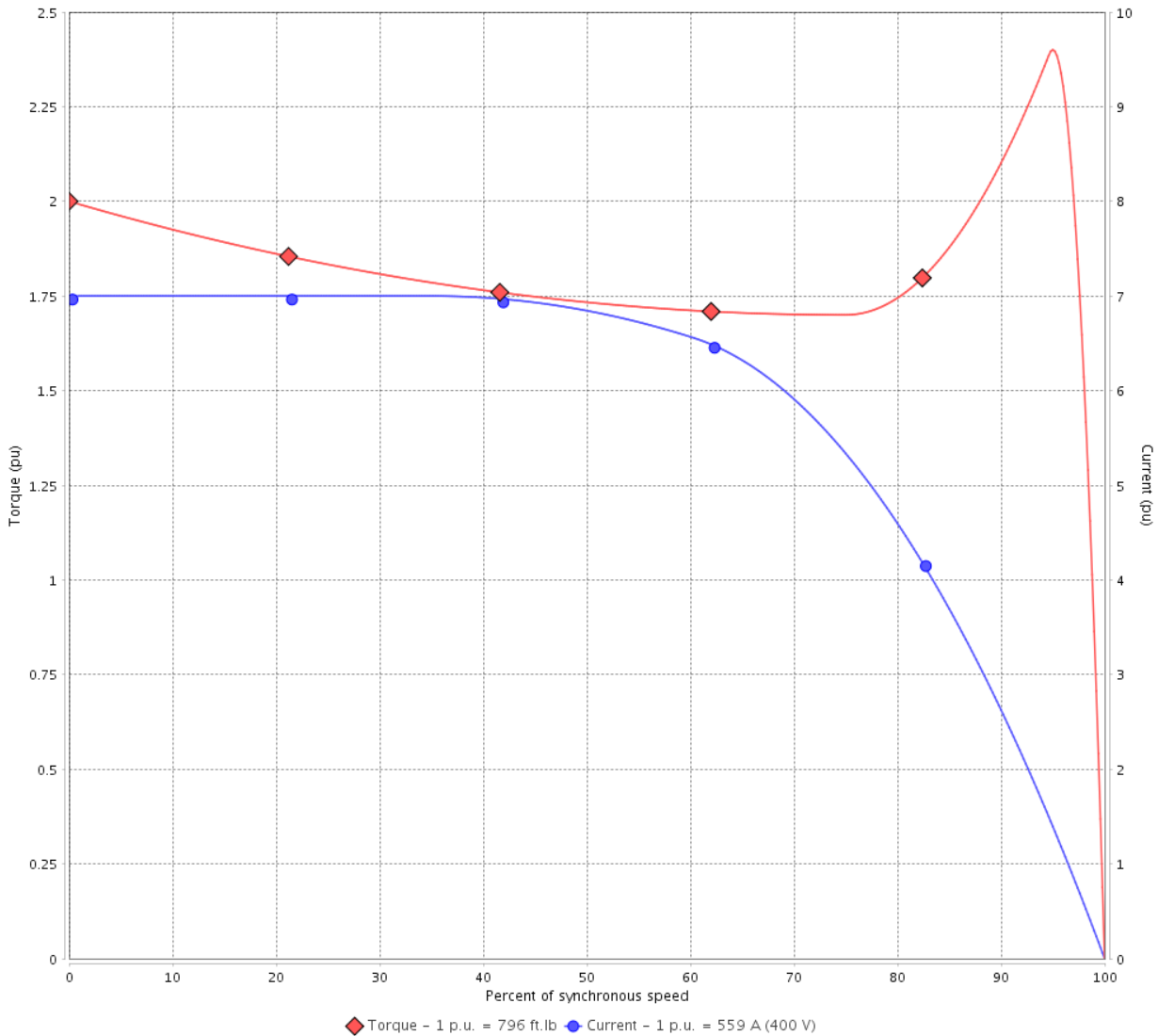
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Performance : 400 V 50 Hz 2P IE3

Rated current	: 559 A	Moment of inertia (J)	: 46.9 sq.ft.lb
LRC	: 7.0	Duty cycle	: Cont.(S1)
Rated torque	: 796 ft.lb	Insulation class	: F
Locked rotor torque	: 200 %	Service factor	: 1.15
Breakdown torque	: 240 %	Temperature rise	: 80 K
Rated speed	: 2970 rpm	Design	: A

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

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TORQUE AND CURRENT VS SPEED CURVE



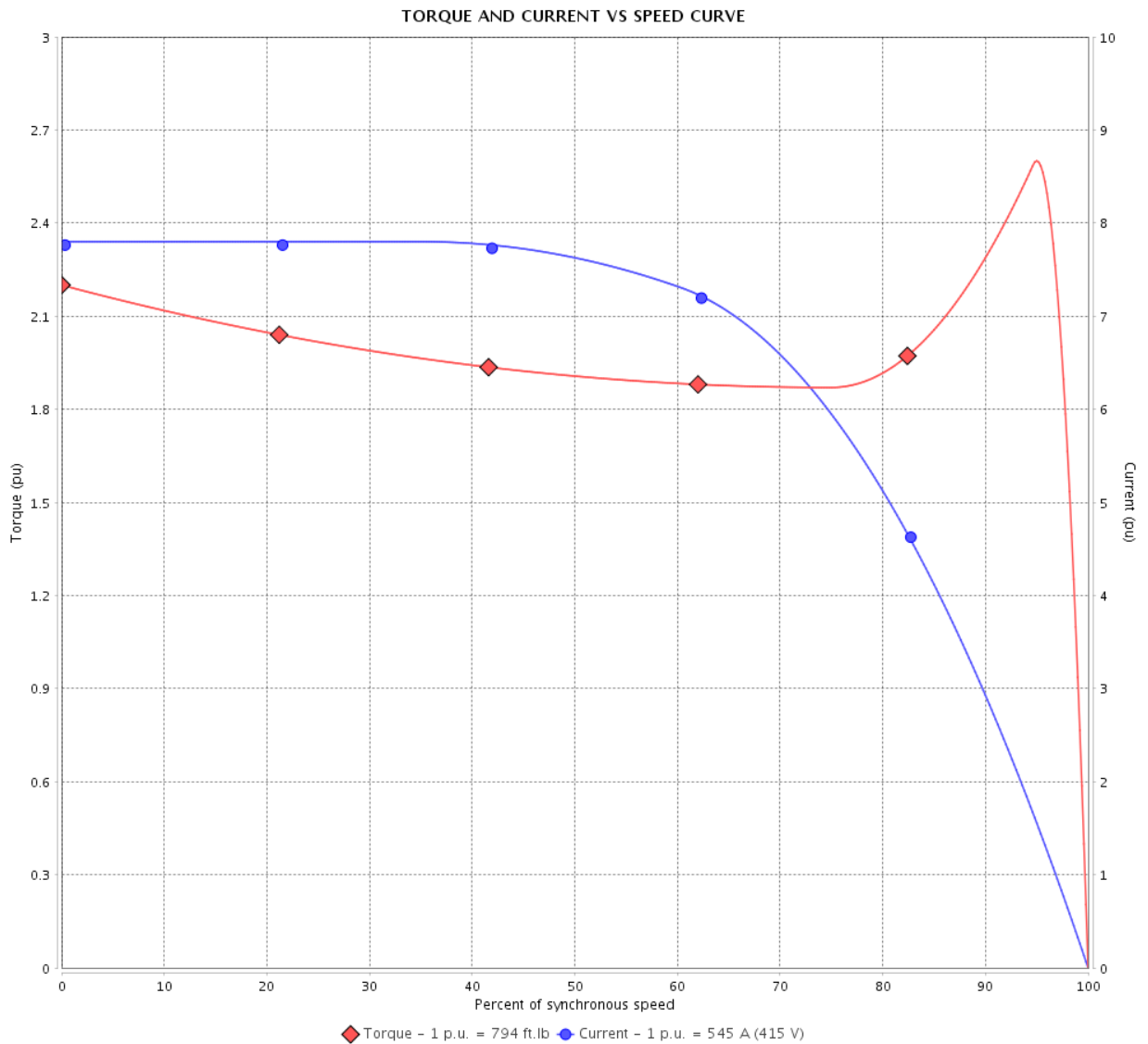
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Performance : 415 V 50 Hz 2P IE3

Rated current	: 545 A	Moment of inertia (J)	: 46.9 sq.ft.lb
LRC	: 7.8	Duty cycle	: Cont.(S1)
Rated torque	: 794 ft.lb	Insulation class	: F
Locked rotor torque	: 220 %	Service factor	: 1.15
Breakdown torque	: 260 %	Temperature rise	: 80 K
Rated speed	: 2975 rpm	Design	: A

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

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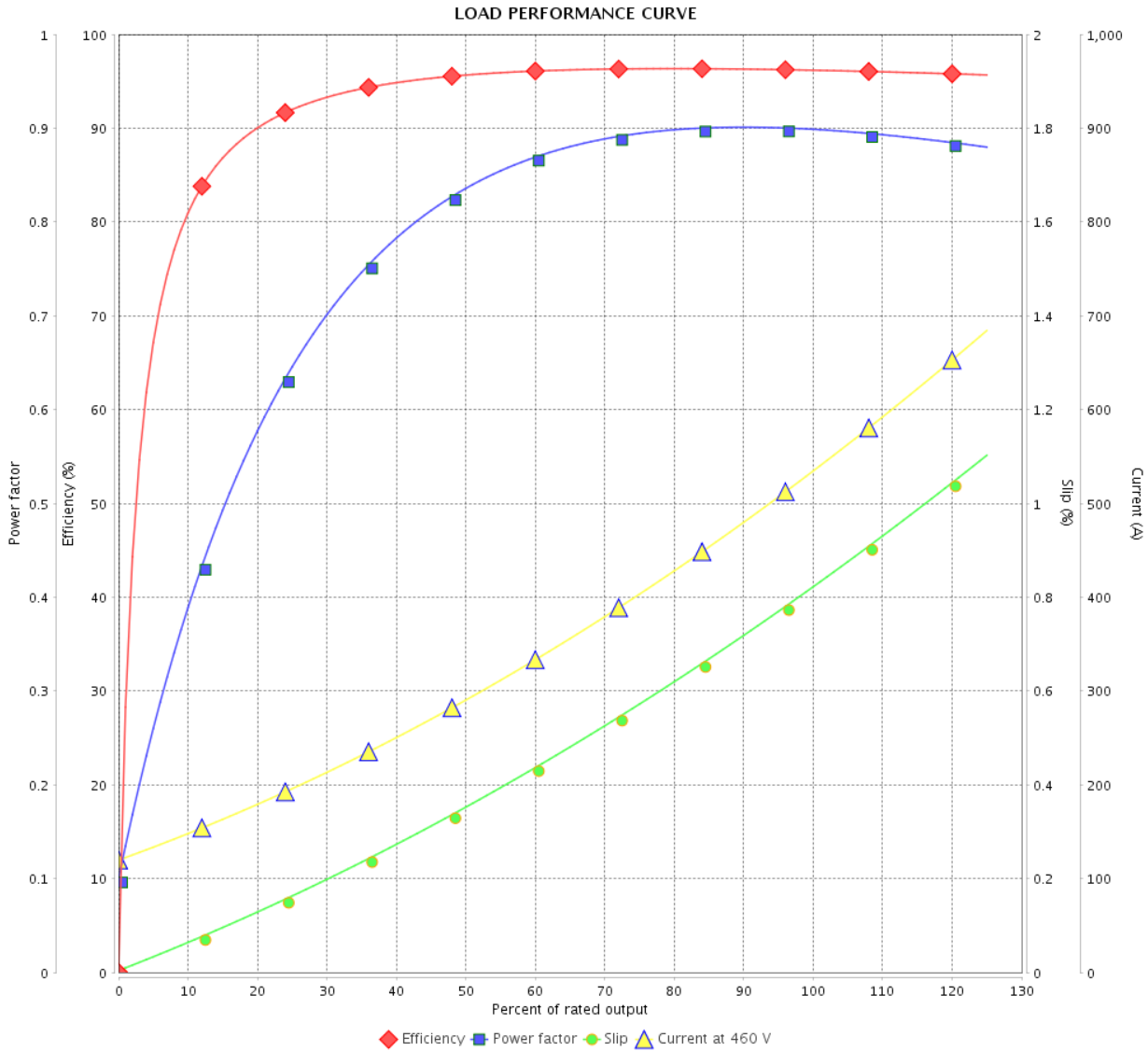


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Performance : 460 V 60 Hz 2P

Rated current : 536 A
 LRC : 7.1
 Rated torque : 735 ft.lb
 Locked rotor torque : 190 %
 Breakdown torque : 250 %
 Rated speed : 3570 rpm

Moment of inertia (J) : 46.9 sq.ft.lb
 Duty cycle : Cont.(S1)
 Insulation class : F
 Service factor : 1.15
 Temperature rise : 80 K
 Design : A

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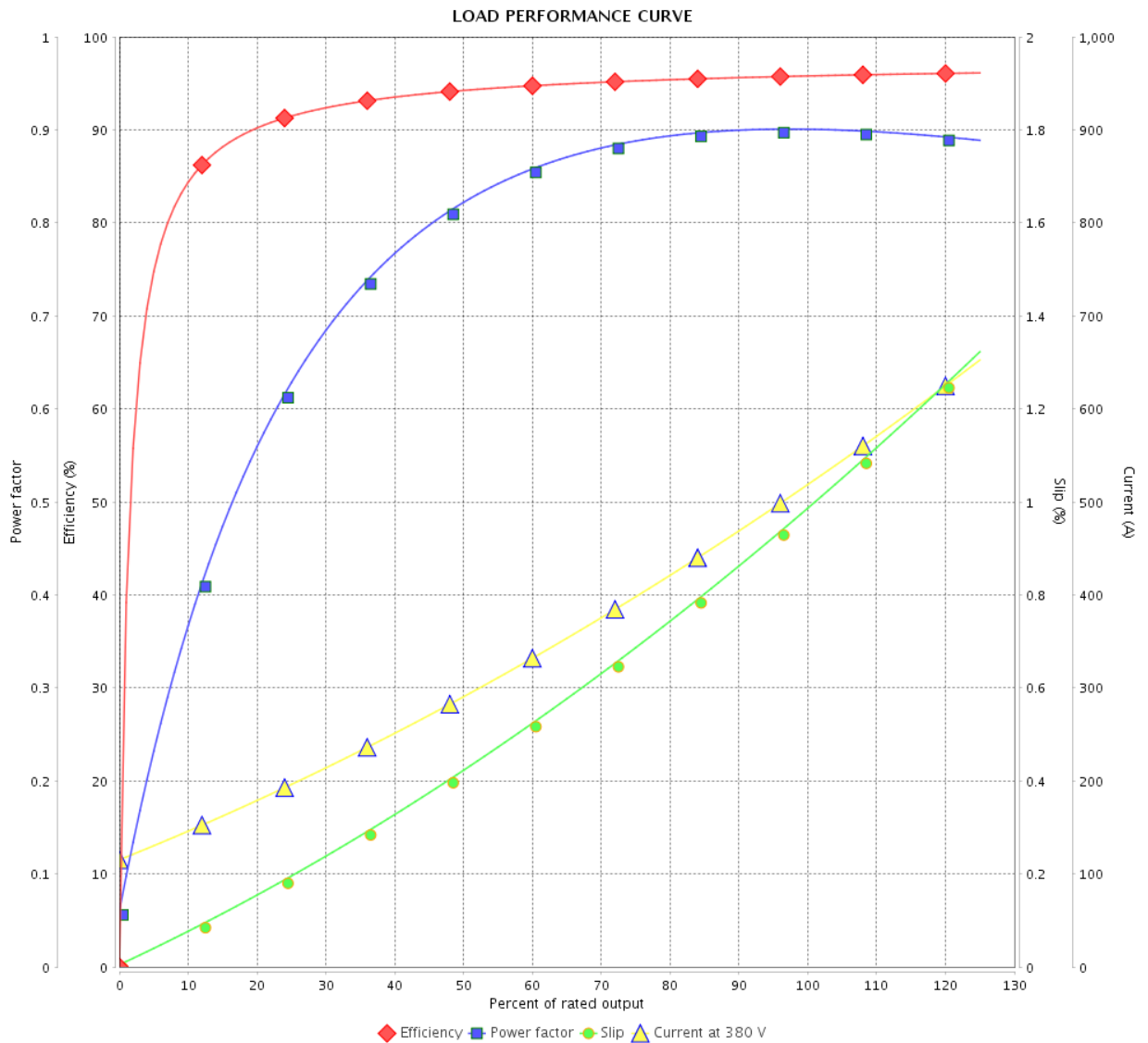


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Product code : 13346174

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Performance : 380 V 50 Hz 2P IE3

Rated current : 529 A
 LRC : 7.1
 Rated torque : 707 ft.lb
 Locked rotor torque : 200 %
 Breakdown torque : 250 %
 Rated speed : 2970 rpm

Moment of inertia (J) : 46.9 sq.ft.lb
 Duty cycle : Cont.(S1)
 Insulation class : F
 Service factor : 1.15
 Temperature rise : 80 K
 Design : A

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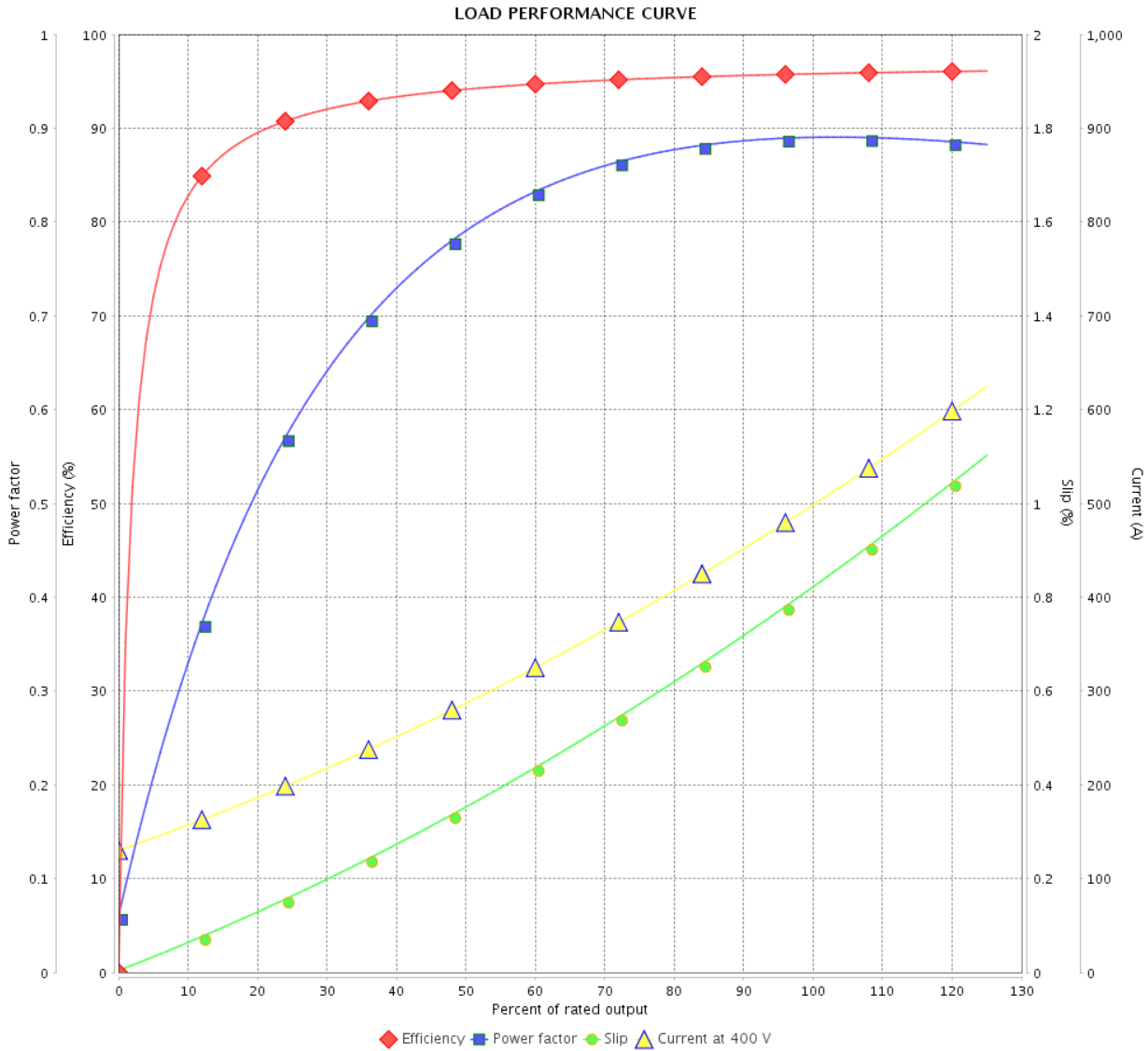


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Performance : 400 V 50 Hz 2P IE3

Rated current : 508 A
 LRC : 7.9
 Rated torque : 706 ft.lb
 Locked rotor torque : 229 %
 Breakdown torque : 270 %
 Rated speed : 2975 rpm

Moment of inertia (J) : 46.9 sq.ft.lb
 Duty cycle : Cont.(S1)
 Insulation class : F
 Service factor : 1.15
 Temperature rise : 80 K
 Design : A

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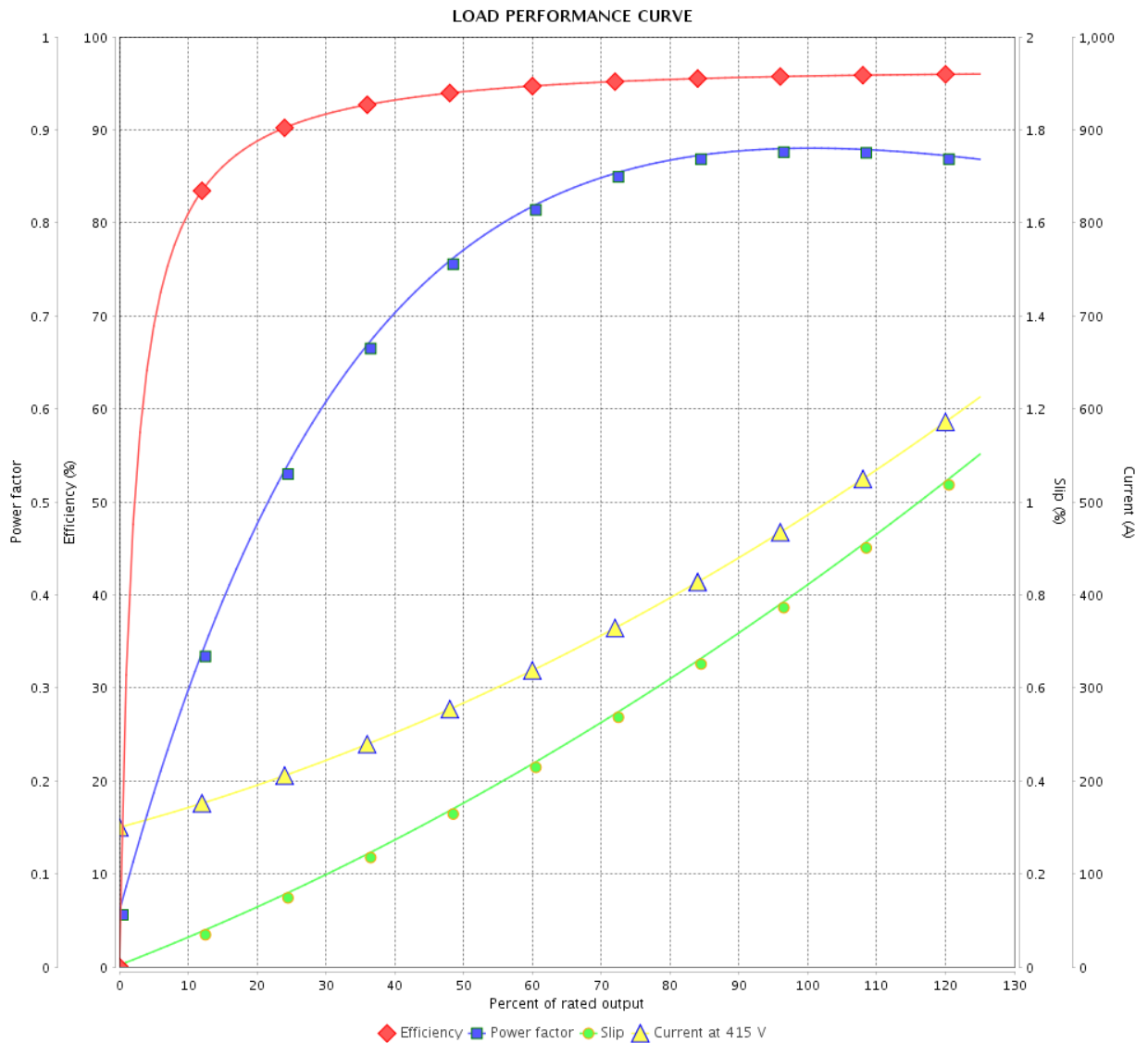


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Performance : 415 V 50 Hz 2P IE3

Rated current : 495 A
 LRC : 8.8
 Rated torque : 706 ft.lb
 Locked rotor torque : 250 %
 Breakdown torque : 290 %
 Rated speed : 2975 rpm

Moment of inertia (J) : 46.9 sq.ft.lb
 Duty cycle : Cont.(S1)
 Insulation class : F
 Service factor : 1.15
 Temperature rise : 80 K
 Design : A

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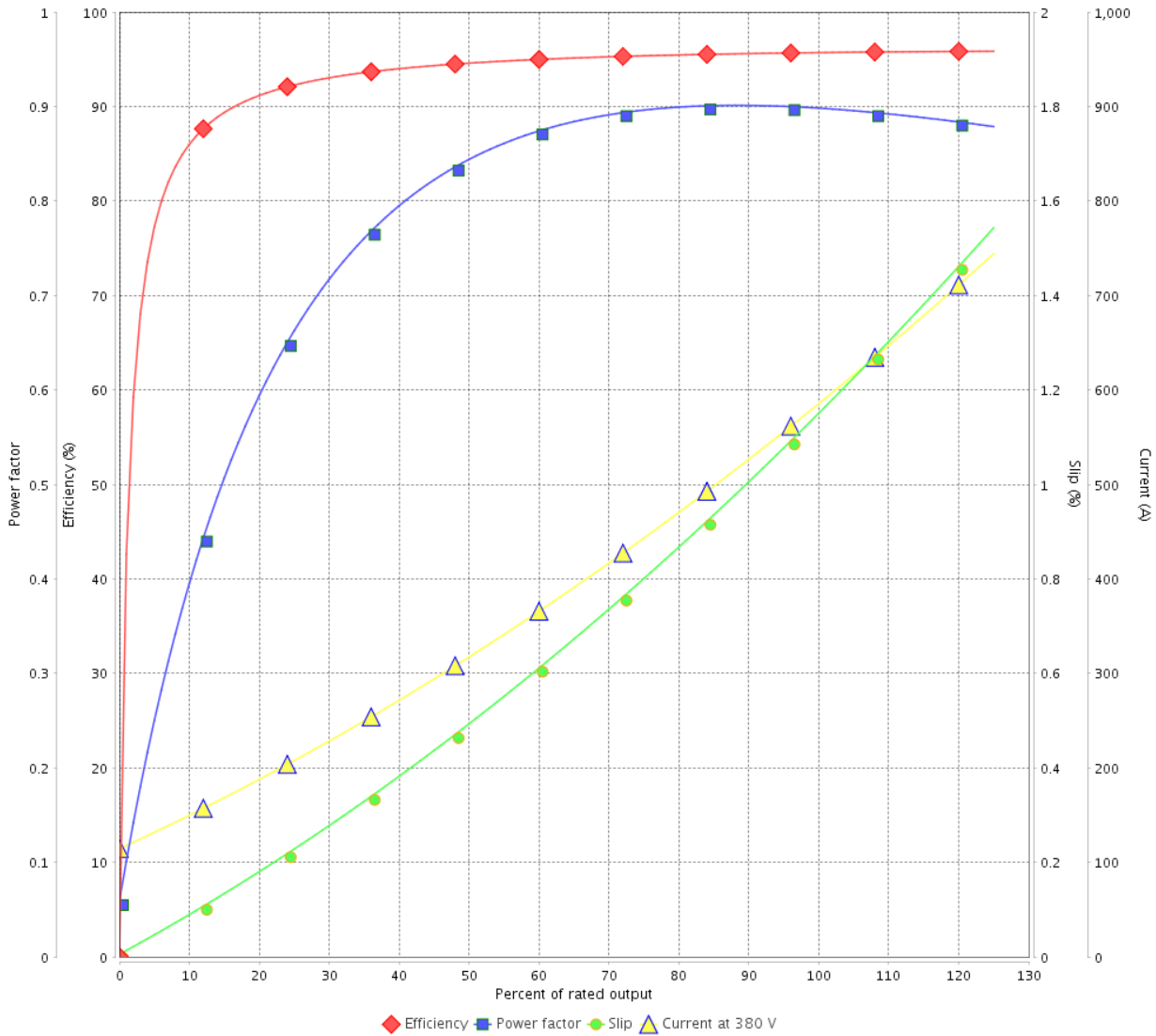
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Performance : 380 V 50 Hz 2P IE3

Rated current : 582 A
 LRC : 6.3
 Rated torque : 797 ft.lb
 Locked rotor torque : 180 %
 Breakdown torque : 220 %
 Rated speed : 2965 rpm

Moment of inertia (J) : 46.9 sq.ft.lb
 Duty cycle : Cont.(S1)
 Insulation class : F
 Service factor : 1.15
 Temperature rise : 80 K
 Design : A

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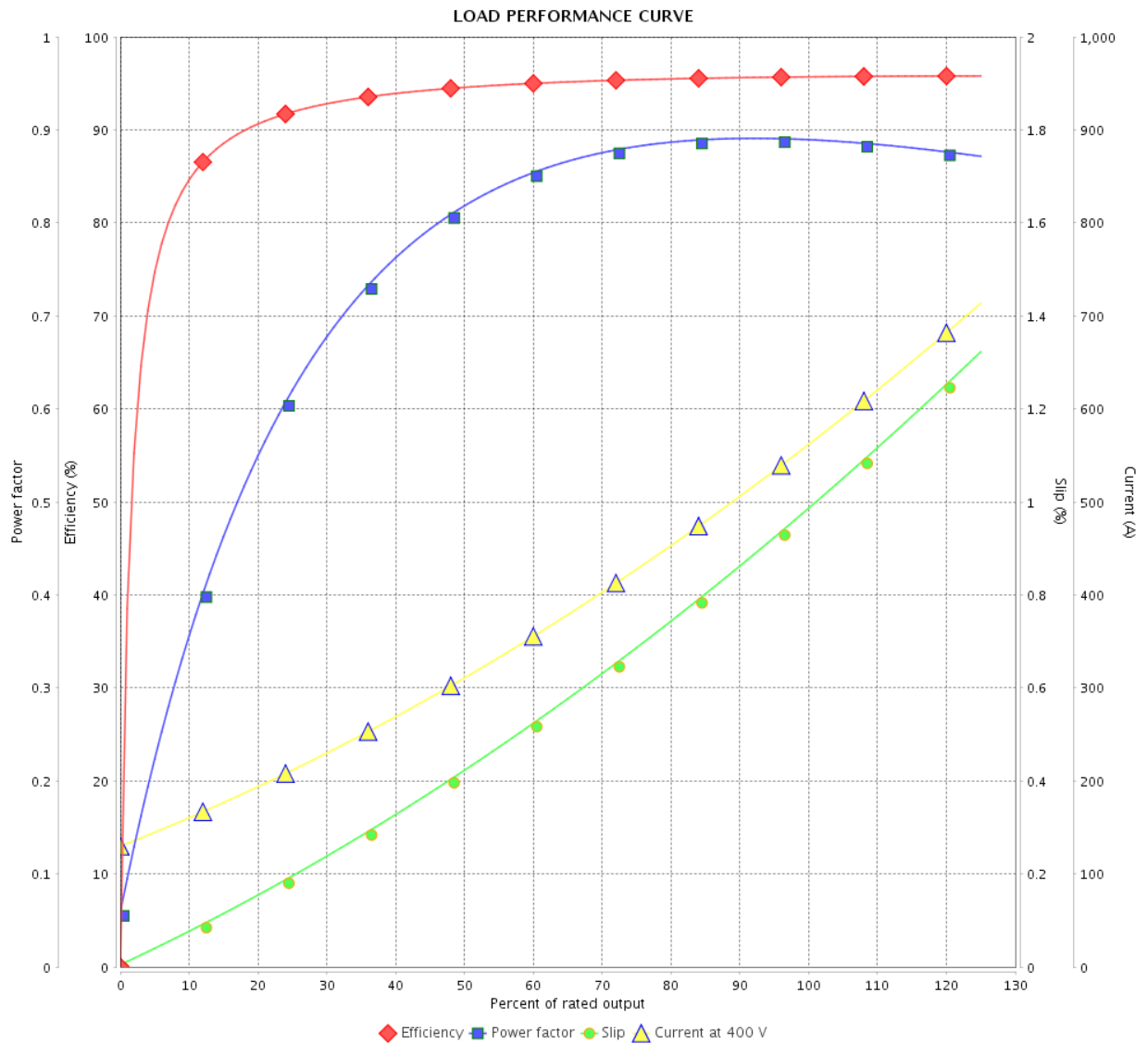


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Performance : 400 V 50 Hz 2P IE3

Rated current : 559 A
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 Rated speed : 2970 rpm

Moment of inertia (J) : 46.9 sq.ft.lb
 Duty cycle : Cont.(S1)
 Insulation class : F
 Service factor : 1.15
 Temperature rise : 80 K
 Design : A

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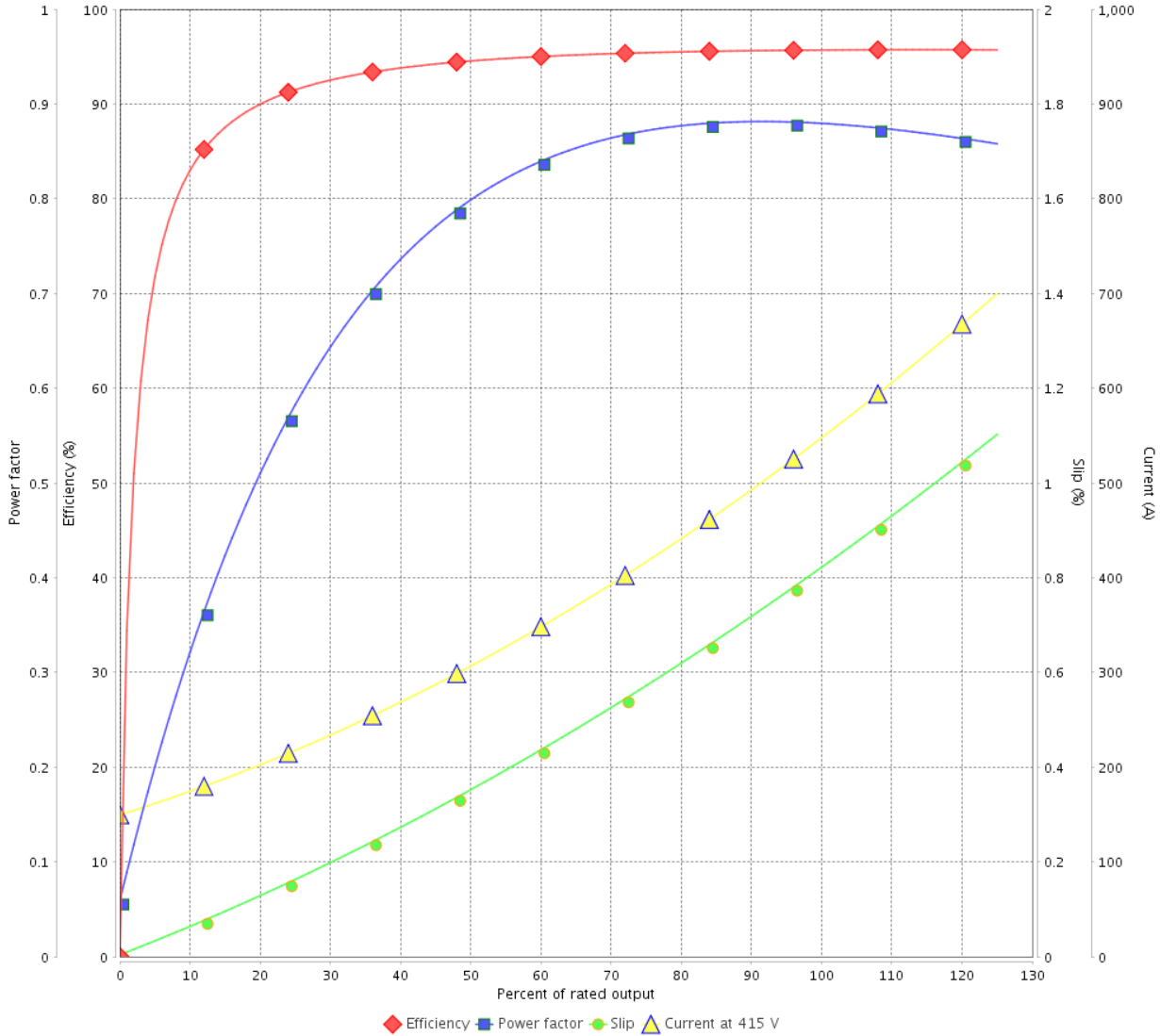
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Performance : 415 V 50 Hz 2P IE3

Rated current : 545 A
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 Rated torque : 794 ft.lb
 Locked rotor torque : 220 %
 Breakdown torque : 260 %
 Rated speed : 2975 rpm

Moment of inertia (J) : 46.9 sq.ft.lb
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 Insulation class : F
 Service factor : 1.15
 Temperature rise : 80 K
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Locked rotor torque : 190 %	Service factor : 1.15
Breakdown torque : 250 %	Temperature rise : 80 K
Rated speed : 3570 rpm	Design : A

Heating constant

Cooling constant

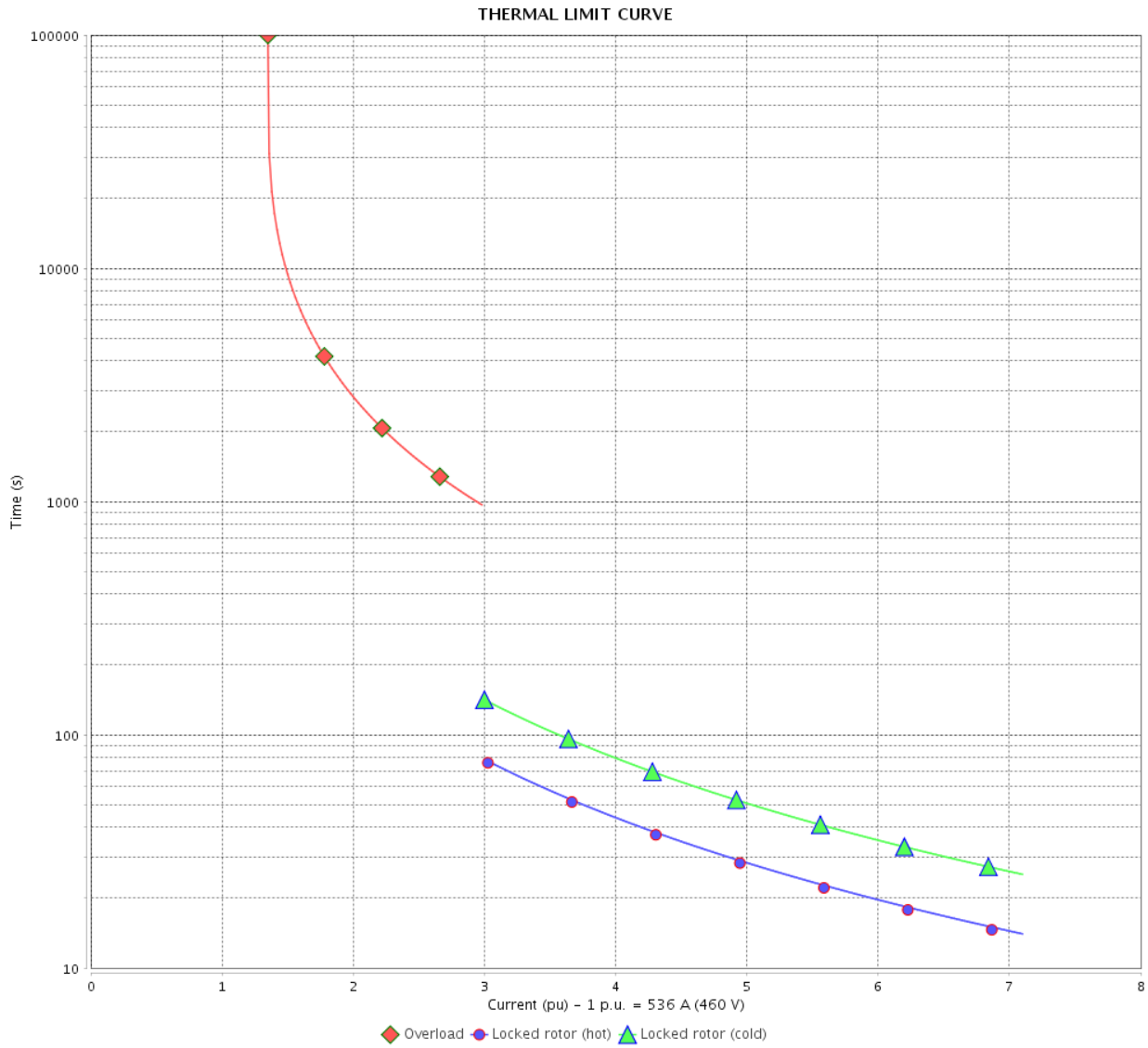
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Heating constant

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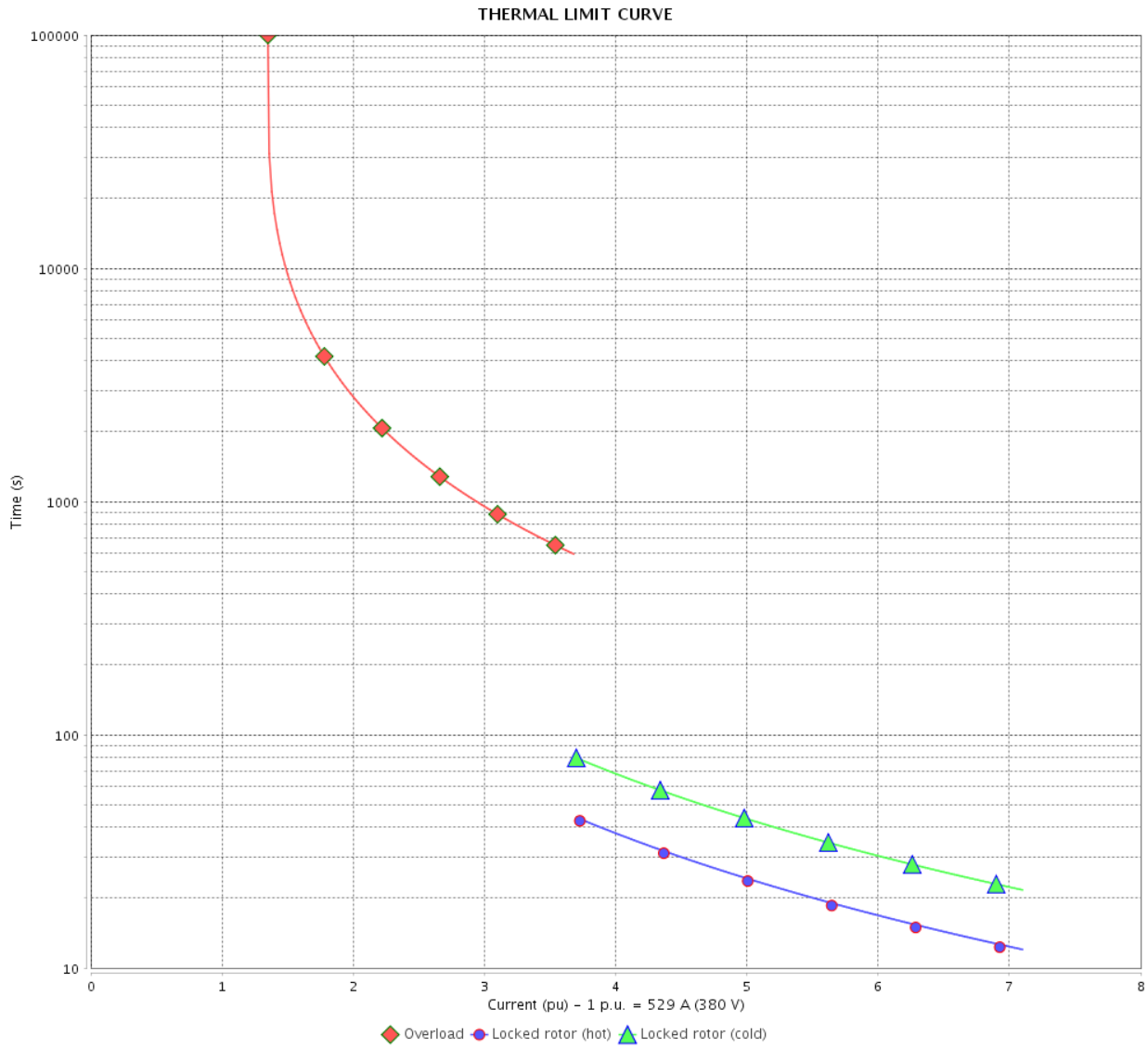
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Heating constant

Cooling constant

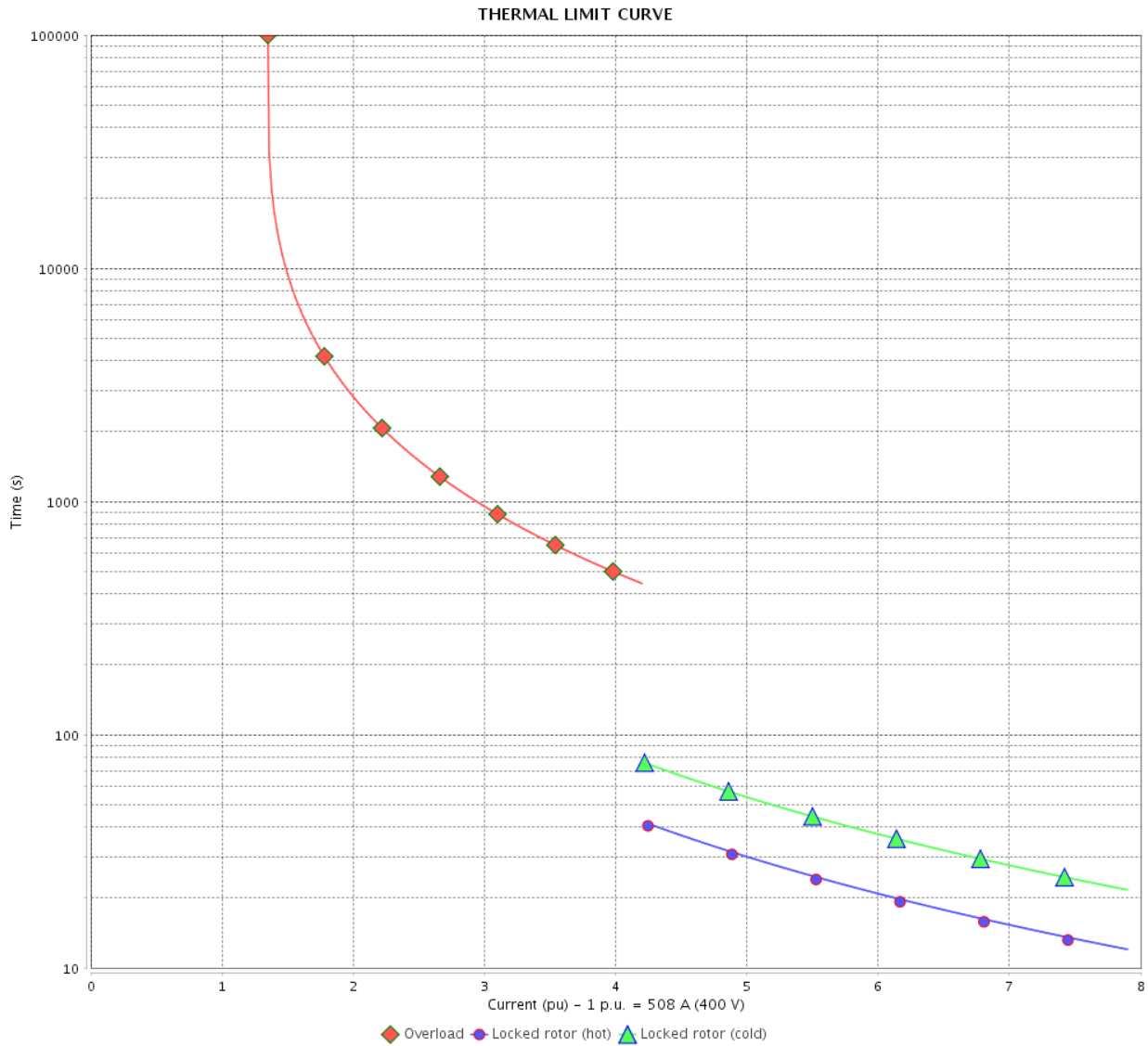
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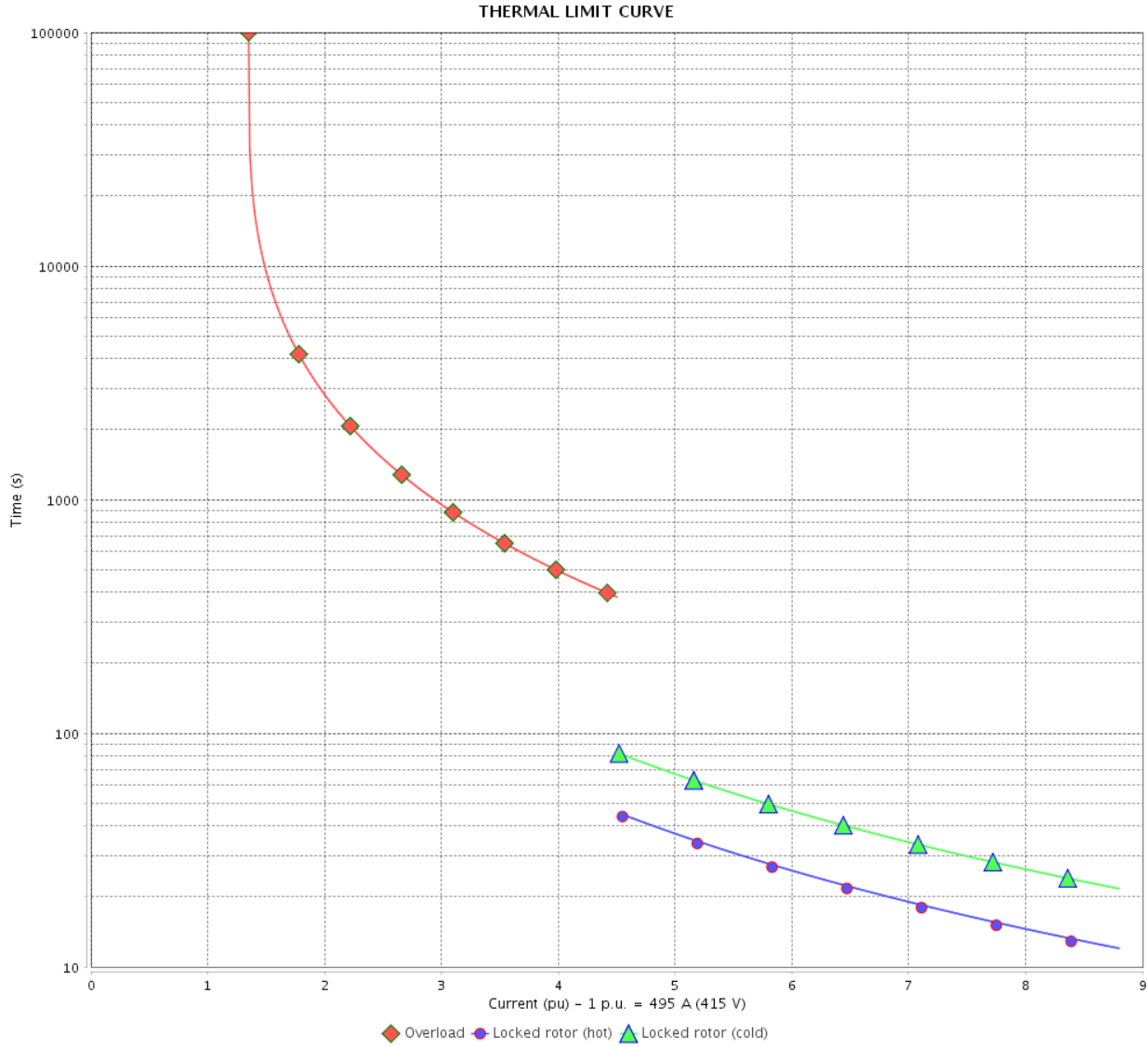
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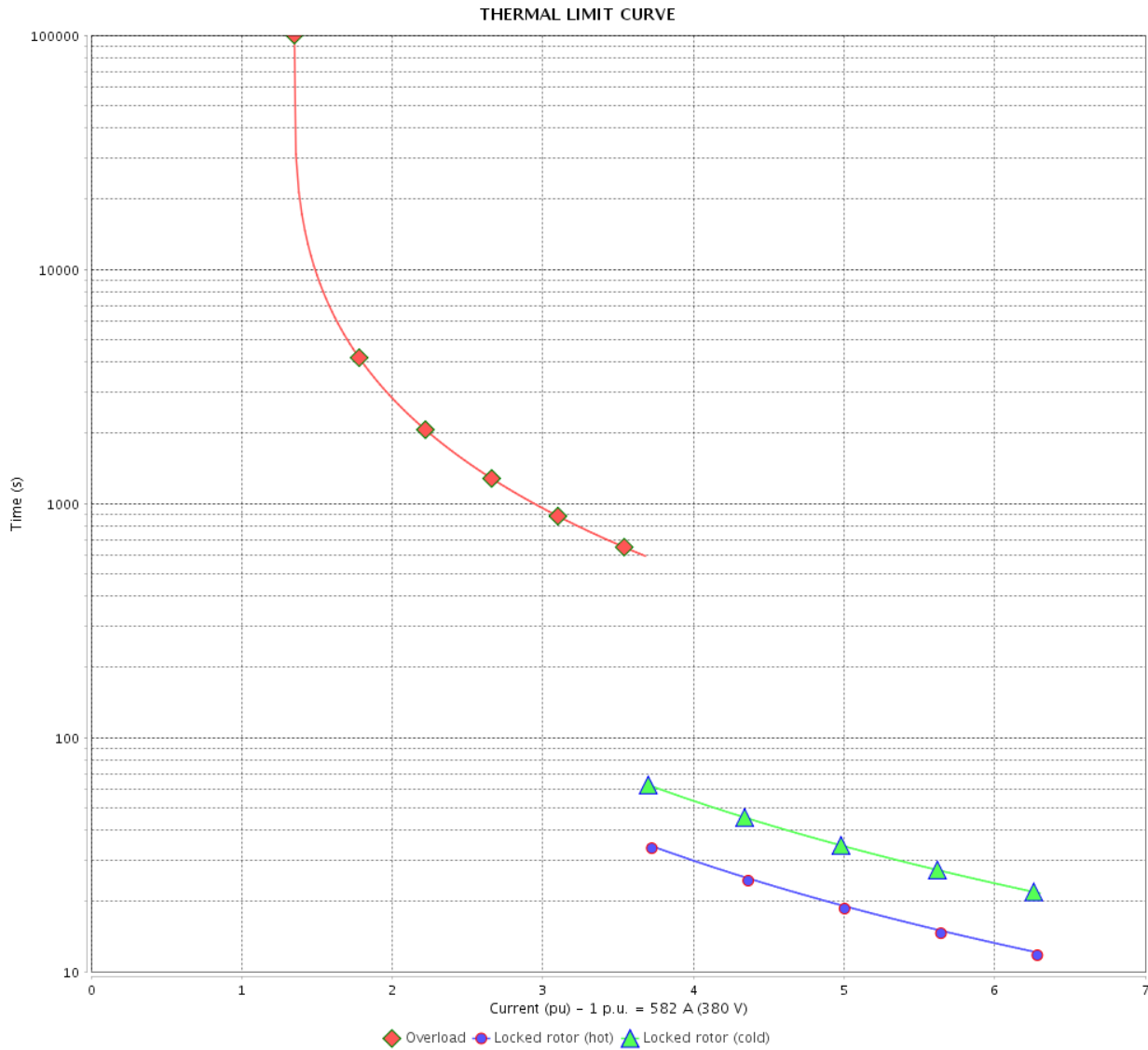
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 Catalog # : 50036OT3G447/9TS-W40

Performance : 400 V 50 Hz 2P IE3

Rated current : 559 A	Moment of inertia (J) : 46.9 sq.ft.lb
LRC : 7.0	Duty cycle : Cont.(S1)
Rated torque : 796 ft.lb	Insulation class : F
Locked rotor torque : 200 %	Service factor : 1.15
Breakdown torque : 240 %	Temperature rise : 80 K
Rated speed : 2970 rpm	Design : A

Heating constant

Cooling constant

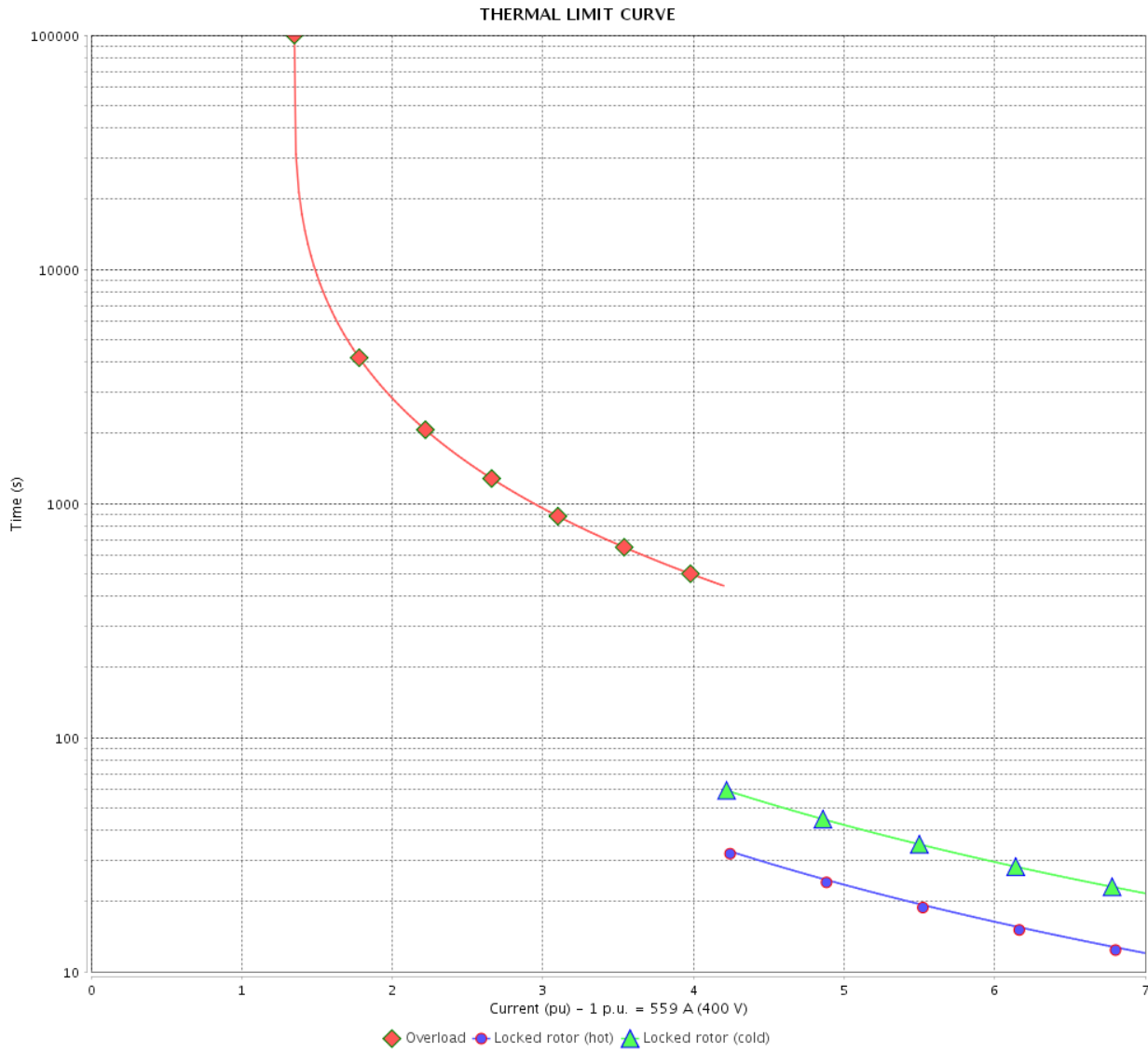
Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page 27 / 37	Revision
Checked by				
Date	12/04/2022			

THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



Customer : _____



Rev.	Changes Summary	Performed	Checked	Date
Performed by		Page		Revision
Checked by		28 / 37		
Date		12/04/2022		

THERMAL LIMIT CURVE



Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : W40 NEMA Premium Efficiency Three-Phase Product code : 13346174
 Catalog # : 50036OT3G447/9TS-W40

Performance : 415 V 50 Hz 2P IE3

Rated current : 545 A	Moment of inertia (J) : 46.9 sq.ft.lb
LRC : 7.8	Duty cycle : Cont.(S1)
Rated torque : 794 ft.lb	Insulation class : F
Locked rotor torque : 220 %	Service factor : 1.15
Breakdown torque : 260 %	Temperature rise : 80 K
Rated speed : 2975 rpm	Design : A

Heating constant

Cooling constant

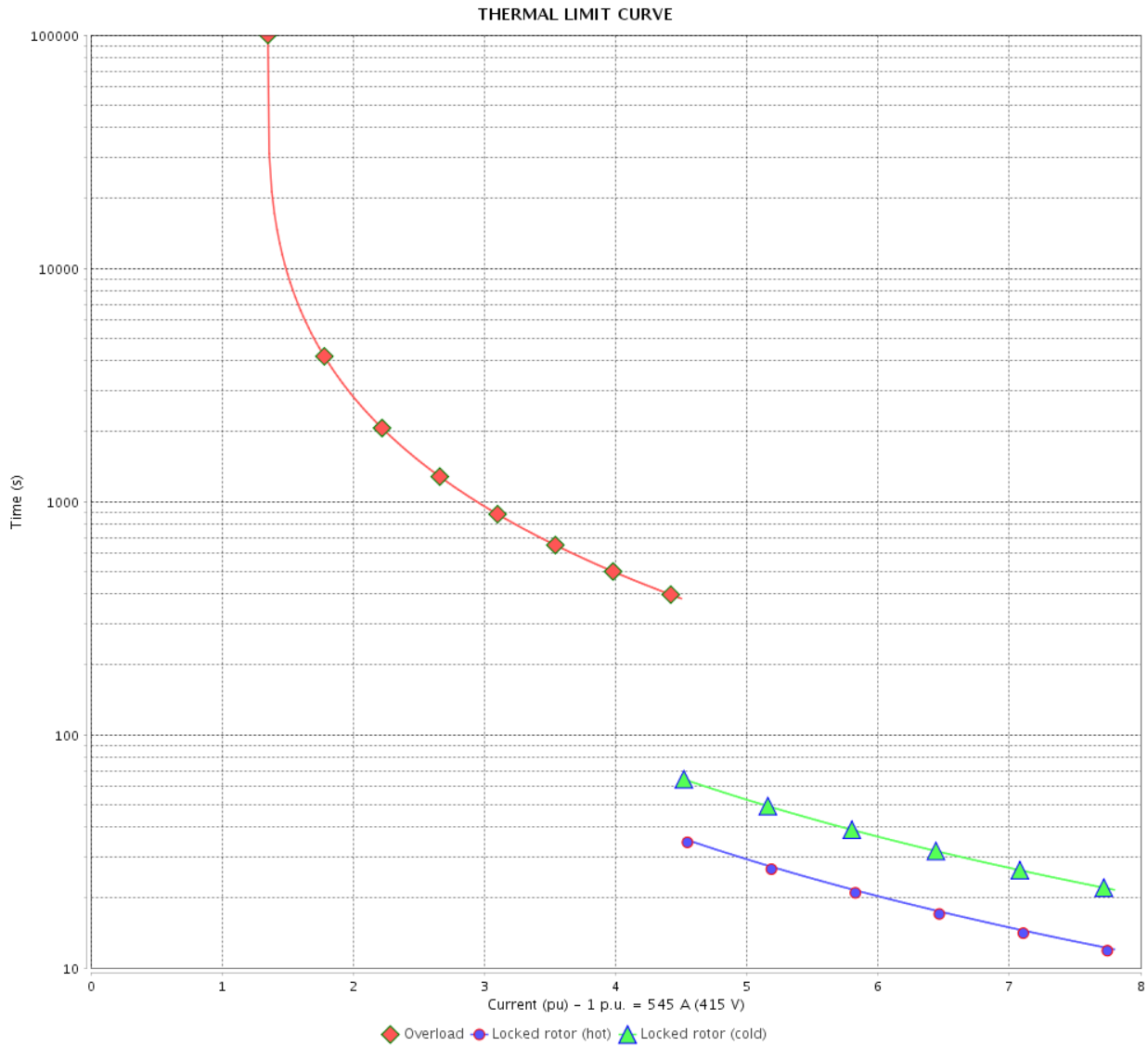
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Checked by				
Date	12/04/2022			

THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



Customer : _____



Rev.	Changes Summary	Performed	Checked	Date
Performed by		Page		Revision
Checked by		30 / 37		
Date		12/04/2022		

VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

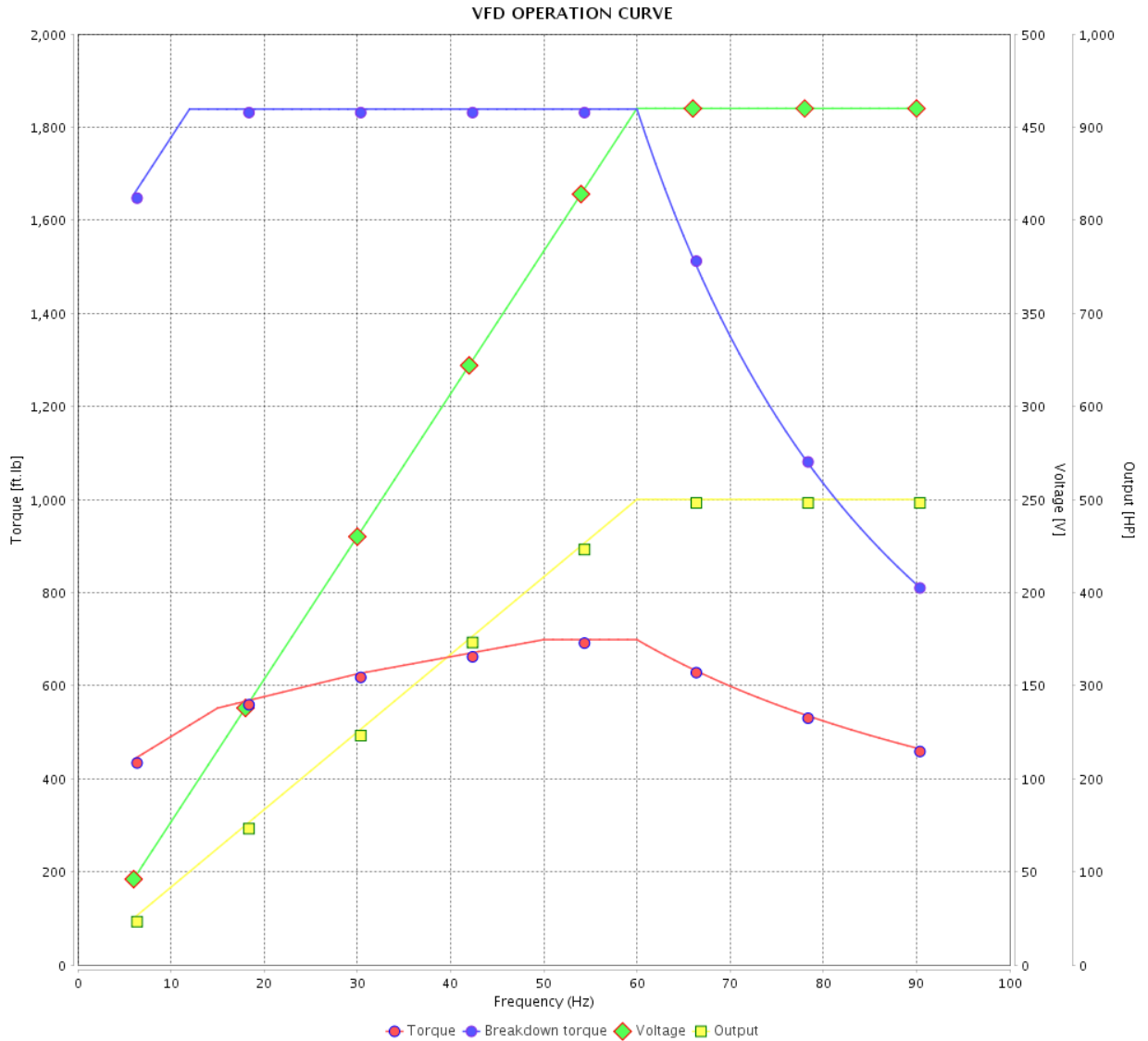


Customer :

Product line : W40 NEMA Premium Efficiency
Three-Phase

Product code : 13346174

Catalog # : 50036OT3G447/9TS-W40



Performance : 460 V 60 Hz 2P

Rated current : 536 A
LRC : 7.1
Rated torque : 735 ft.lb
Locked rotor torque : 190 %
Breakdown torque : 250 %
Rated speed : 3570 rpm

Moment of inertia (J) : 46.9 sq.ft.lb
Duty cycle : Cont.(S1)
Insulation class : F
Service factor : 1.15
Temperature rise : 80 K
Design : A

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Performed by			Page	Revision
Checked by				
Date				
			31 / 37	

VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

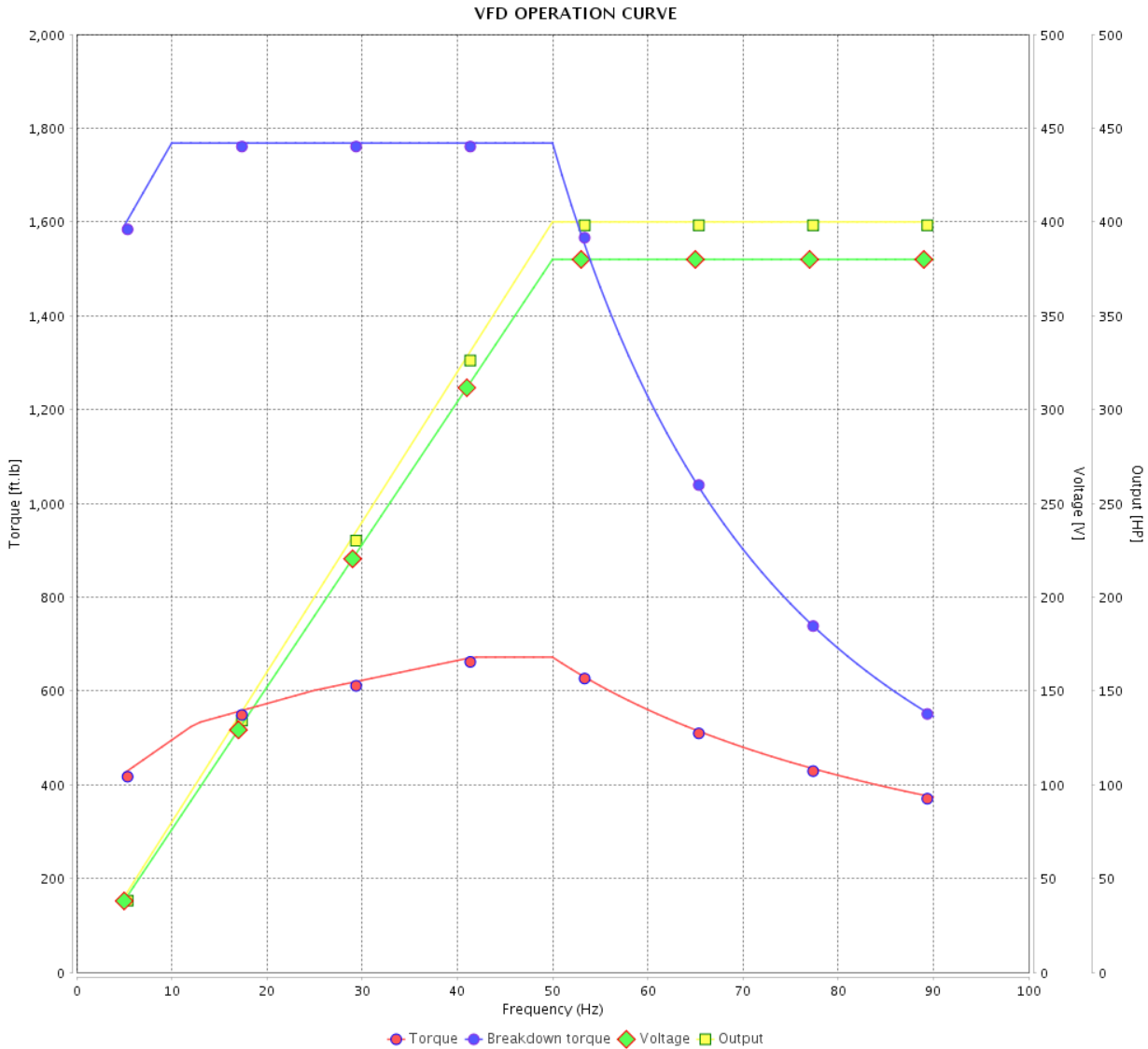


Customer :

Product line : W40 NEMA Premium Efficiency
Three-Phase

Product code : 13346174

Catalog # : 50036OT3G447/9TS-W40



Performance : 380 V 50 Hz 2P IE3

Rated current : 529 A
LRC : 7.1
Rated torque : 707 ft.lb
Locked rotor torque : 200 %
Breakdown torque : 250 %
Rated speed : 2970 rpm

Moment of inertia (J) : 46.9 sq.ft.lb
Duty cycle : Cont.(S1)
Insulation class : F
Service factor : 1.15
Temperature rise : 80 K
Design : A

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Performed by			Page	Revision
Checked by				
Date				
			32 / 37	

VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

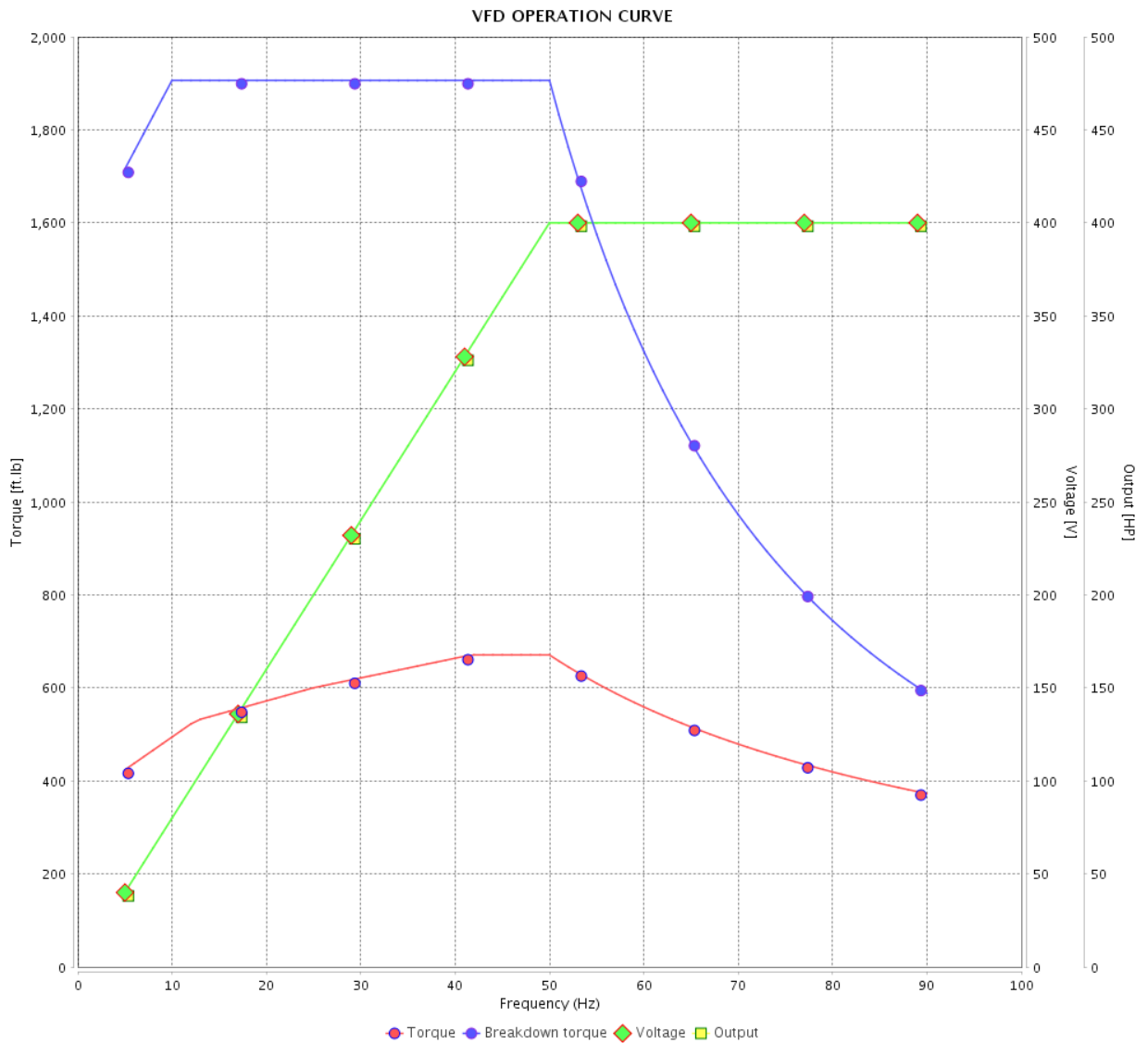


Customer :

Product line : W40 NEMA Premium Efficiency
Three-Phase

Product code : 13346174

Catalog # : 50036OT3G447/9TS-W40



Performance : 400 V 50 Hz 2P IE3

Rated current : 508 A
LRC : 7.9
Rated torque : 706 ft.lb
Locked rotor torque : 229 %
Breakdown torque : 270 %
Rated speed : 2975 rpm

Moment of inertia (J) : 46.9 sq.ft.lb
Duty cycle : Cont.(S1)
Insulation class : F
Service factor : 1.15
Temperature rise : 80 K
Design : A

Rev.	Changes Summary	Performed	Checked	Date
Performed by		Page		Revision
Checked by		33 / 37		
Date		12/04/2022		

VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

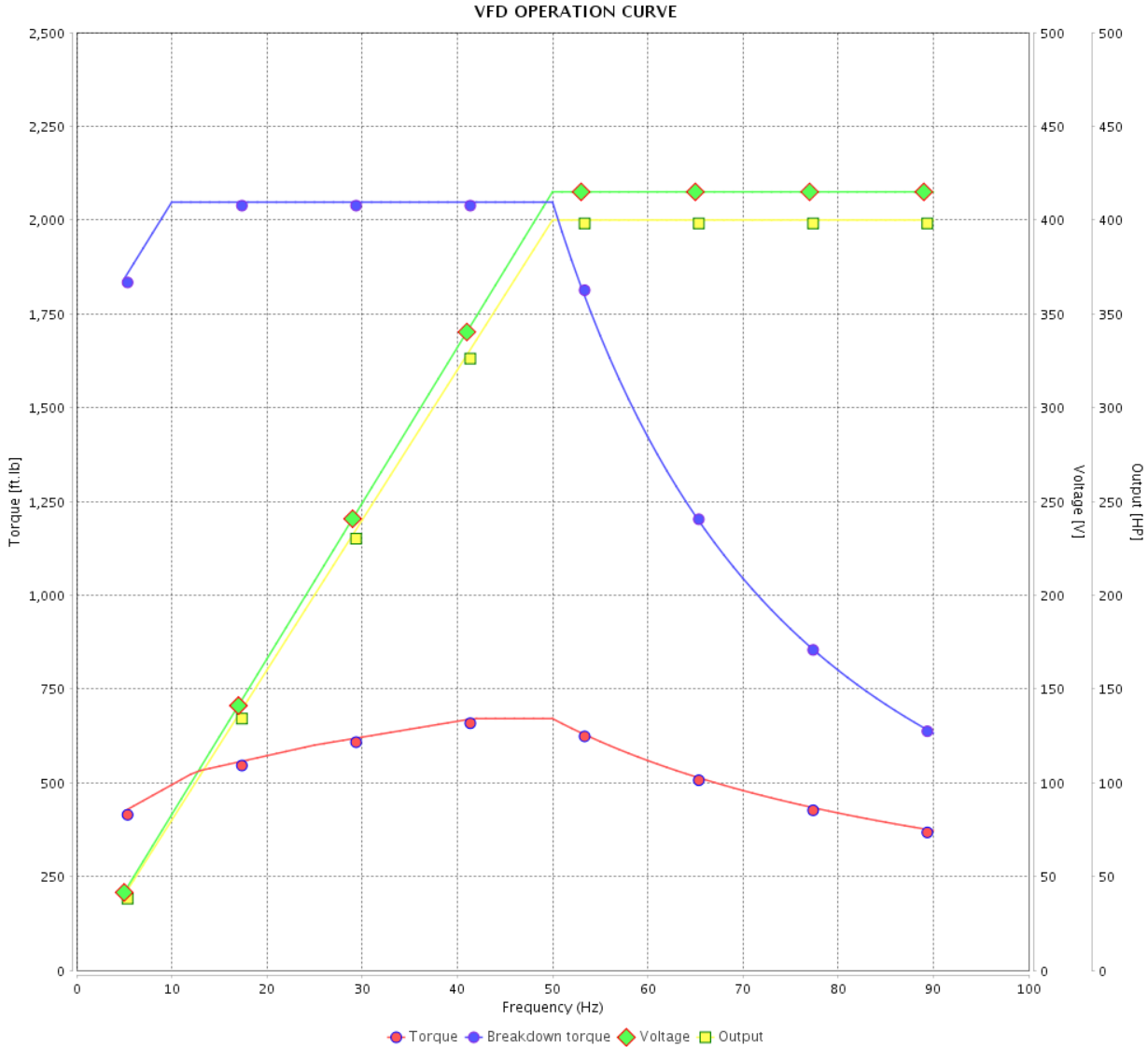


Customer : _____

Product line : W40 NEMA Premium Efficiency
Three-Phase

Product code : 13346174

Catalog # : 50036OT3G447/9TS-W40



Performance : 415 V 50 Hz 2P IE3

Rated current : 495 A
LRC : 8.8
Rated torque : 706 ft.lb
Locked rotor torque : 250 %
Breakdown torque : 290 %
Rated speed : 2975 rpm

Moment of inertia (J) : 46.9 sq.ft.lb
Duty cycle : Cont.(S1)
Insulation class : F
Service factor : 1.15
Temperature rise : 80 K
Design : A

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

VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

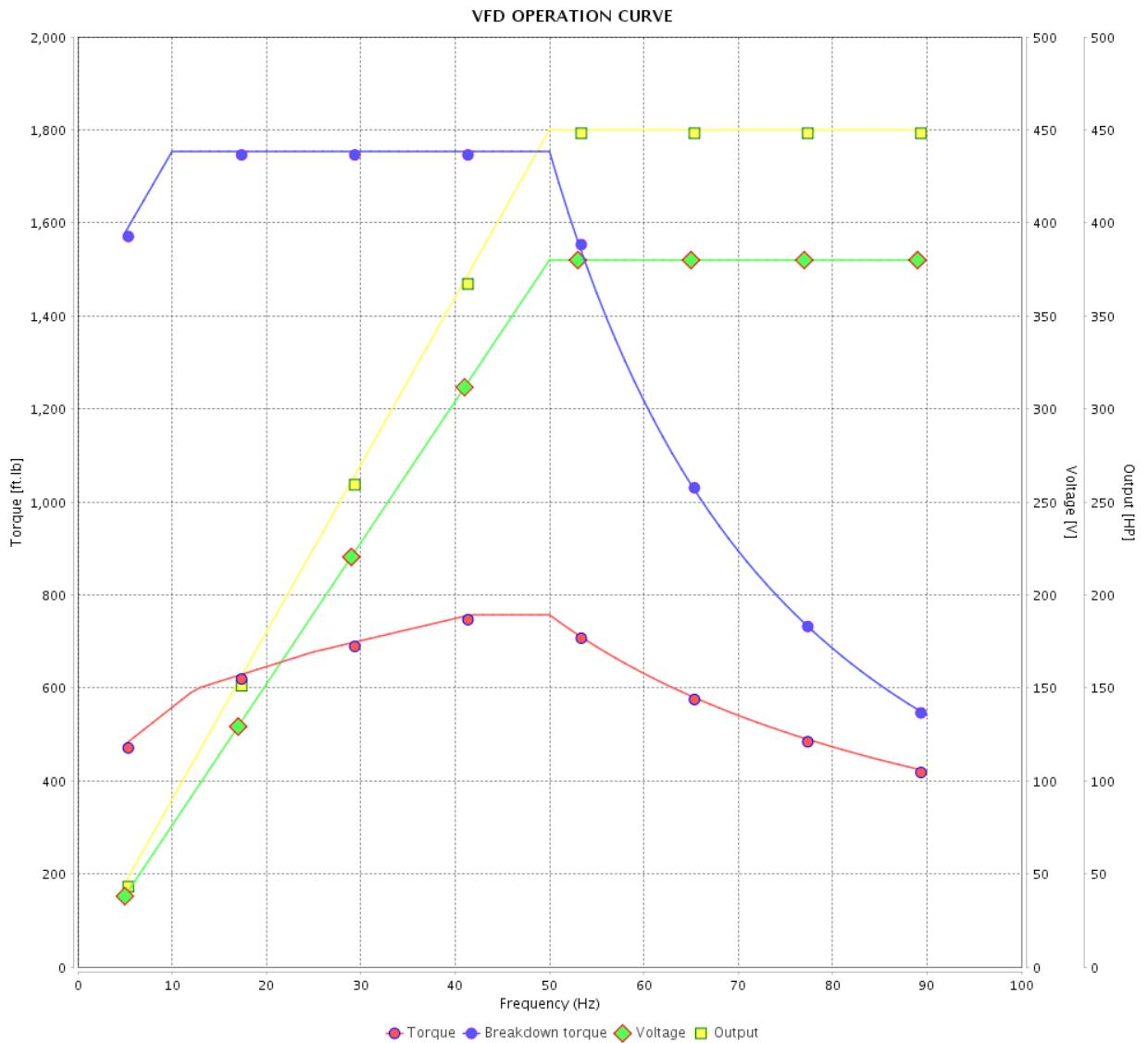


Customer : _____

Product line : W40 NEMA Premium Efficiency
Three-Phase

Product code : 13346174

Catalog # : 50036OT3G447/9TS-W40



Performance : 380 V 50 Hz 2P IE3

Rated current : 582 A
LRC : 6.3
Rated torque : 797 ft.lb
Locked rotor torque : 180 %
Breakdown torque : 220 %
Rated speed : 2965 rpm

Moment of inertia (J) : 46.9 sq.ft.lb
Duty cycle : Cont.(S1)
Insulation class : F
Service factor : 1.15
Temperature rise : 80 K
Design : A

Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page 35 / 37	Revision
Checked by				
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VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

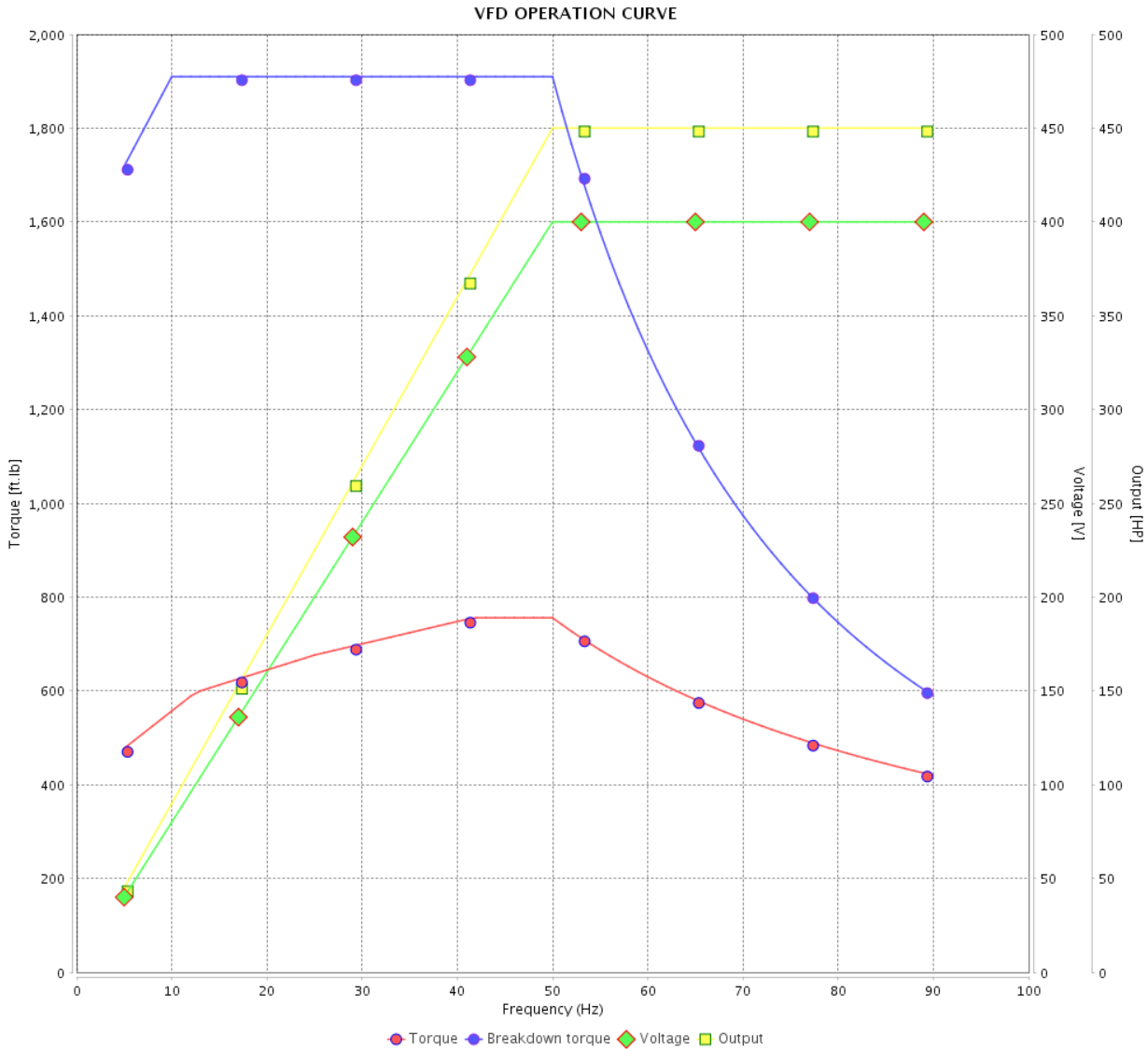


Customer : _____

Product line : W40 NEMA Premium Efficiency
Three-Phase

Product code : 13346174

Catalog # : 50036OT3G447/9TS-W40



Performance : 400 V 50 Hz 2P IE3

Rated current	: 559 A	Moment of inertia (J)	: 46.9 sq.ft.lb
LRC	: 7.0	Duty cycle	: Cont.(S1)
Rated torque	: 796 ft.lb	Insulation class	: F
Locked rotor torque	: 200 %	Service factor	: 1.15
Breakdown torque	: 240 %	Temperature rise	: 80 K
Rated speed	: 2970 rpm	Design	: A

Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page	Revision
Checked by				
Date				
			36 / 37	

VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

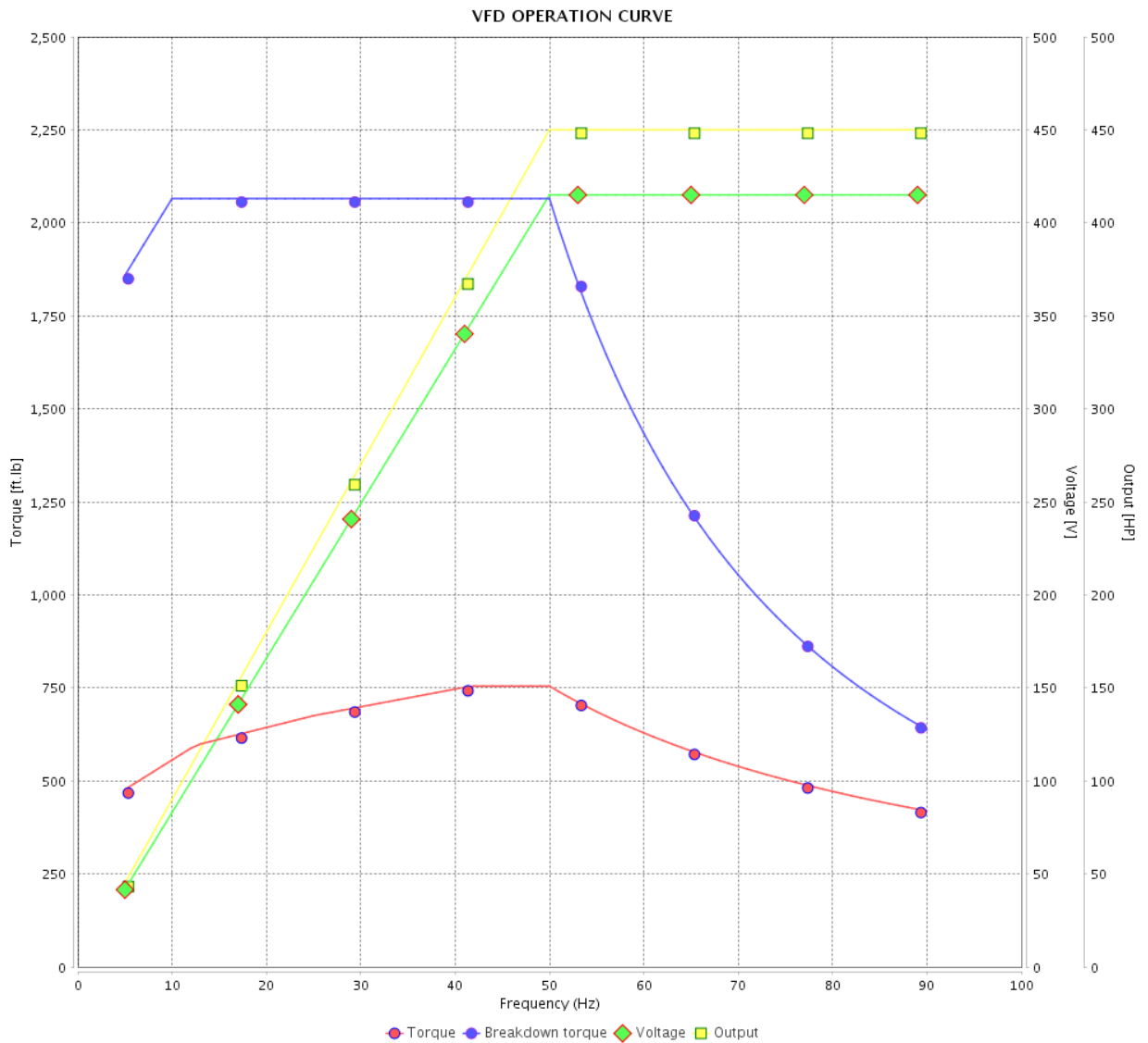


Customer :

Product line : W40 NEMA Premium Efficiency
Three-Phase

Product code : 13346174

Catalog # : 50036OT3G447/9TS-W40

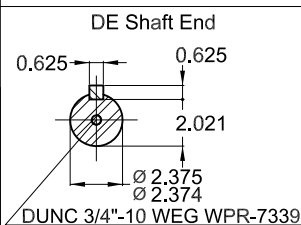
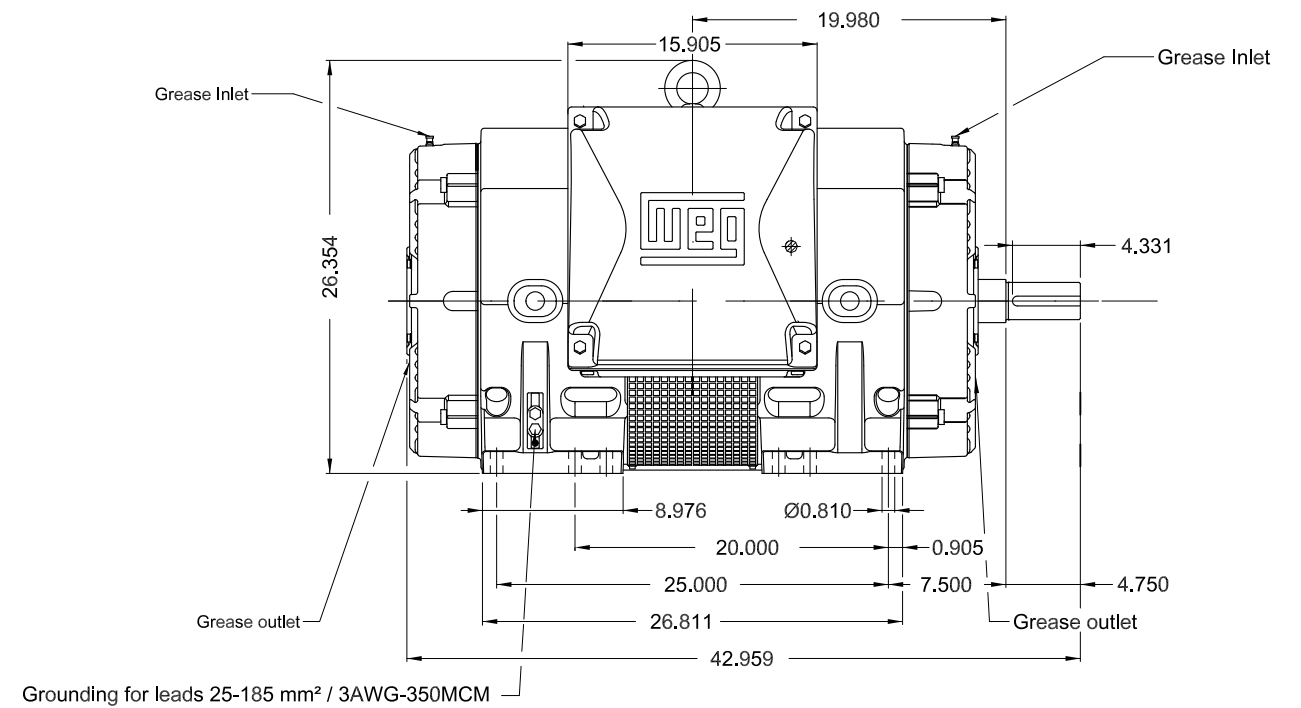
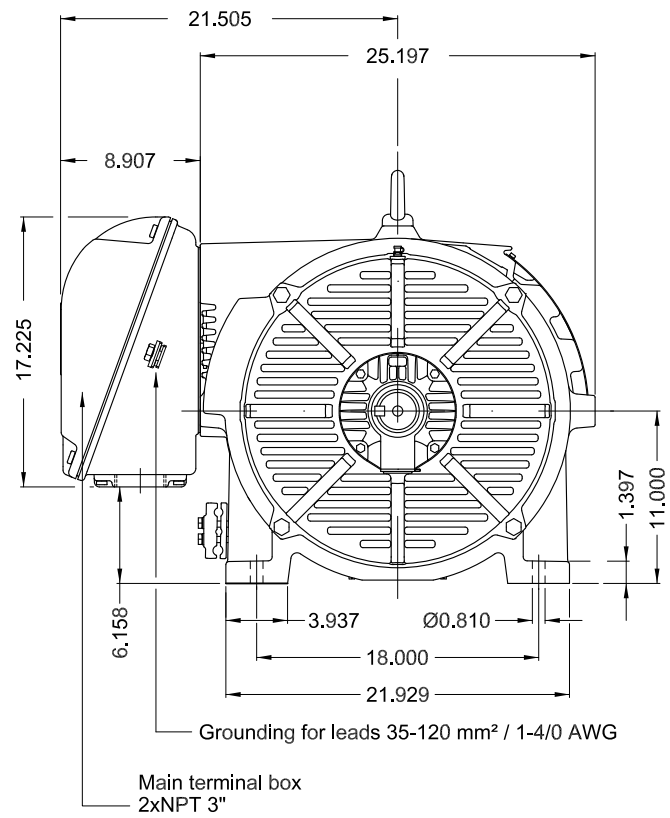


Performance : 415 V 50 Hz 2P IE3

Rated current : 545 A
LRC : 7.8
Rated torque : 794 ft.lb
Locked rotor torque : 220 %
Breakdown torque : 260 %
Rated speed : 2975 rpm

Moment of inertia (J) : 46.9 sq.ft.lb
Duty cycle : Cont.(S1)
Insulation class : F
Service factor : 1.15
Temperature rise : 80 K
Design : A

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Date	12/04/2022			



Color RAL 5009
 Painting plan 203A
 Mounting NEMA F-1
 Mounting B3R(D)

500 HP 02 Poles 60 Hz

Dimensions in inches

1:12

ECM	LOC	SUMMARY OF MODIFICATIONS	EXECUTED	CHECKED	RELEASED	DATE	VER
EXECUTED	PIRWBUSER	THREE PH. MOTOR W40 PREM. EFF.					
CHECKED		FRAME 447/9TS IP23 ODP					
RELEASED							
REL DT.	WMO	Jaragua do Sul	Product Engineering				

PREVIEW
 WDD



SHEET 1 / 1

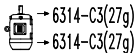
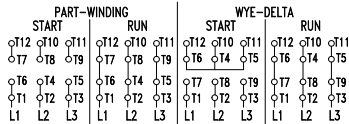
MODEL 500360T3G447/9TS-W40
MADE IN BRAZIL
13346174



MOD.T01#FOXON



PH 3	FR 447/9TS	HP(kW) 500(370)	Hz 60
V 460	A 536	IP23	
NEMA NOM EFF	96.2 %	RPM 3570	
ENCL ODP	DUTY CONT.	INS. CL. F ΔT 80 K	
PF 0.90	DES A	CODE G	AMB. 40°C
SF 1.15	SFA 616	ALT 1000 m.a.s.l.	



MOBIL POLYREX EM
14418 h

2202 Lbs