

DATA SHEET

Three Phase Induction Motor - Squirrel Cage



Customer : _____

Product line : W22 IEEE 841 NEMA Premium Efficiency Three-Phase Product code : 16689696
 Catalog # : 02018ST3QAP256T-W22

Frame : 254/6T	Cooling method : IC411 - TEFC
Insulation class : F	Mounting : W-8
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 : 344 lb
Protection degree : IP56	Moment of inertia (J) : 3.10 sq.ft.lb
Design : B	

Output [HP]	20	15	15	15	20	20	20
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]	24.1	21.8	21.2	20.6	29.4	28.0	27.1
L. R. Amperes [A]	157	161	167	173	168	174	179
LRC [A]	6.5x(Code G)	7.4x(Code H)	7.9x(Code J)	8.4x(Code K)	5.7x(Code F)	6.2x(Code G)	6.6x(Code H)
No load current [A]	8.80	8.60	9.10	9.60	8.60	9.10	9.60
Rated speed [RPM]	1770	1475	1477	1479	1455	1460	1465
Slip [%]	1.67	1.67	1.53	1.40	3.00	2.67	2.33
Rated torque [ft.lb]	59.3	53.4	53.3	53.3	72.2	71.9	71.7
Locked rotor torque [%]	240	250	280	300	190	210	229
Breakdown torque [%]	260	290	320	340	210	229	260
Service factor	1.15	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	41s (cold) 23s (hot)	41s (cold) 23s (hot)	39s (cold) 22s (hot)	37s (cold) 21s (hot)	21s (cold) 12s (hot)	23s (cold) 13s (hot)	23s (cold) 13s (hot)
Noise level ²	64.0 dB(A)	61.0 dB(A)	61.0 dB(A)	61.0 dB(A)	61.0 dB(A)	61.0 dB(A)	61.0 dB(A)
Efficiency (%)	25%	91.0	90.9	89.2	89.2	92.3	90.8
	50%	91.7	91.0	89.8	89.8	91.7	91.0
	75%	92.4	91.5	91.0	91.3	91.0	91.0
	100%	93.0	91.4	91.4	91.7	90.2	91.0
Power Factor	25%	0.44	0.42	0.39	0.37	0.51	0.48
	50%	0.68	0.65	0.62	0.60	0.75	0.72
	75%	0.79	0.78	0.75	0.73	0.83	0.81
	100%	0.84	0.84	0.82	0.81	0.86	0.85

Losses at normative operating points (speed;torque), in percentage of rated output power

Losses (%)	P1 (0,9;1,0)	7.5	7.5	7.5	7.5	7.5	7.5
	P2 (0,5;1,0)	6.4	6.4	6.4	6.4	6.4	6.4
	P3 (0,25;1,0)	5.9	5.9	5.9	5.9	5.9	5.9
	P4 (0,9;0,5)	3.5	3.5	3.5	3.5	3.5	3.5
	P5 (0,5;0,5)	2.5	2.5	2.5	2.5	2.5	2.5
	P6 (0,5;0,25)	1.6	1.6	1.6	1.6	1.6	1.6
	P7 (0,25;0,25)	1.1	1.1	1.1	1.1	1.1	1.1

	<u>Drive end</u>	<u>Non drive end</u>	Foundation loads
Bearing type :	NU-309 C3	6209 C3	Max. traction : 722 lb
Sealing :	Inpro/Seal	Inpro/Seal	Max. compression : 1066 lb
Lubrication interval :	14000 h	19000 h	
Lubricant amount :	13 g	9 g	
Lubricant type :	Mobil Polyrex EM		

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Three Phase Induction Motor - Squirrel Cage



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Notes

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TORQUE AND CURRENT VS SPEED CURVE



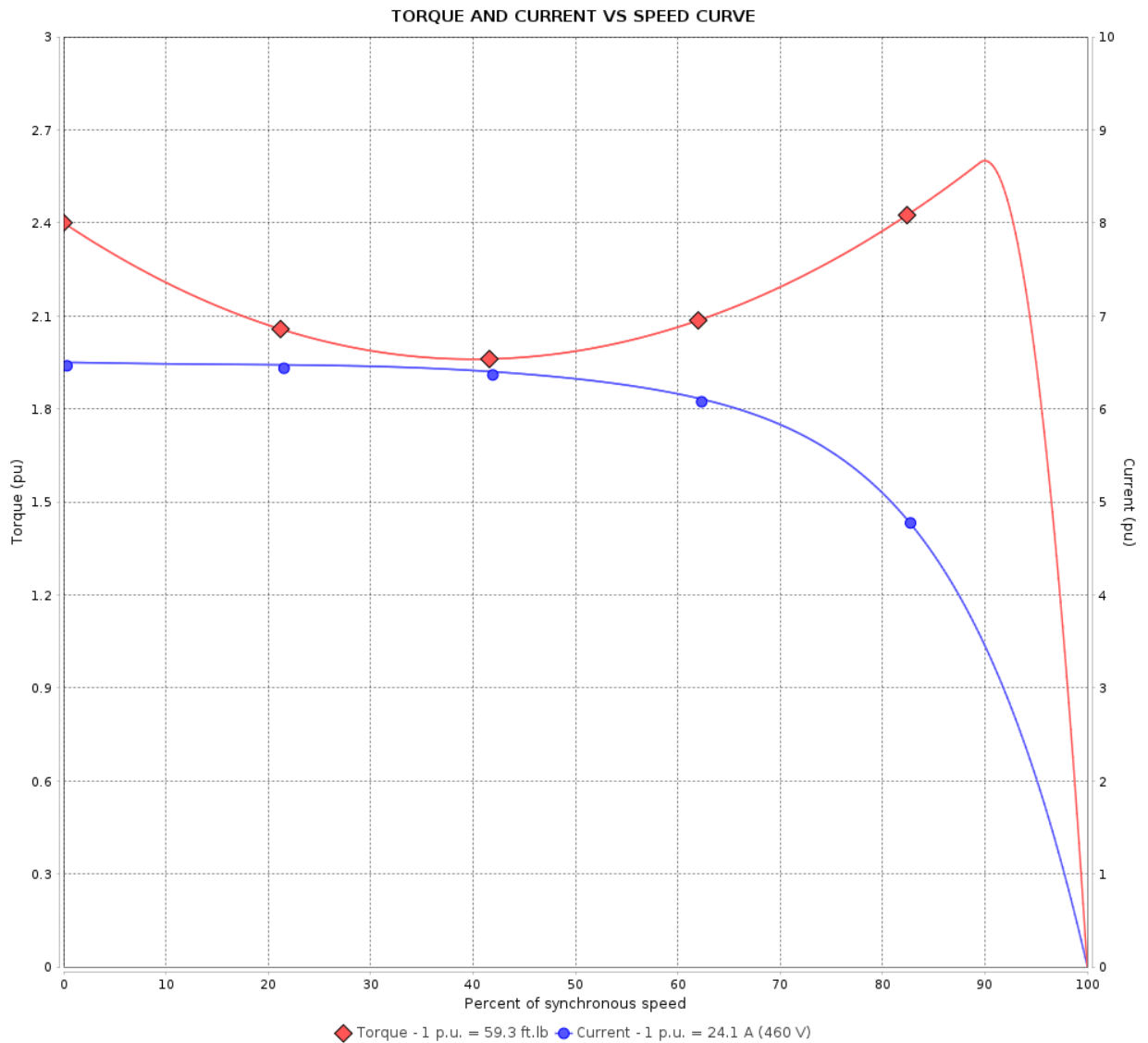
Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : W22 IEEE 841 NEMA Premium Efficiency Three-Phase

Product code : 16689696

Catalog # : 02018ST3QAP256T-W22



Performance : 460 V 60 Hz 4P

Rated current	: 24.1 A	Moment of inertia (J)	: 3.10 sq.ft.lb
LRC	: 6.5	Duty cycle	: Cont.(S1)
Rated torque	: 59.3 ft.lb	Insulation class	: F
Locked rotor torque	: 240 %	Service factor	: 1.15
Breakdown torque	: 260 %	Temperature rise	: 80 K
Rated speed	: 1770 rpm	Design	: B

Locked rotor time : 41s (cold) 23s (hot)

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TORQUE AND CURRENT VS SPEED CURVE

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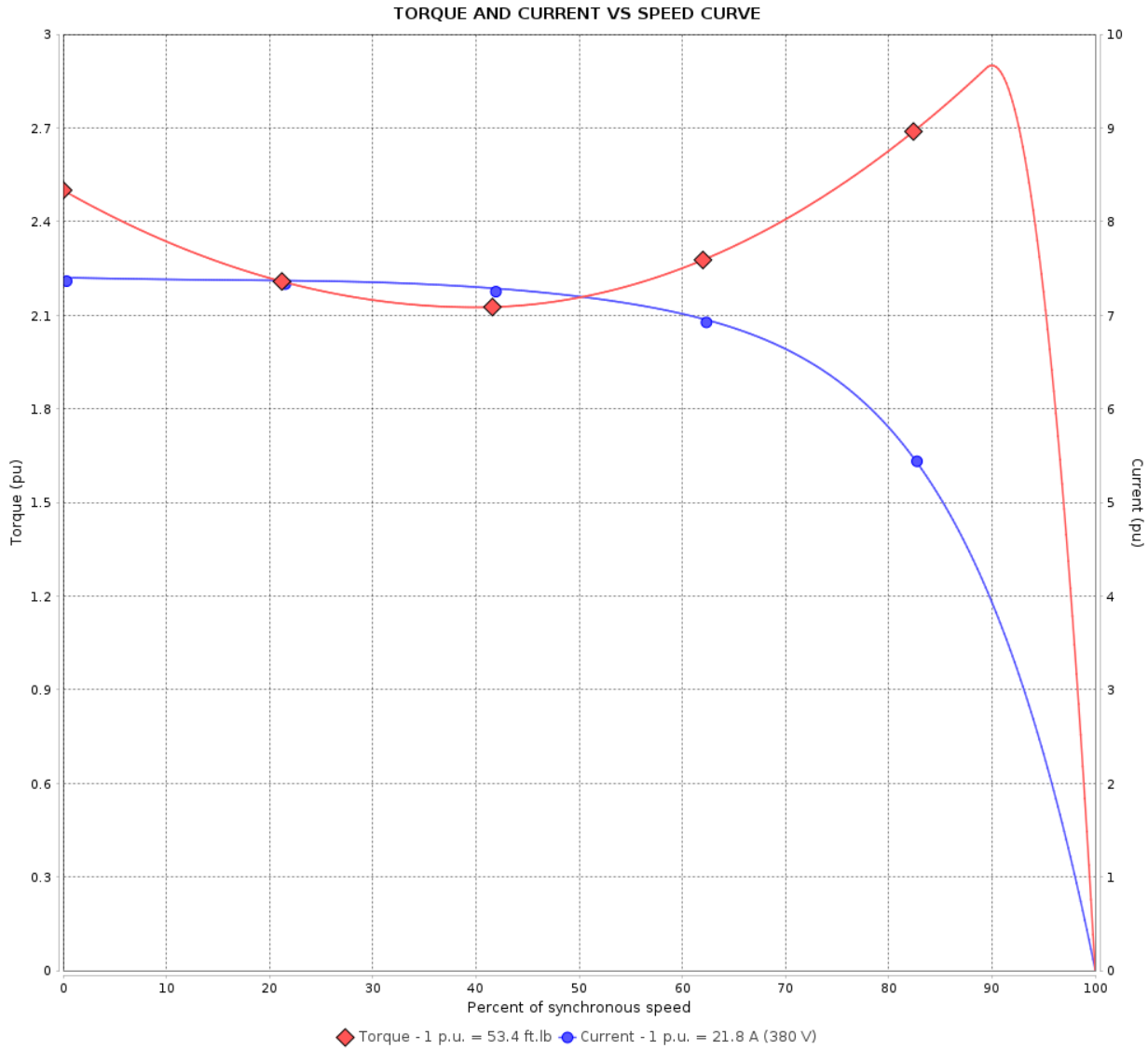


Customer :

Product line : W22 IEEE 841 NEMA Premium Efficiency
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Catalog # : 02018ST3QAP256T-W22



Performance : 380 V 50 Hz 4P IE3

Rated current	: 21.8 A	Moment of inertia (J)	: 3.10 sq.ft.lb
LRC	: 7.4	Duty cycle	: Cont.(S1)
Rated torque	: 53.4 ft.lb	Insulation class	: F
Locked rotor torque	: 250 %	Service factor	: 1.00
Breakdown torque	: 290 %	Temperature rise	: 80 K
Rated speed	: 1475 rpm	Design	: B

Locked rotor time : 41s (cold) 23s (hot)

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TORQUE AND CURRENT VS SPEED CURVE



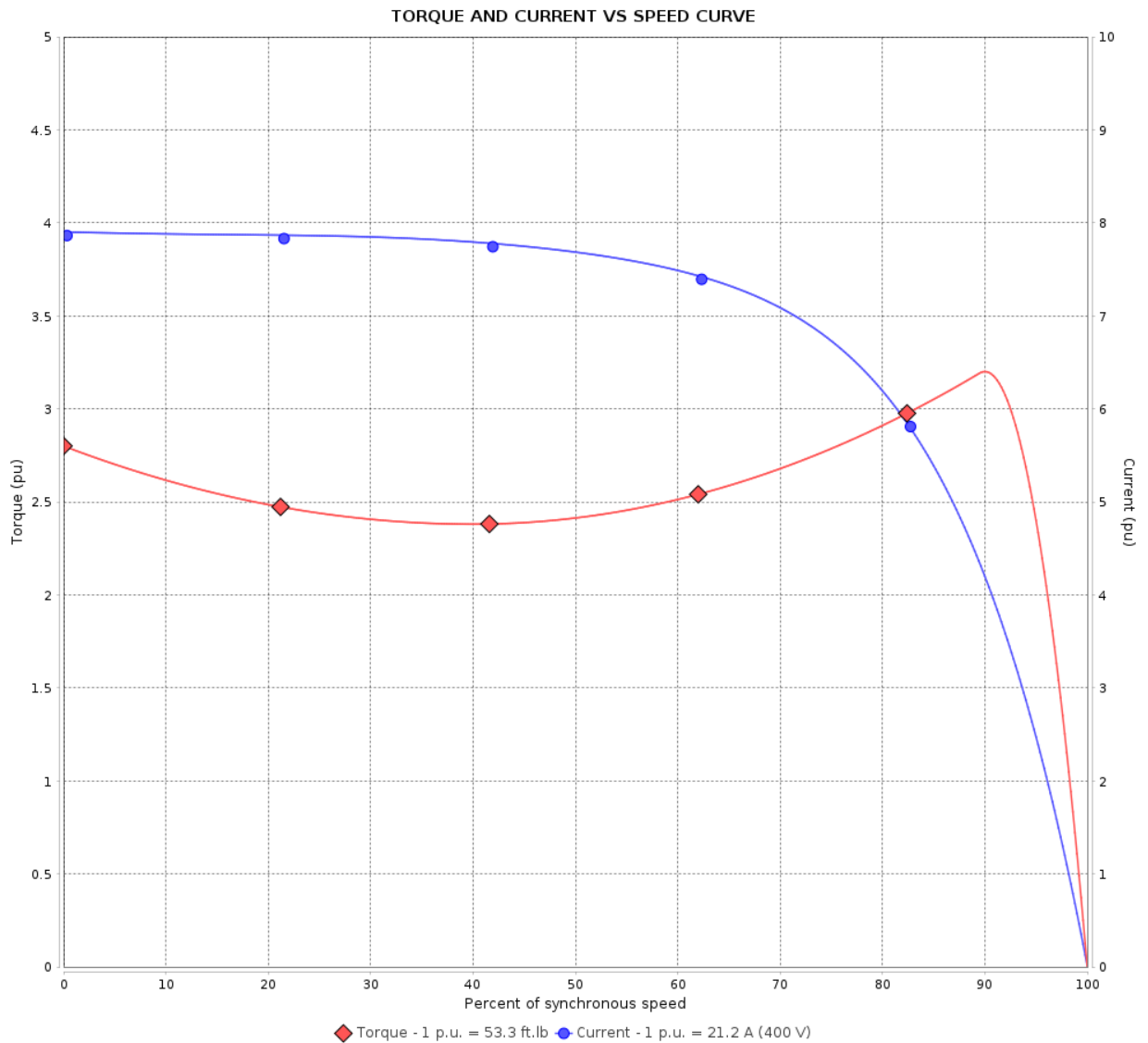
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Customer :

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Performance : 400 V 50 Hz 4P IE3

Rated current	: 21.2 A	Moment of inertia (J)	: 3.10 sq.ft.lb
LRC	: 7.9	Duty cycle	: Cont.(S1)
Rated torque	: 53.3 ft.lb	Insulation class	: F
Locked rotor torque	: 280 %	Service factor	: 1.00
Breakdown torque	: 320 %	Temperature rise	: 80 K
Rated speed	: 1477 rpm	Design	: B

Locked rotor time : 39s (cold) 22s (hot)

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TORQUE AND CURRENT VS SPEED CURVE

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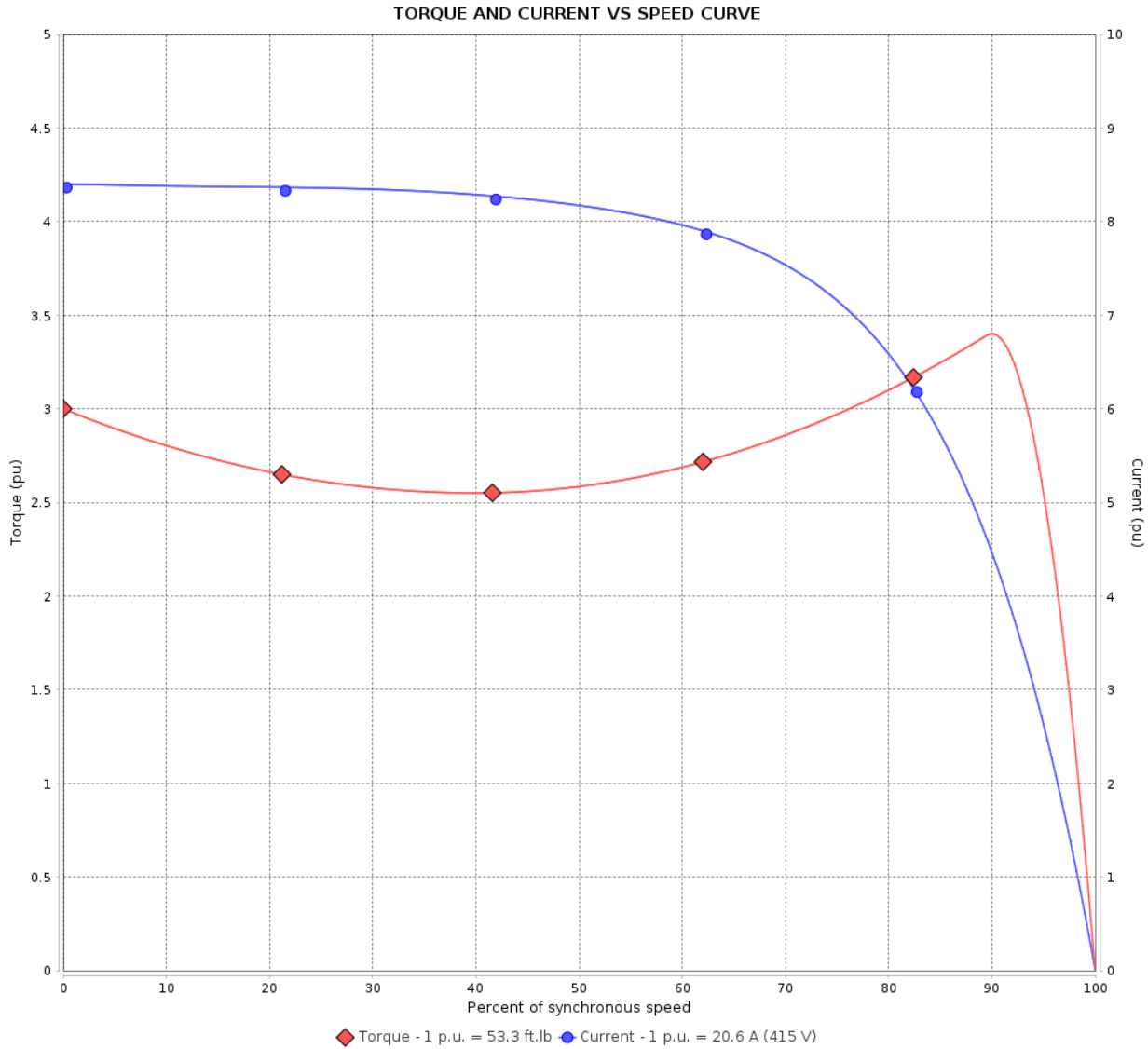


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Performance : 415 V 50 Hz 4P IE3

Rated current	: 20.6 A	Moment of inertia (J)	: 3.10 sq.ft.lb
LRC	: 8.4	Duty cycle	: Cont.(S1)
Rated torque	: 53.3 ft.lb	Insulation class	: F
Locked rotor torque	: 300 %	Service factor	: 1.00
Breakdown torque	: 340 %	Temperature rise	: 80 K
Rated speed	: 1479 rpm	Design	: B

Locked rotor time : 37s (cold) 21s (hot)

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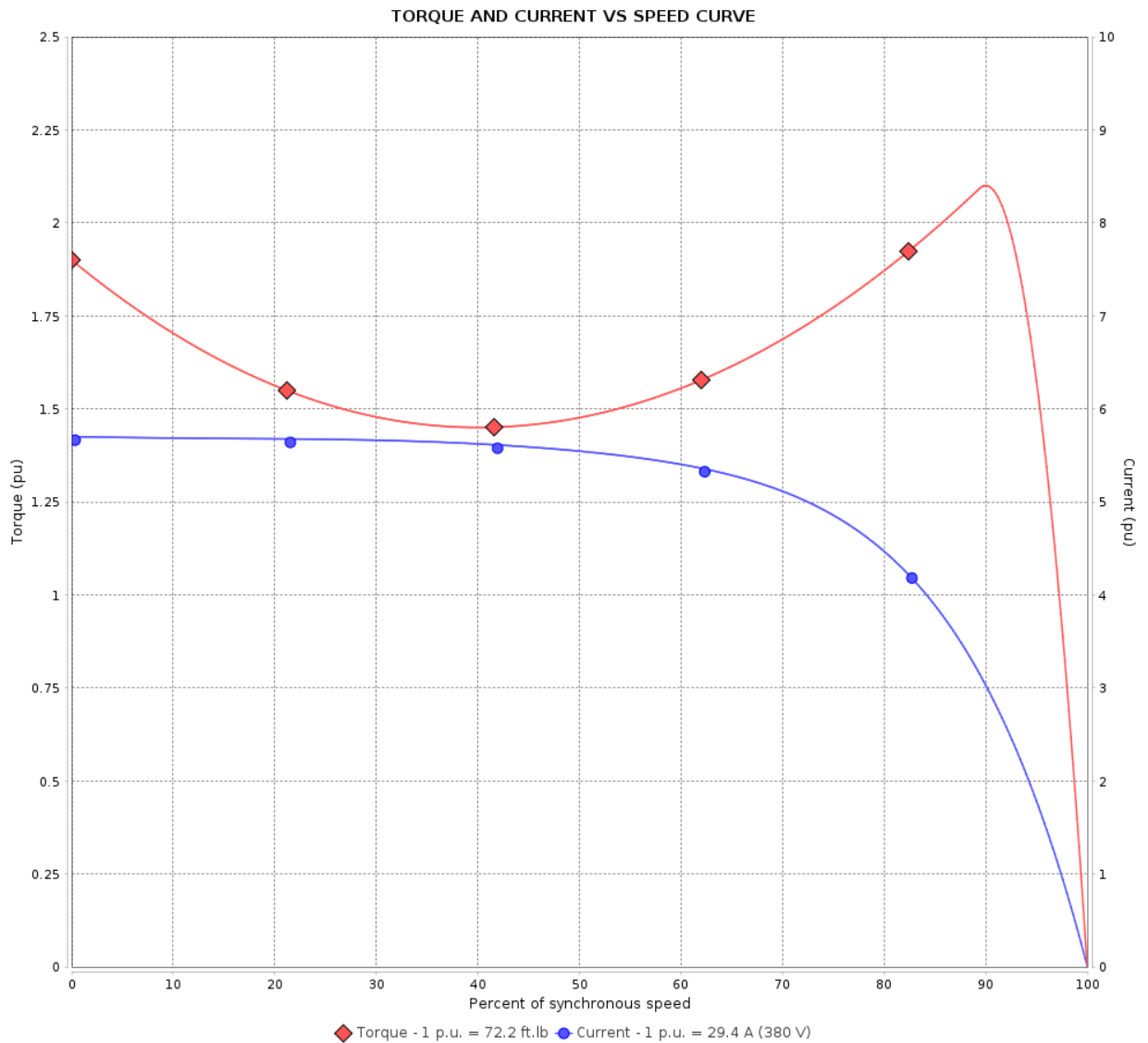
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Performance : 380 V 50 Hz 4P IE1

Rated current : 29.4 A
 LRC : 5.7
 Rated torque : 72.2 ft.lb
 Locked rotor torque : 190 %
 Breakdown torque : 210 %
 Rated speed : 1455 rpm

Moment of inertia (J) : 3.10 sq.ft.lb
 Duty cycle : Cont.(S1)
 Insulation class : F
 Service factor : 1.00
 Temperature rise : 105 K
 Design : B

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

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TORQUE AND CURRENT VS SPEED CURVE

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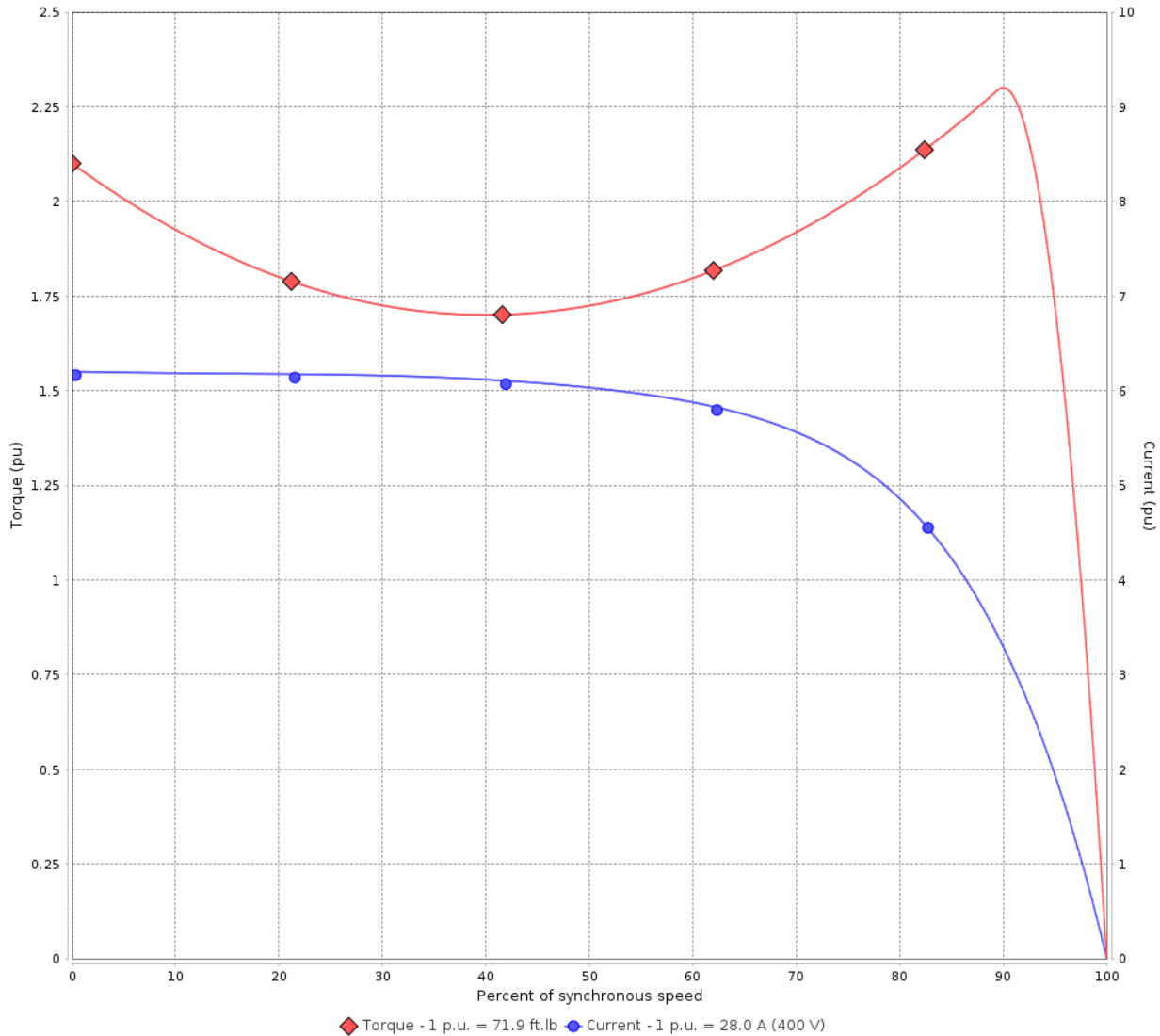
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TORQUE AND CURRENT VS SPEED CURVE



Performance : 400 V 50 Hz 4P IE2

Rated current	: 28.0 A	Moment of inertia (J)	: 3.10 sq.ft.lb
LRC	: 6.2	Duty cycle	: Cont.(S1)
Rated torque	: 71.9 ft.lb	Insulation class	: F
Locked rotor torque	: 210 %	Service factor	: 1.00
Breakdown torque	: 229 %	Temperature rise	: 105 K
Rated speed	: 1460 rpm	Design	: B

Locked rotor time : 23s (cold) 13s (hot)

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TORQUE AND CURRENT VS SPEED CURVE



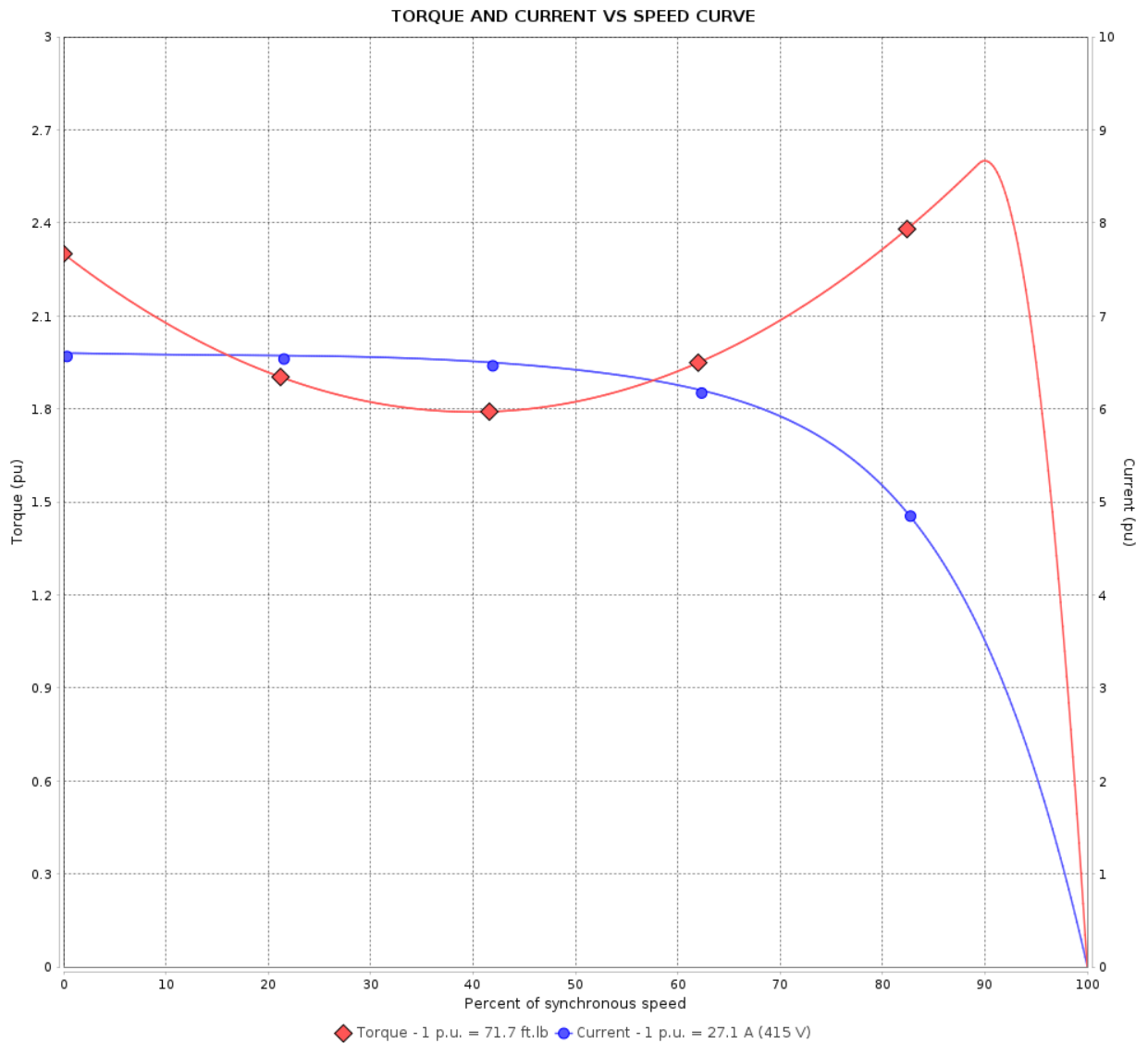
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Performance : 415 V 50 Hz 4P IE2

Rated current	: 27.1 A	Moment of inertia (J)	: 3.10 sq.ft.lb
LRC	: 6.6	Duty cycle	: Cont.(S1)
Rated torque	: 71.7 ft.lb	Insulation class	: F
Locked rotor torque	: 229 %	Service factor	: 1.00
Breakdown torque	: 260 %	Temperature rise	: 105 K
Rated speed	: 1465 rpm	Design	: B

Locked rotor time : 23s (cold) 13s (hot)

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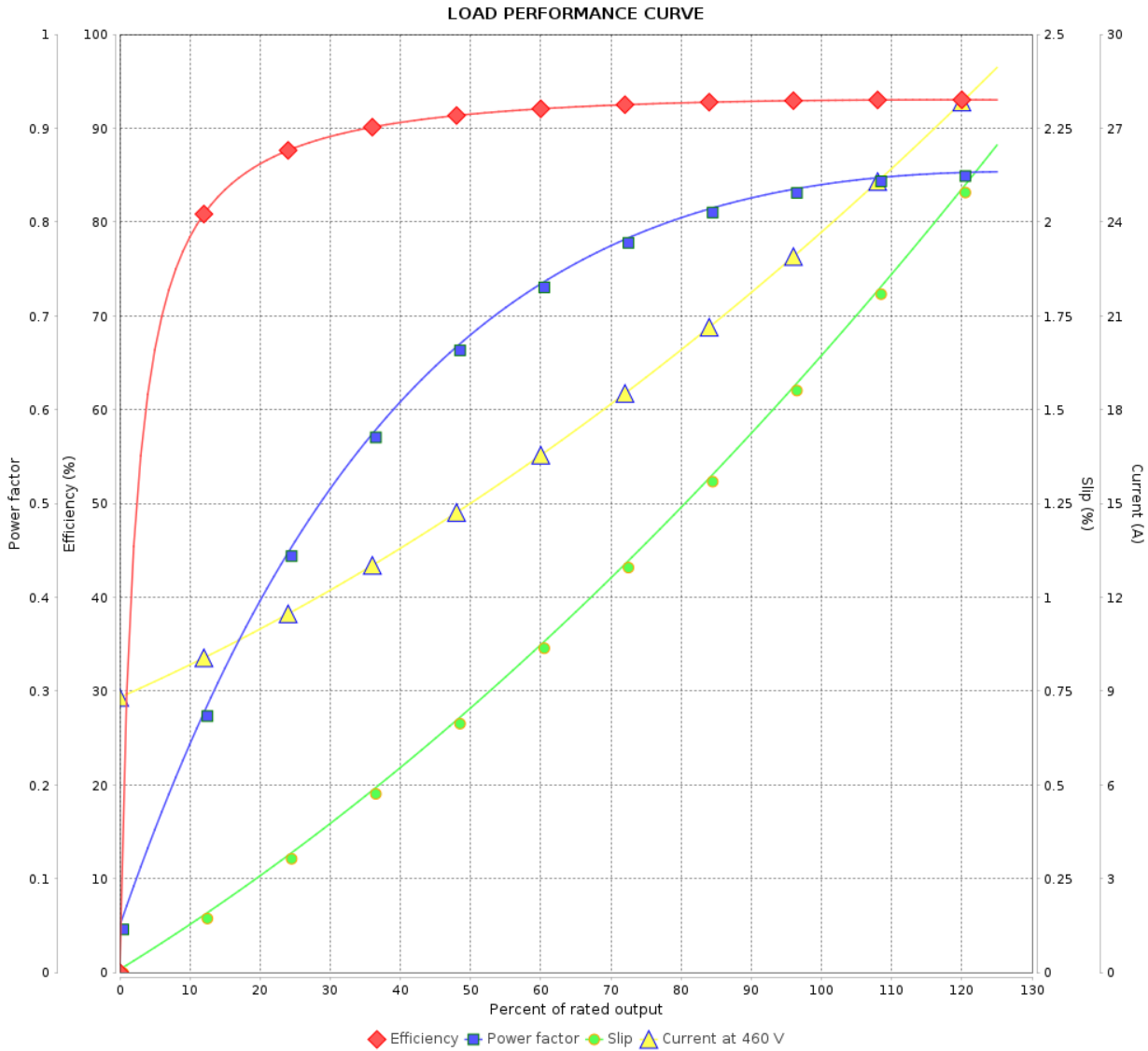


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Rated current : 24.1 A
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 Rated torque : 59.3 ft.lb
 Locked rotor torque : 240 %
 Breakdown torque : 260 %
 Rated speed : 1770 rpm

Moment of inertia (J) : 3.10 sq.ft.lb
 Duty cycle : Cont.(S1)
 Insulation class : F
 Service factor : 1.15
 Temperature rise : 80 K
 Design : B

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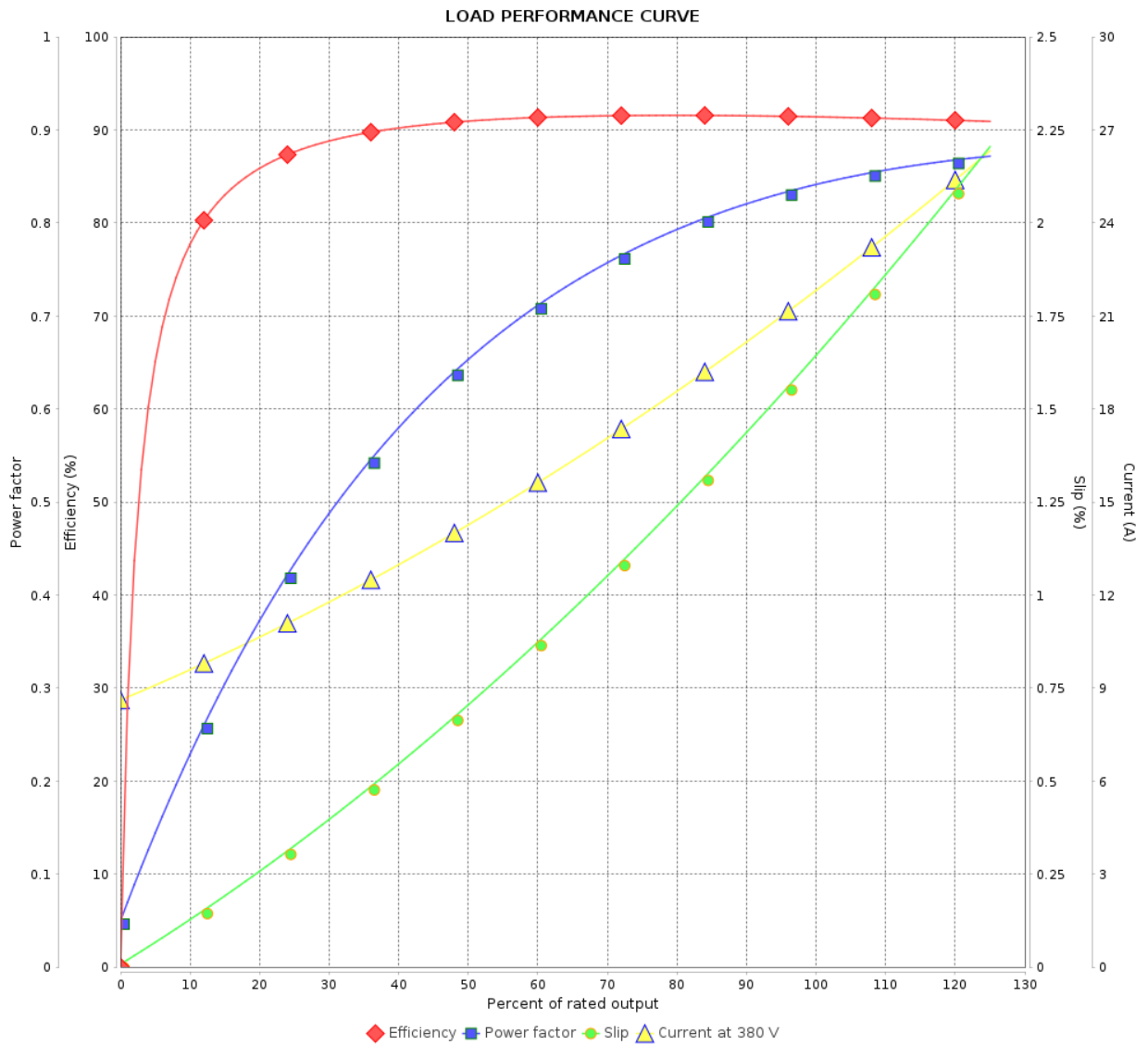


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Performance : 380 V 50 Hz 4P IE3

Rated current : 21.8 A
 LRC : 7.4
 Rated torque : 53.4 ft.lb
 Locked rotor torque : 250 %
 Breakdown torque : 290 %
 Rated speed : 1475 rpm

Moment of inertia (J) : 3.10 sq.ft.lb
 Duty cycle : Cont.(S1)
 Insulation class : F
 Service factor : 1.00
 Temperature rise : 80 K
 Design : B

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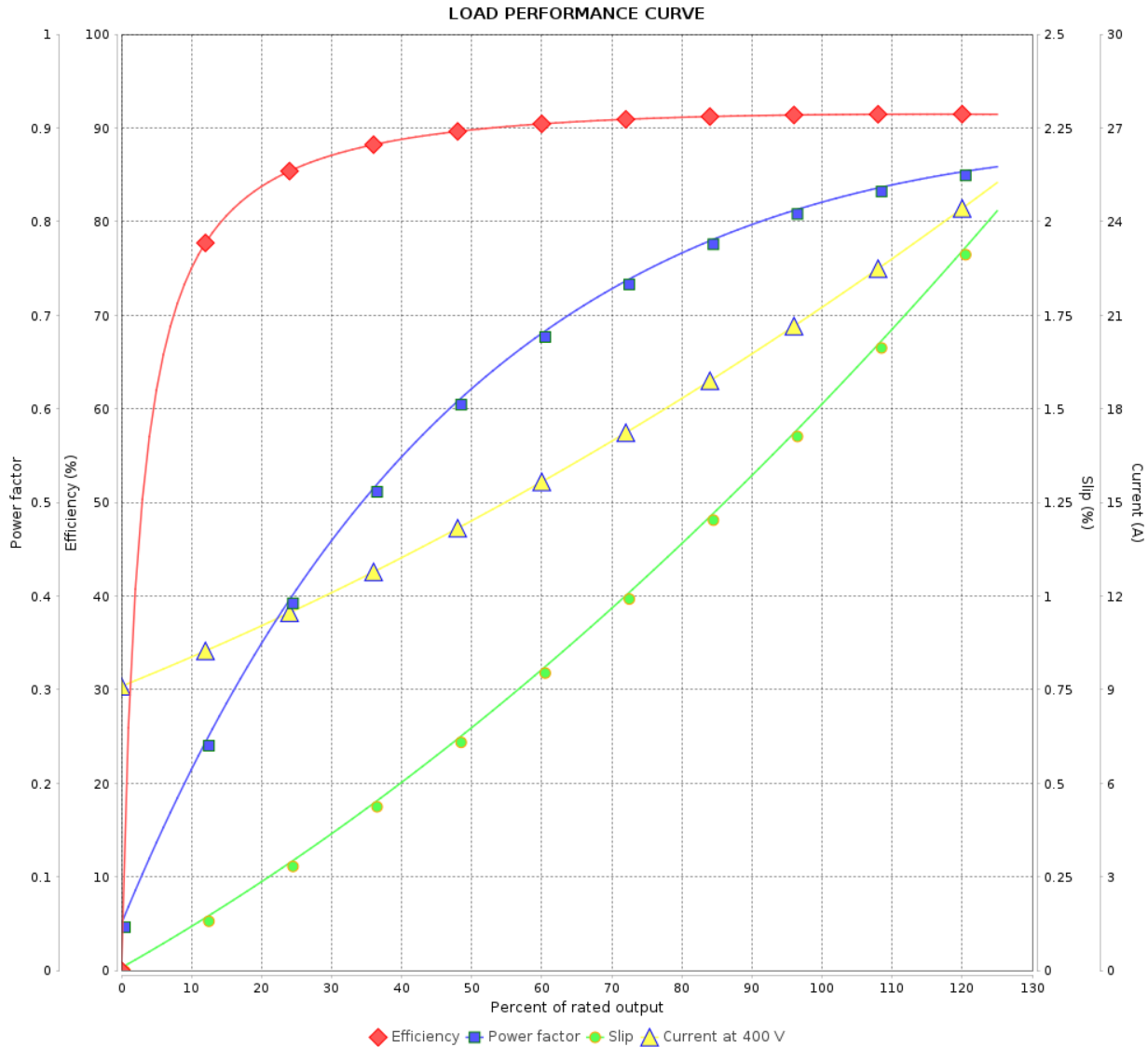


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Performance : 400 V 50 Hz 4P IE3

Rated current : 21.2 A
 LRC : 7.9
 Rated torque : 53.3 ft.lb
 Locked rotor torque : 280 %
 Breakdown torque : 320 %
 Rated speed : 1477 rpm

Moment of inertia (J) : 3.10 sq.ft.lb
 Duty cycle : Cont.(S1)
 Insulation class : F
 Service factor : 1.00
 Temperature rise : 80 K
 Design : B

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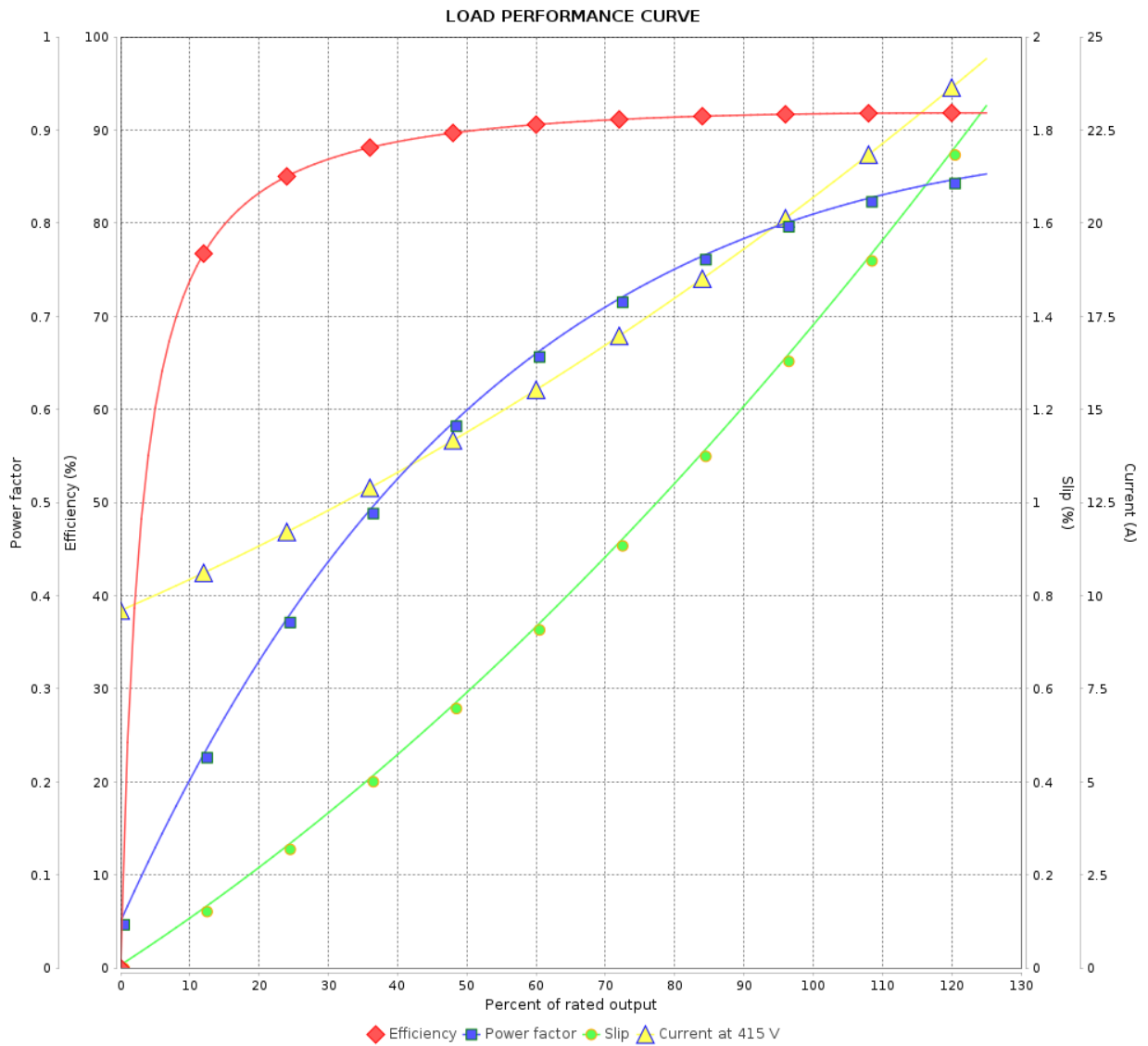


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Performance : 415 V 50 Hz 4P IE3

Rated current : 20.6 A
 LRC : 8.4
 Rated torque : 53.3 ft.lb
 Locked rotor torque : 300 %
 Breakdown torque : 340 %
 Rated speed : 1479 rpm

Moment of inertia (J) : 3.10 sq.ft.lb
 Duty cycle : Cont.(S1)
 Insulation class : F
 Service factor : 1.00
 Temperature rise : 80 K
 Design : B

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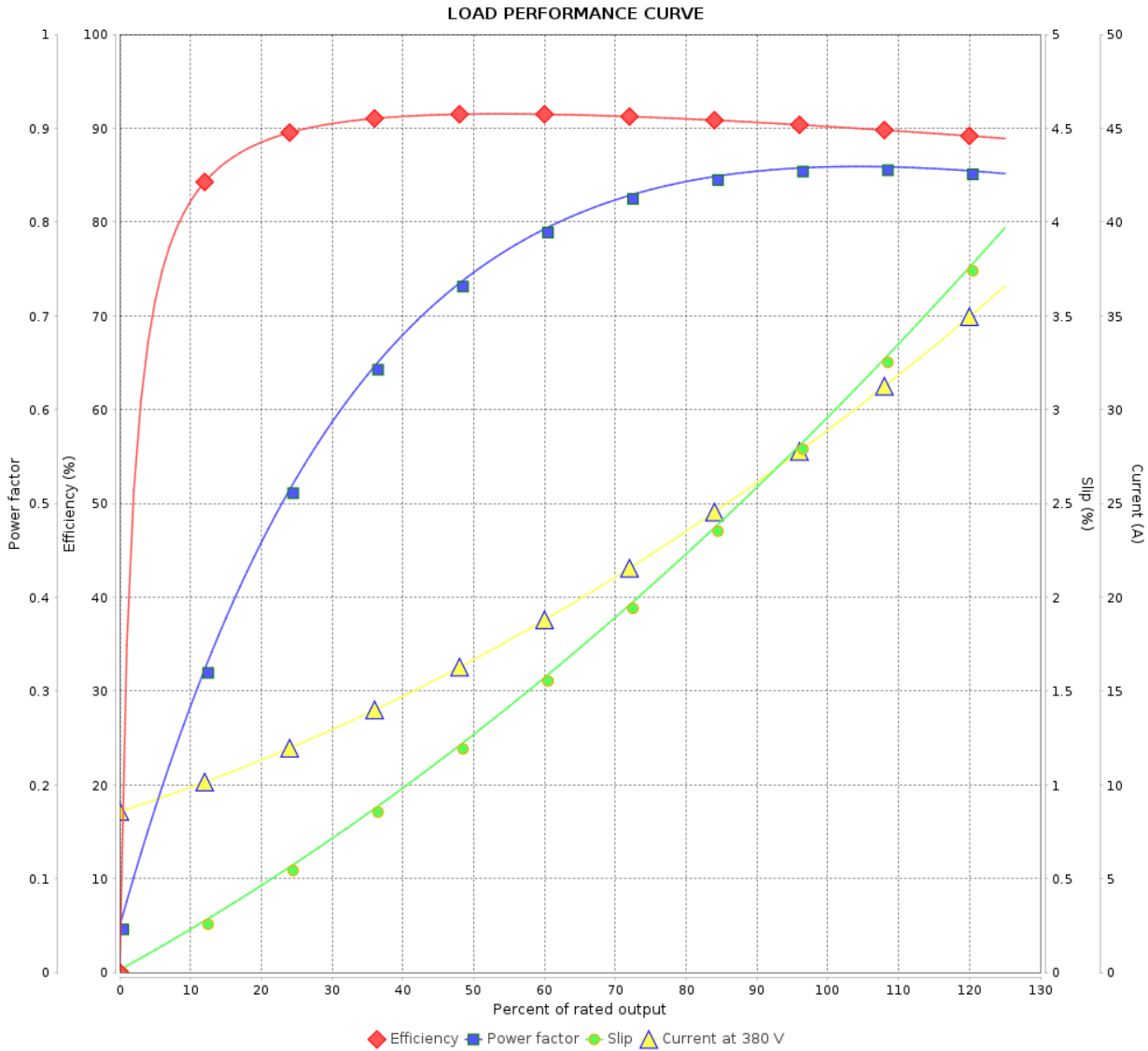


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Performance : 380 V 50 Hz 4P IE1

Rated current : 29.4 A
 LRC : 5.7
 Rated torque : 72.2 ft.lb
 Locked rotor torque : 190 %
 Breakdown torque : 210 %
 Rated speed : 1455 rpm

Moment of inertia (J) : 3.10 sq.ft.lb
 Duty cycle : Cont.(S1)
 Insulation class : F
 Service factor : 1.00
 Temperature rise : 105 K
 Design : B

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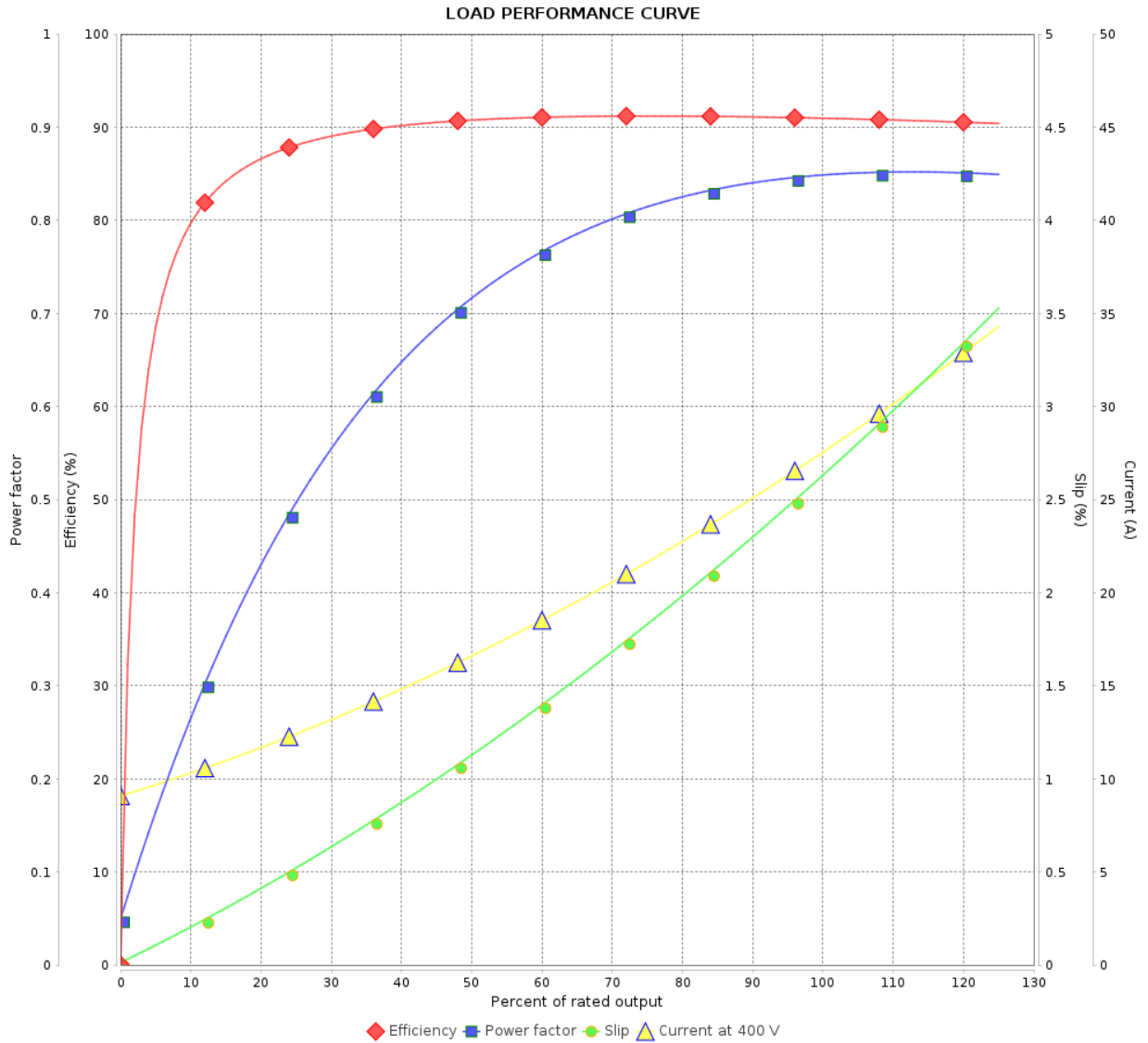


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Rated current : 28.0 A
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 Breakdown torque : 229 %
 Rated speed : 1460 rpm

Moment of inertia (J) : 3.10 sq.ft.lb
 Duty cycle : Cont.(S1)
 Insulation class : F
 Service factor : 1.00
 Temperature rise : 105 K
 Design : B

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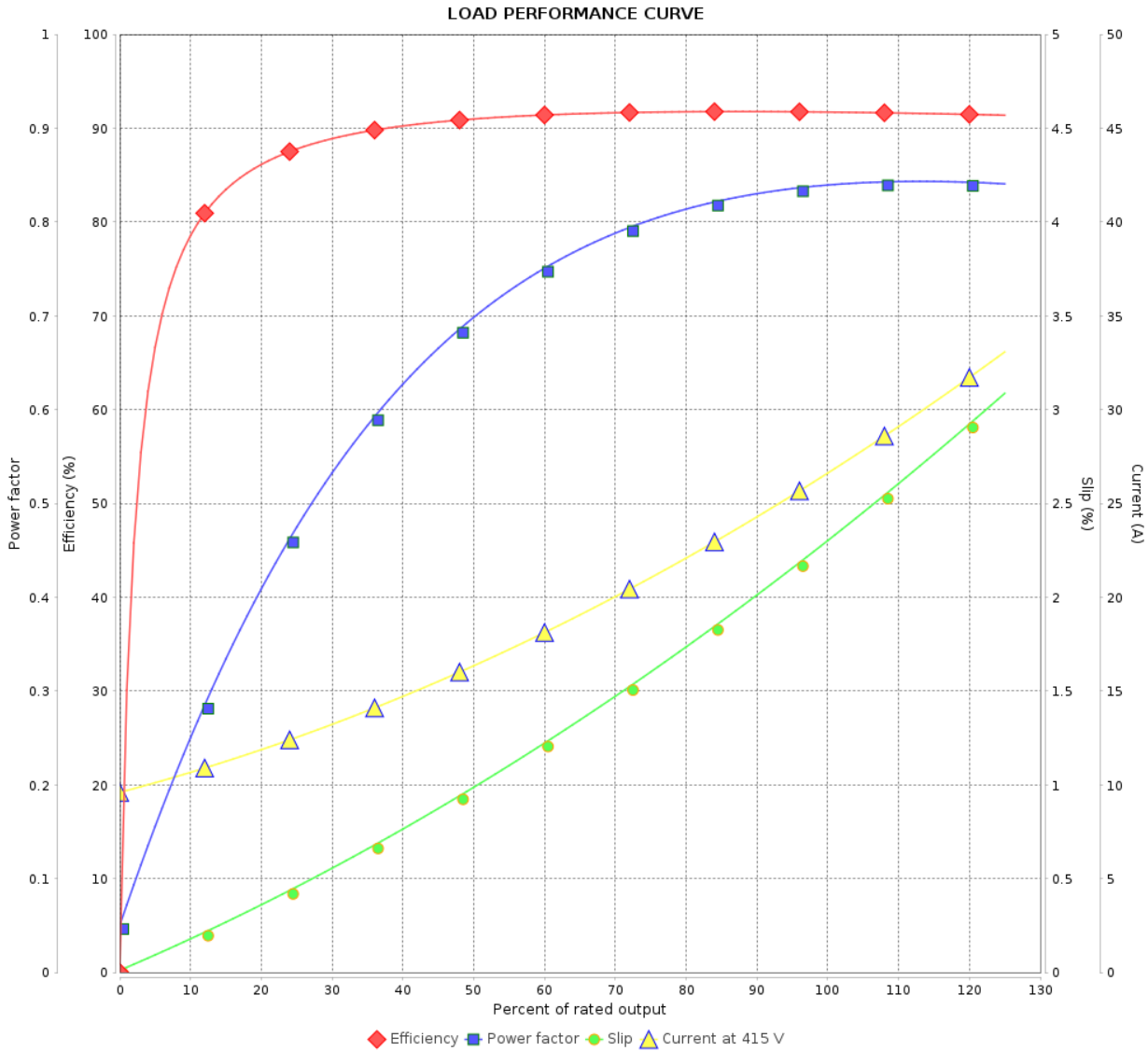


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Moment of inertia (J) : 3.10 sq.ft.lb
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 Insulation class : F
 Service factor : 1.00
 Temperature rise : 105 K
 Design : B

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Moment of inertia (J) : 3.10 sq.ft.lb
Duty cycle : Cont.(S1)
Insulation class : F
Service factor : 1.15
Temperature rise : 80 K
Design : B

Heating constant

Cooling constant

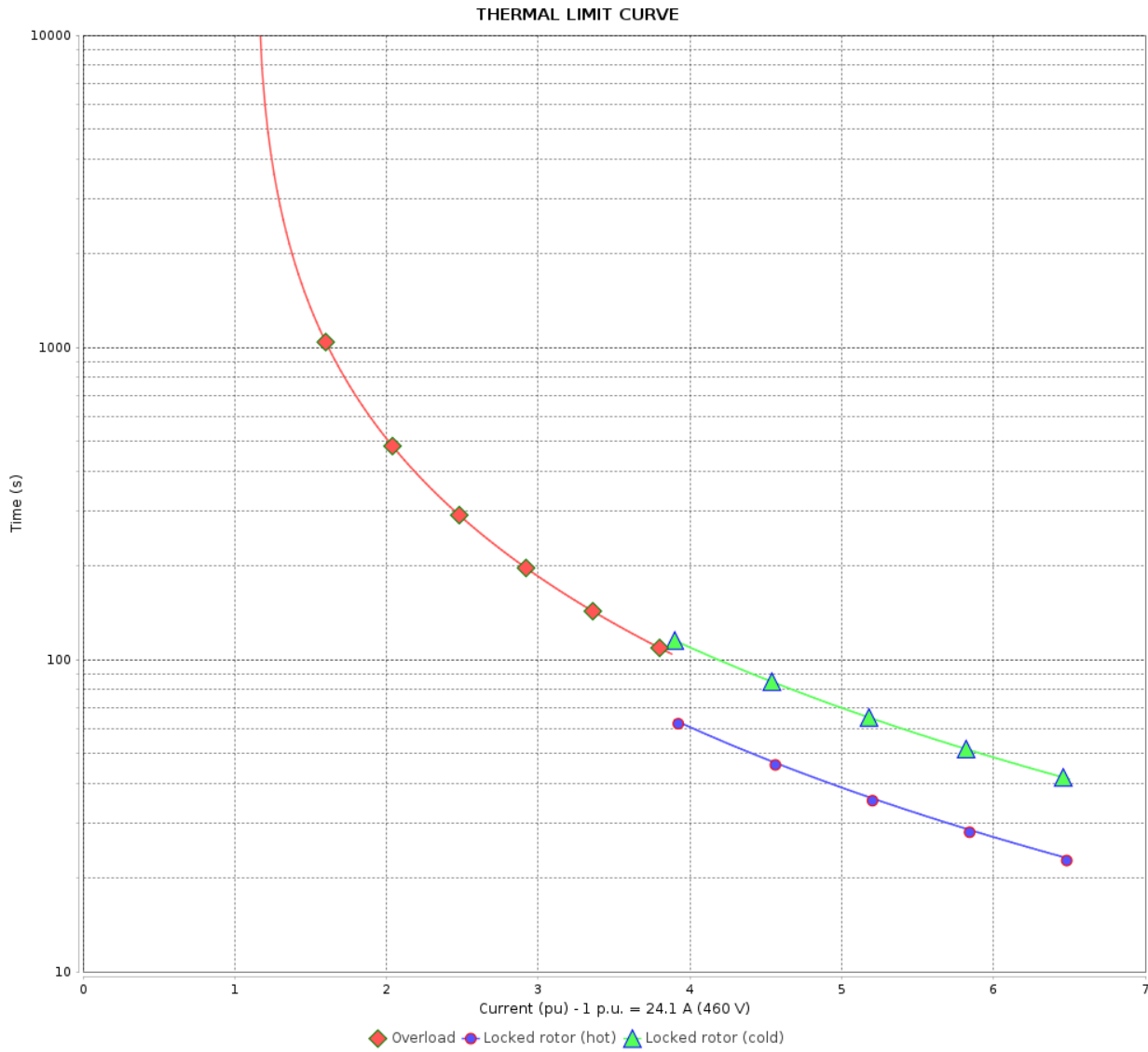
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LRC : 7.4	Duty cycle : Cont.(S1)
Rated torque : 53.4 ft.lb	Insulation class : F
Locked rotor torque : 250 %	Service factor : 1.00
Breakdown torque : 290 %	Temperature rise : 80 K
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Cooling constant

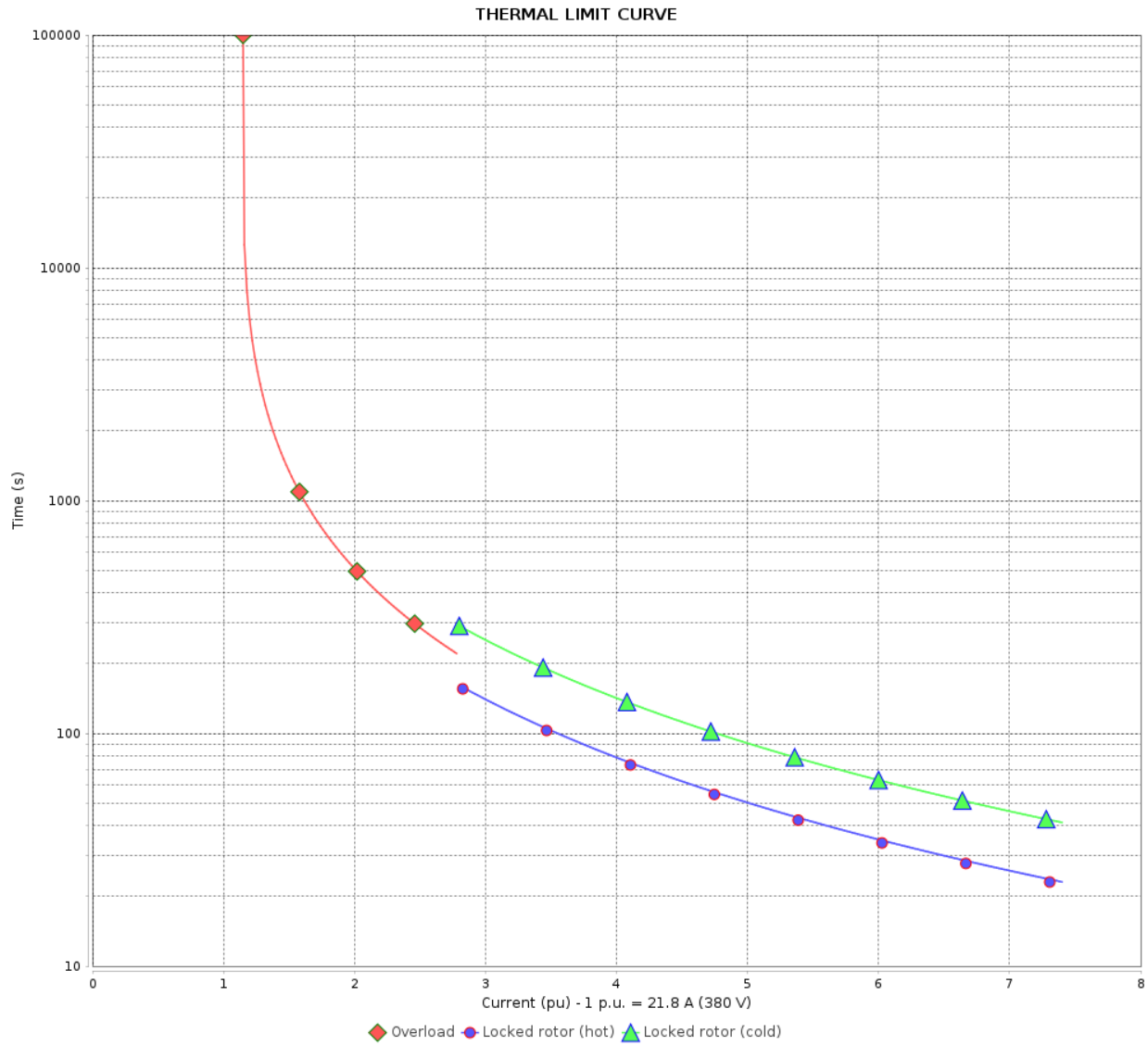
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Rated torque : 53.3 ft.lb	Insulation class : F
Locked rotor torque : 280 %	Service factor : 1.00
Breakdown torque : 320 %	Temperature rise : 80 K
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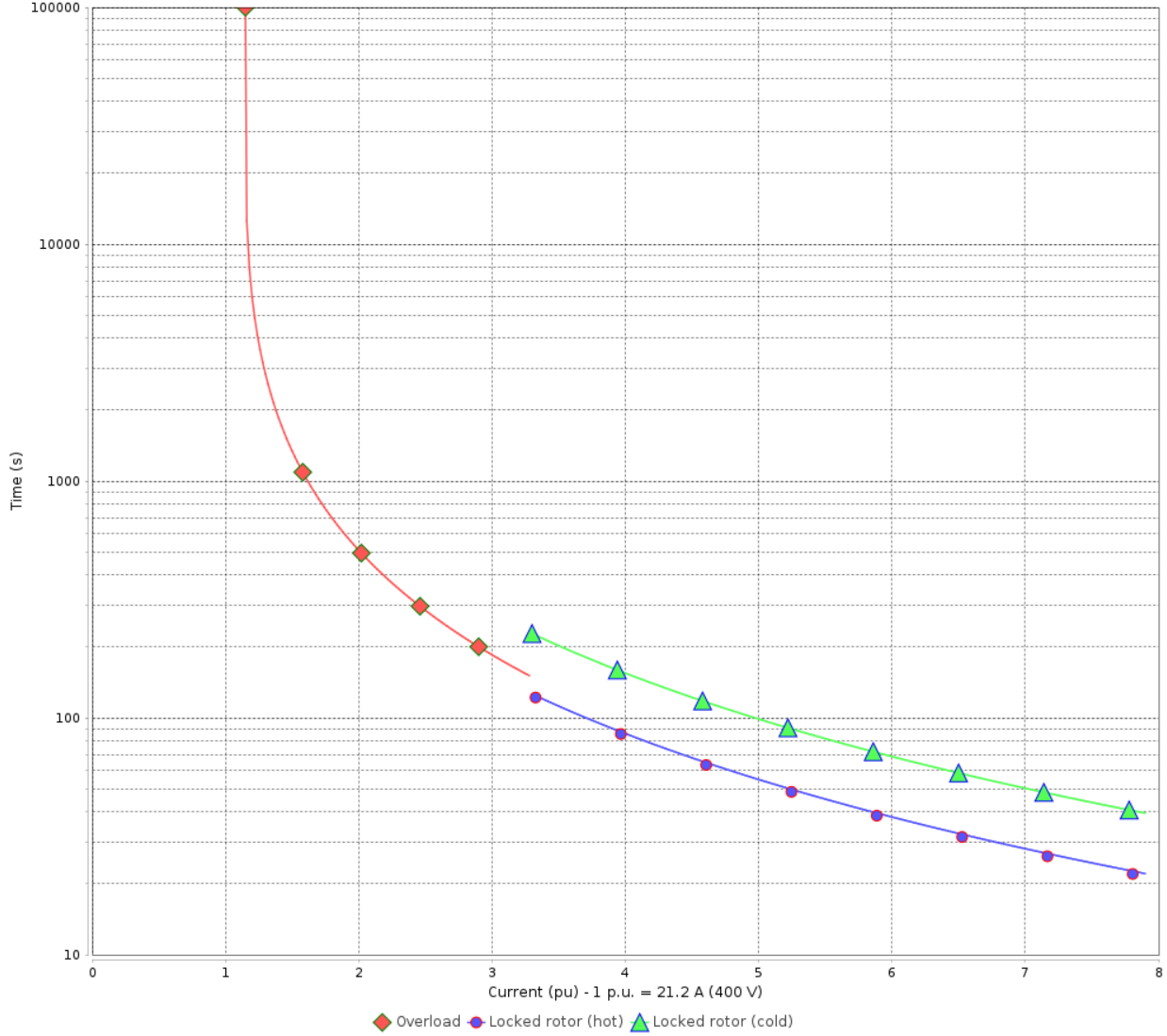
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Rated torque : 53.3 ft.lb	Insulation class : F
Locked rotor torque : 300 %	Service factor : 1.00
Breakdown torque : 340 %	Temperature rise : 80 K
Rated speed : 1479 rpm	Design : B

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Cooling constant

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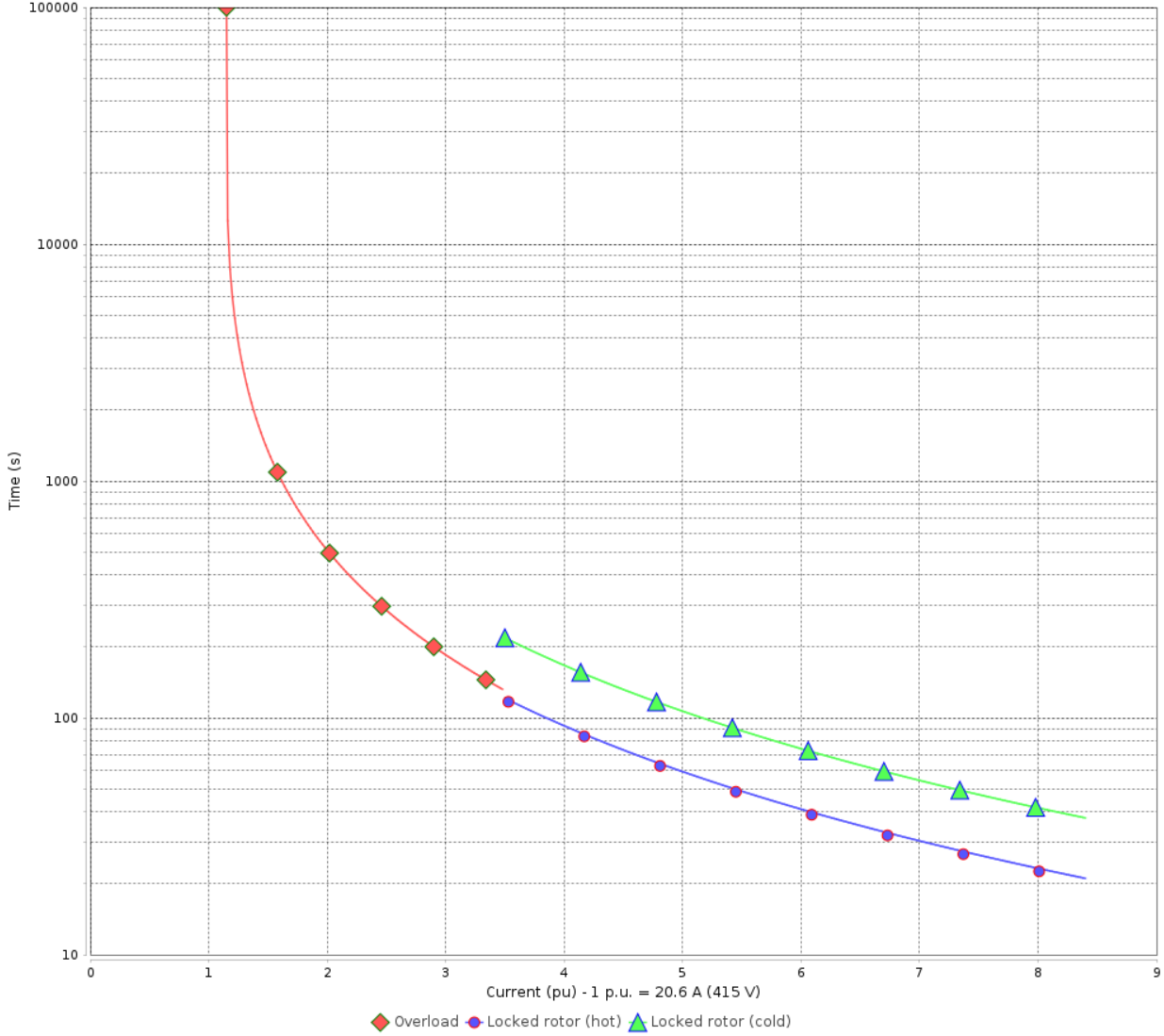
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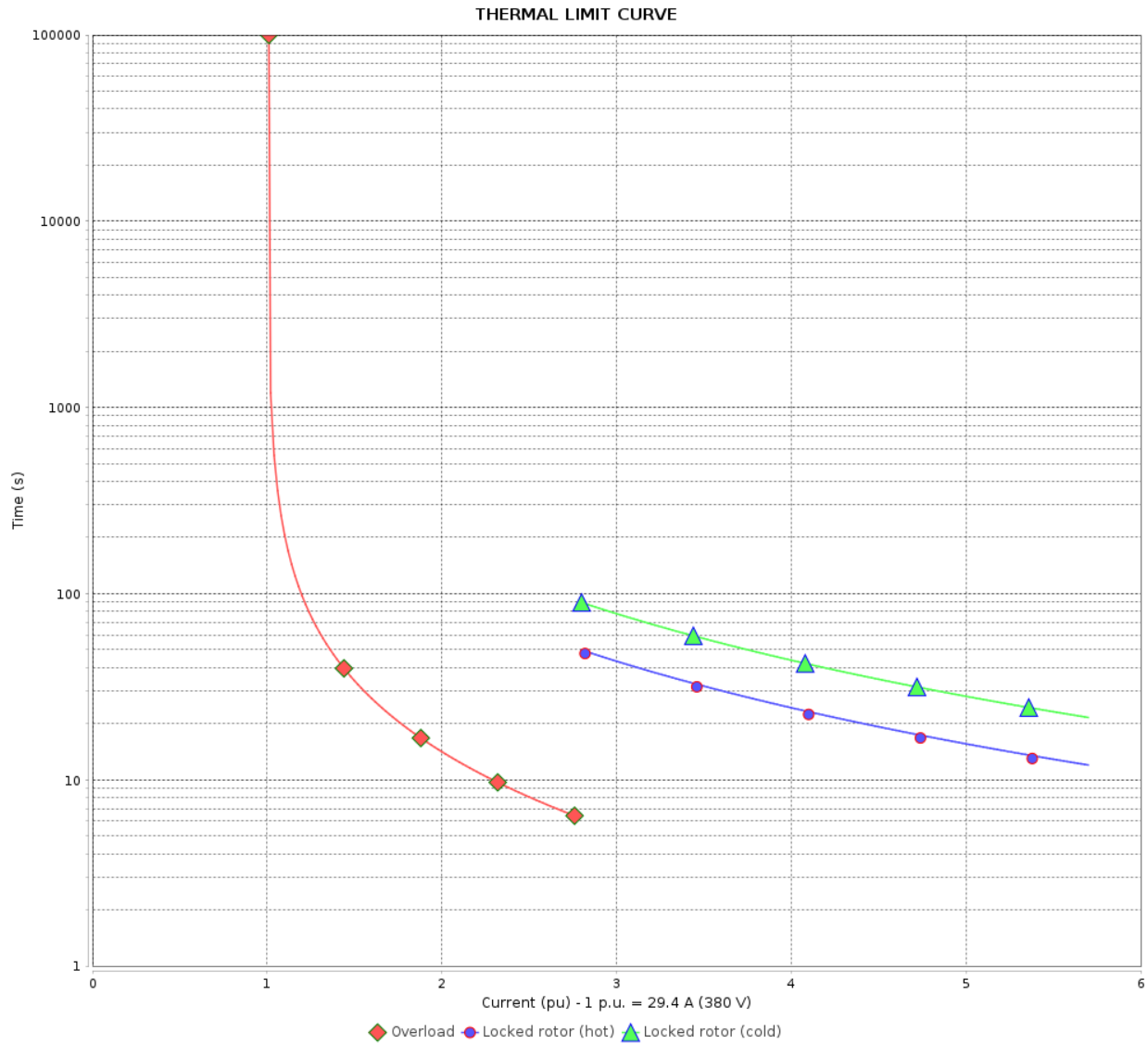
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Three Phase Induction Motor - Squirrel Cage



Customer : _____



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Date		04/10/2023		

THERMAL LIMIT CURVE



Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : W22 IEEE 841 NEMA Premium Efficiency Three-Phase
 Product code : 16689696
 Catalog # : 02018ST3QAP256T-W22

Performance : 400 V 50 Hz 4P IE2

Rated current : 28.0 A	Moment of inertia (J) : 3.10 sq.ft.lb
LRC : 6.2	Duty cycle : Cont.(S1)
Rated torque : 71.9 ft.lb	Insulation class : F
Locked rotor torque : 210 %	Service factor : 1.00
Breakdown torque : 229 %	Temperature rise : 105 K
Rated speed : 1460 rpm	Design : B

Heating constant

Cooling constant

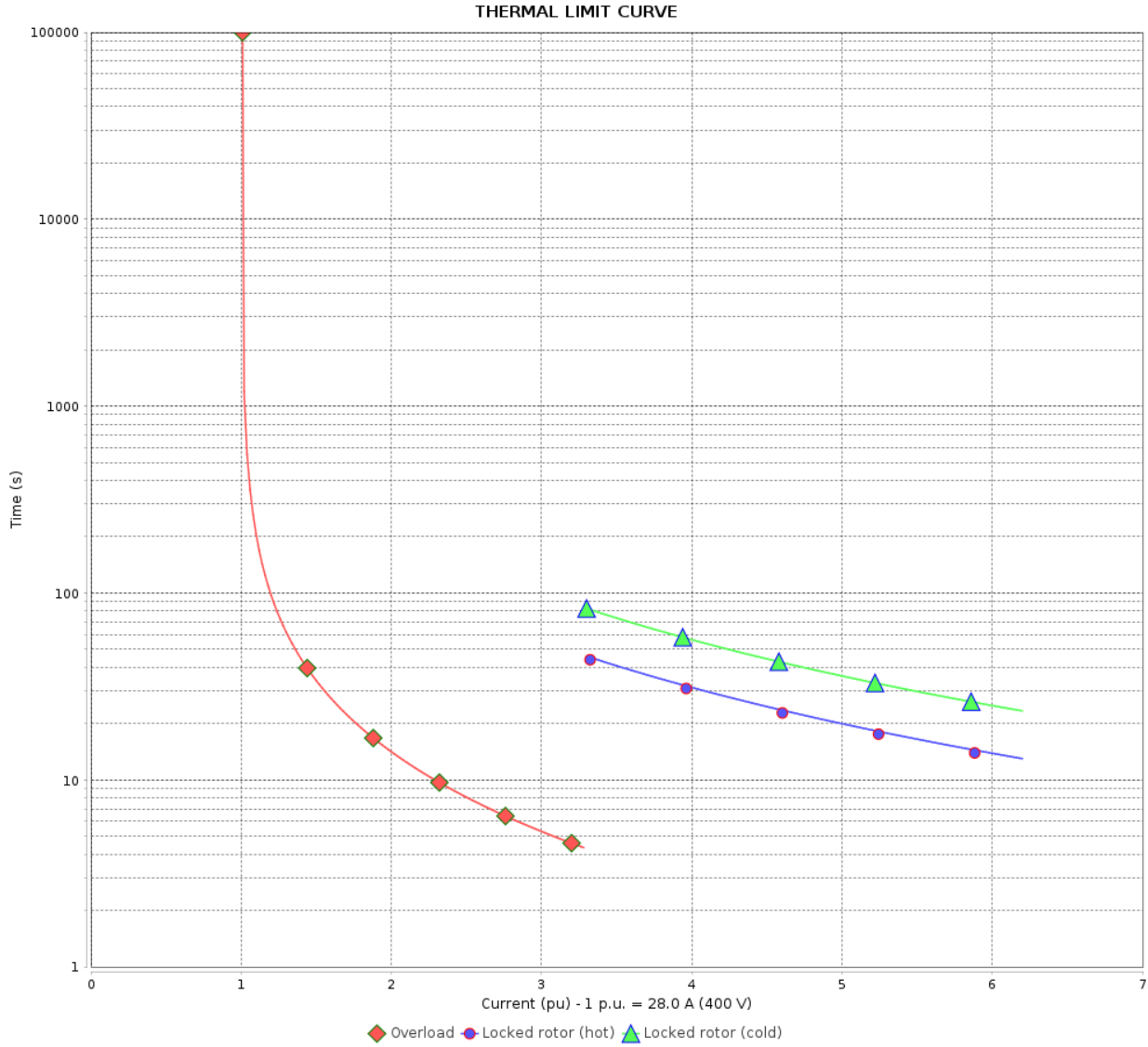
Rev.	Changes Summary	Performed	Checked	Date
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Date	04/10/2023			

THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage

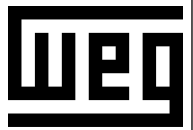


Customer : _____



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THERMAL LIMIT CURVE



Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : W22 IEEE 841 NEMA Premium Efficiency Three-Phase
 Product code : 16689696
 Catalog # : 02018ST3QAP256T-W22

Performance : 415 V 50 Hz 4P IE2

Rated current : 27.1 A	Moment of inertia (J) : 3.10 sq.ft.lb
LRC : 6.6	Duty cycle : Cont.(S1)
Rated torque : 71.7 ft.lb	Insulation class : F
Locked rotor torque : 229 %	Service factor : 1.00
Breakdown torque : 260 %	Temperature rise : 105 K
Rated speed : 1465 rpm	Design : B

Heating constant

Cooling constant

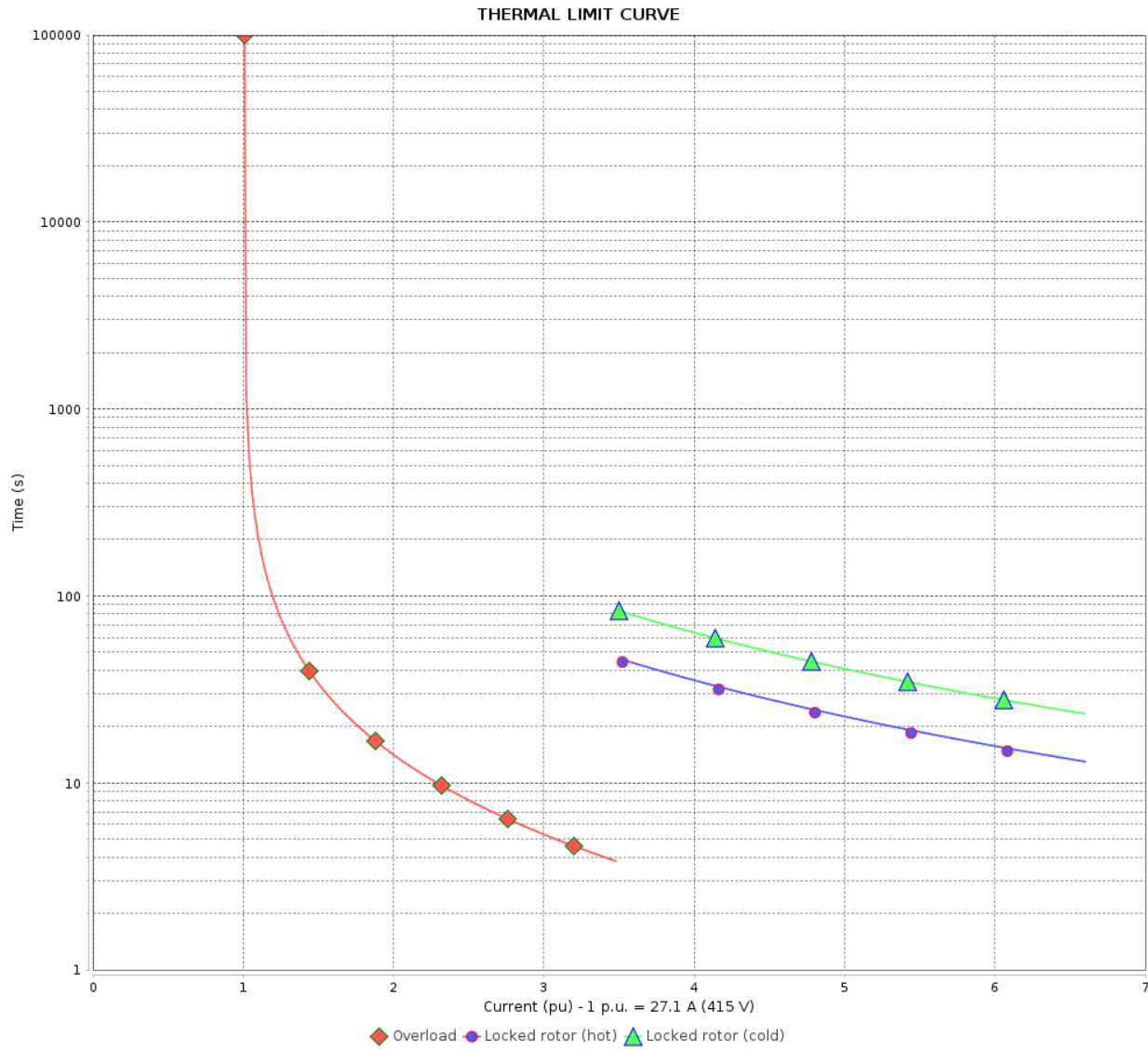
Rev.	Changes Summary	Performed	Checked	Date
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THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



Customer : _____



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Date				

VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

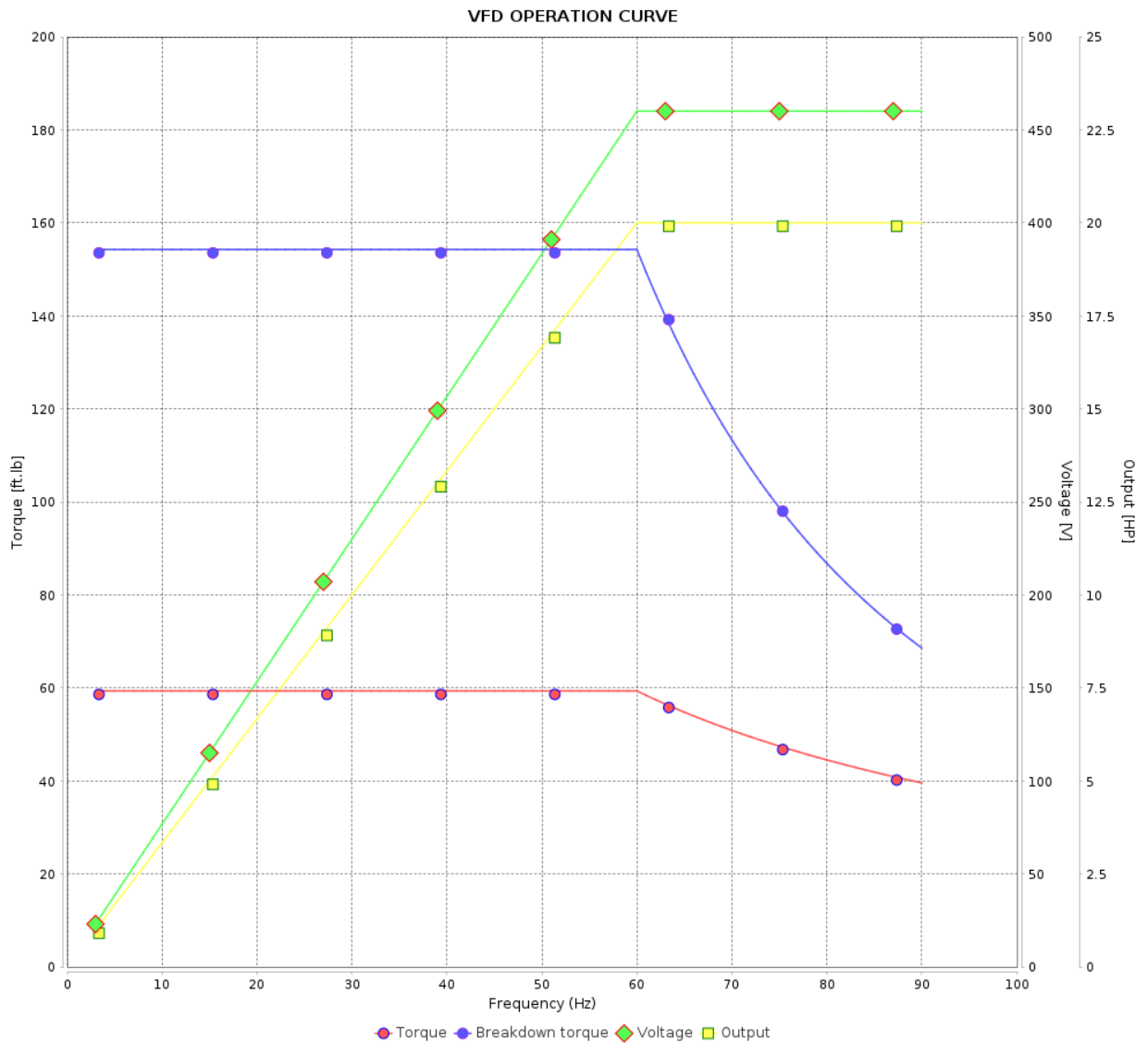


Customer :

Product line : W22 IEEE 841 NEMA Premium Efficiency Three-Phase

Product code : 16689696

Catalog # : 02018ST3QAP256T-W22



Performance : 460 V 60 Hz 4P

Rated current : 24.1 A
 LRC : 6.5
 Rated torque : 59.3 ft.lb
 Locked rotor torque : 240 %
 Breakdown torque : 260 %
 Rated speed : 1770 rpm

Moment of inertia (J) : 3.10 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
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Date				

VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

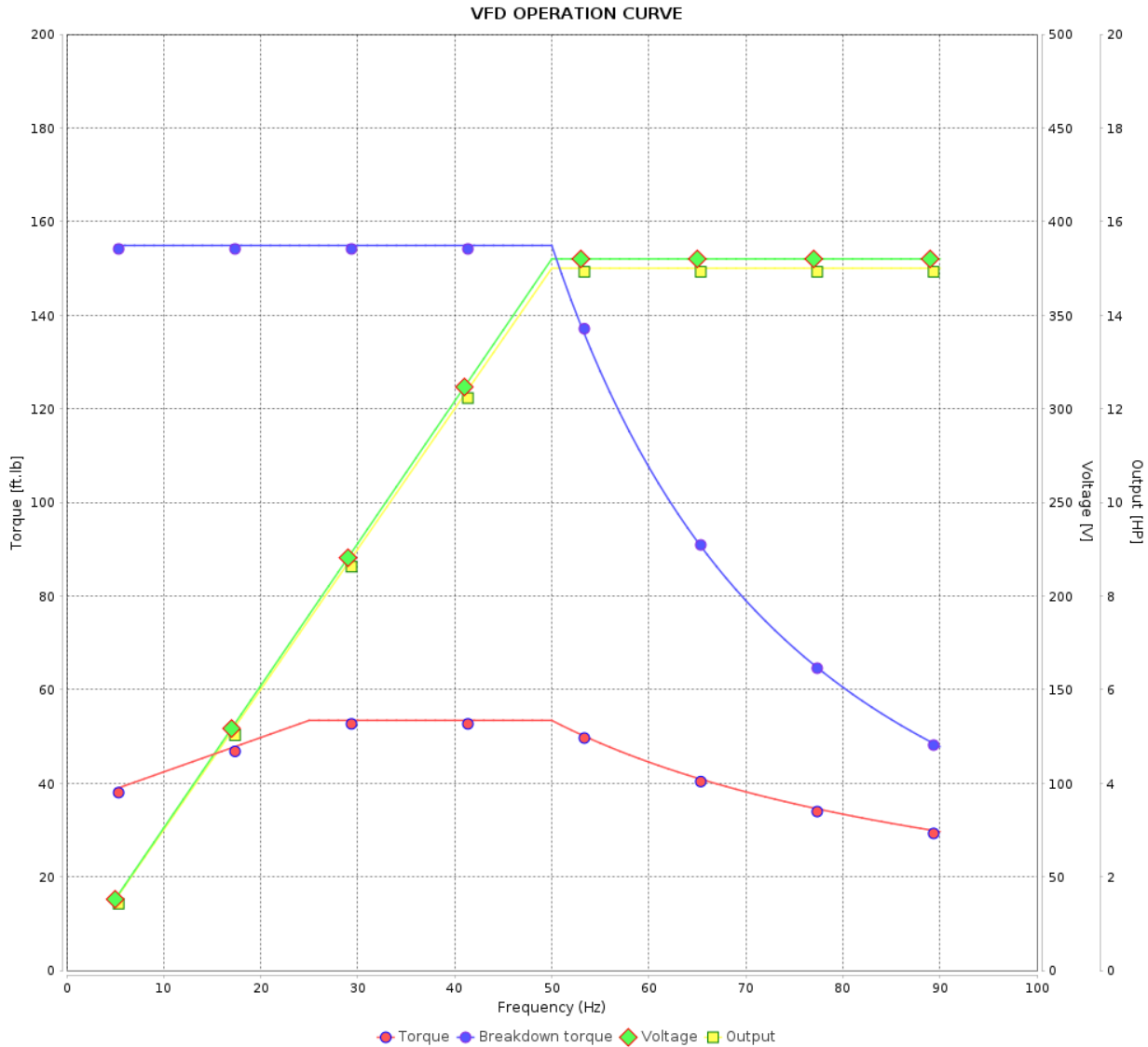


Customer :

Product line : W22 IEEE 841 NEMA Premium Efficiency Three-Phase

Product code : 16689696

Catalog # : 02018ST3QAP256T-W22



Performance : 380 V 50 Hz 4P IE3

Rated current : 21.8 A
 LRC : 7.4
 Rated torque : 53.4 ft.lb
 Locked rotor torque : 250 %
 Breakdown torque : 290 %
 Rated speed : 1475 rpm

Moment of inertia (J) : 3.10 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

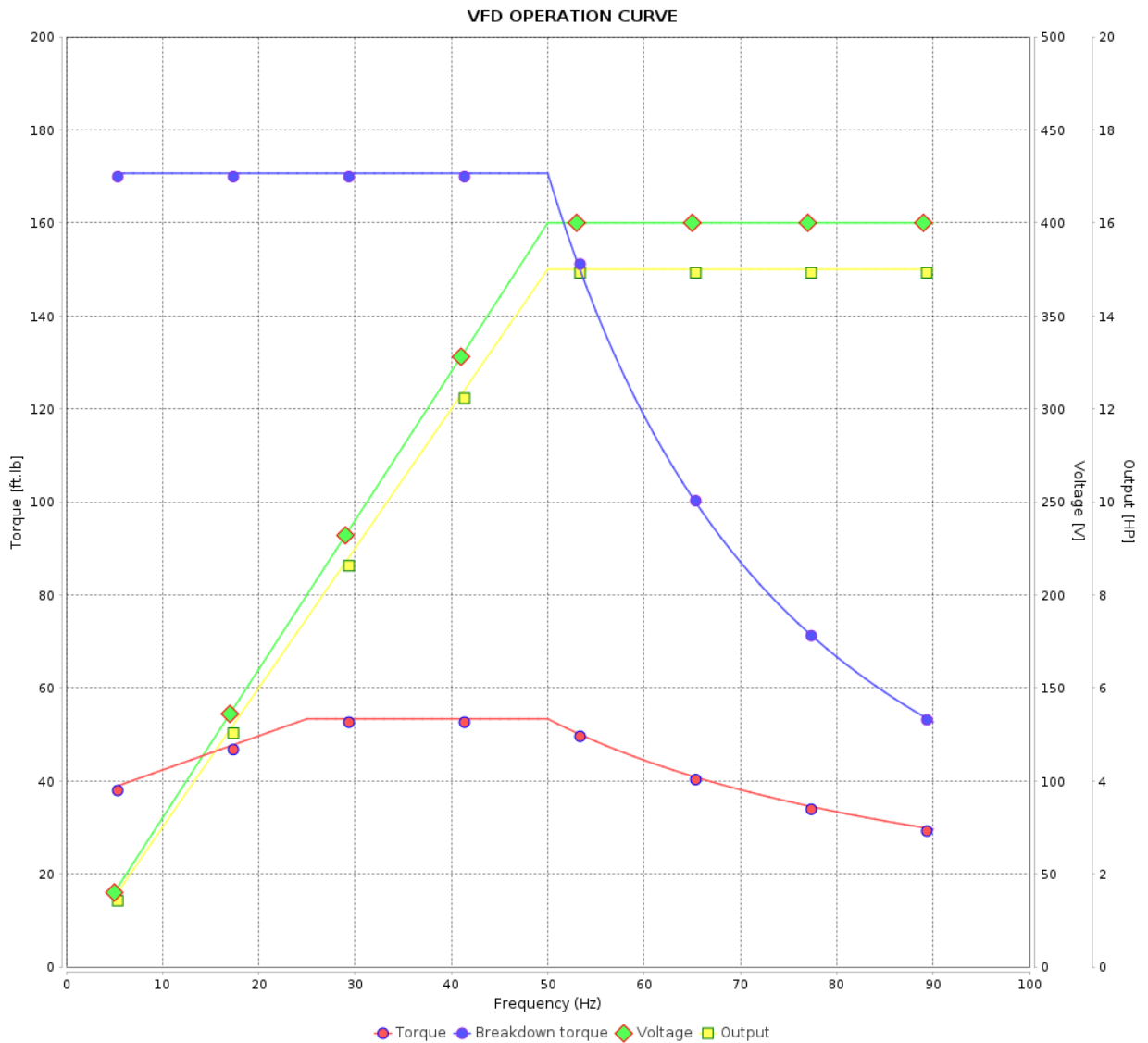


Customer :

Product line : W22 IEEE 841 NEMA Premium Efficiency Three-Phase

Product code : 16689696

Catalog # : 02018ST3QAP256T-W22



Performance : 400 V 50 Hz 4P IE3

Rated current : 21.2 A
 LRC : 7.9
 Rated torque : 53.3 ft.lb
 Locked rotor torque : 280 %
 Breakdown torque : 320 %
 Rated speed : 1477 rpm

Moment of inertia (J) : 3.10 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				

VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

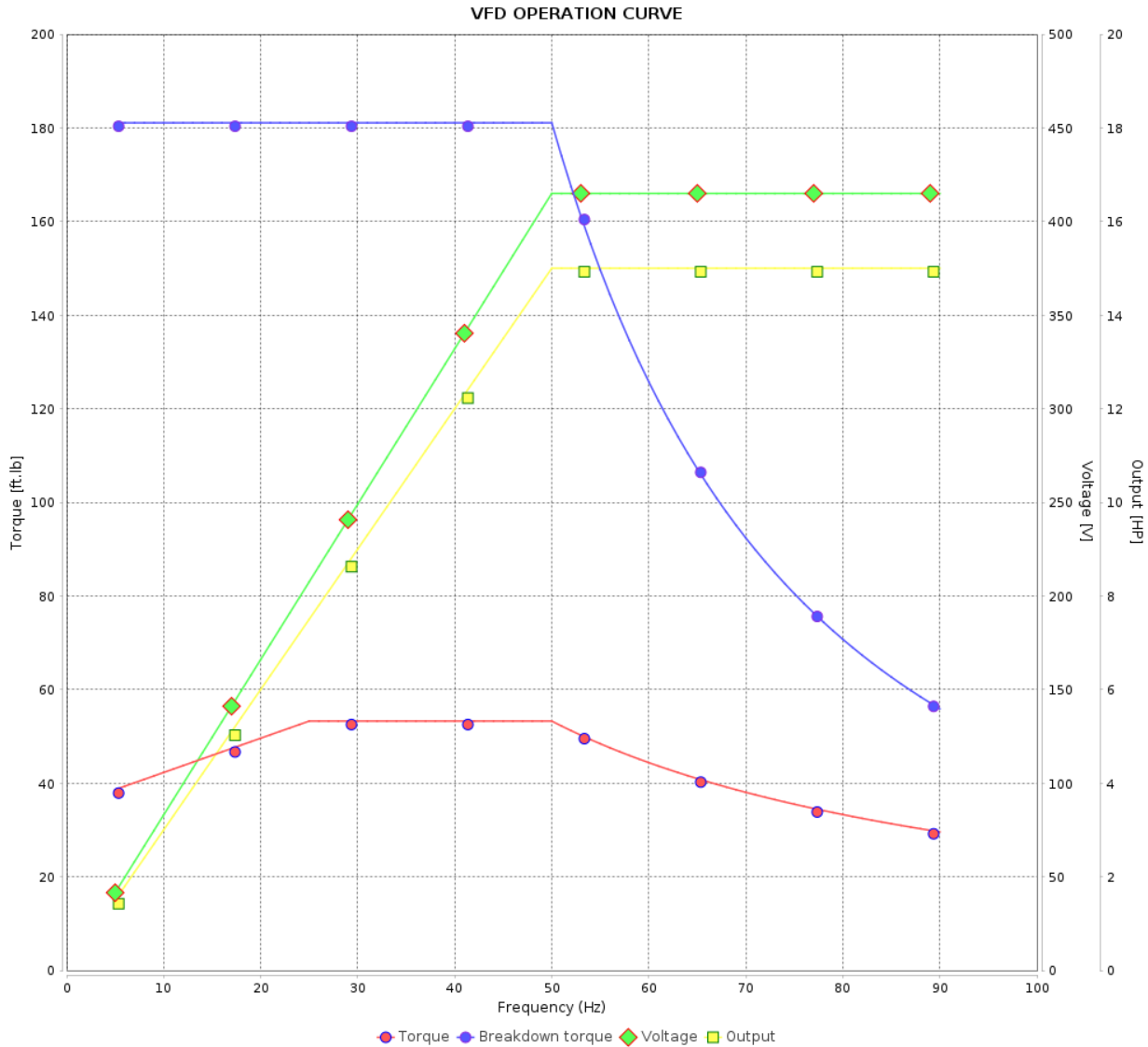


Customer :

Product line : W22 IEEE 841 NEMA Premium Efficiency
Three-Phase

Product code : 16689696

Catalog # : 02018ST3QAP256T-W22



Performance : 415 V 50 Hz 4P IE3

Rated current	: 20.6 A	Moment of inertia (J)	: 3.10 sq.ft.lb
LRC	: 8.4	Duty cycle	: Cont.(S1)
Rated torque	: 53.3 ft.lb	Insulation class	: F
Locked rotor torque	: 300 %	Service factor	: 1.00
Breakdown torque	: 340 %	Temperature rise	: 80 K
Rated speed	: 1479 rpm	Design	: B

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VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

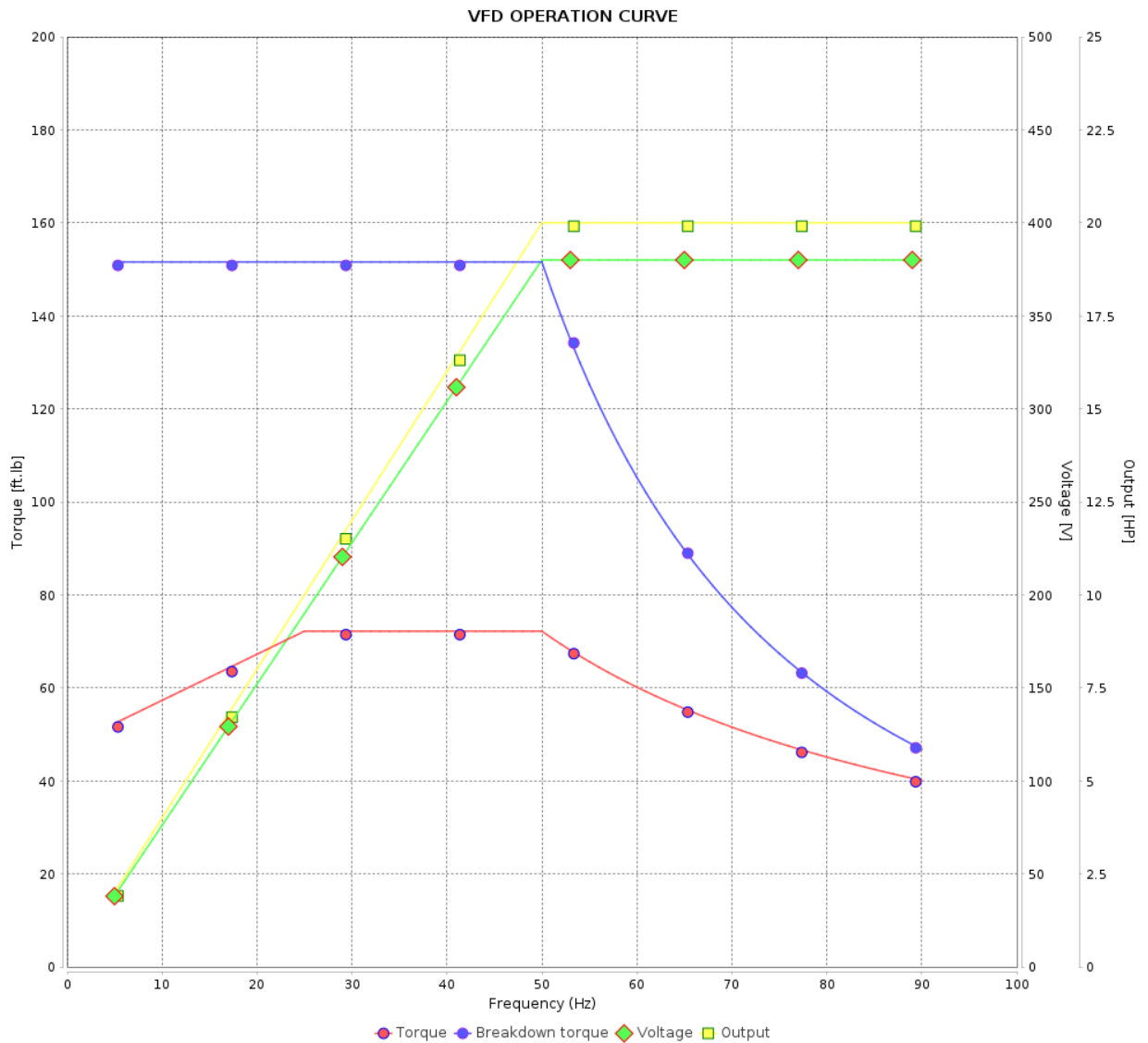


Customer :

Product line : W22 IEEE 841 NEMA Premium Efficiency Three-Phase

Product code : 16689696

Catalog # : 02018ST3QAP256T-W22



Performance : 380 V 50 Hz 4P IE1

Rated current : 29.4 A
 LRC : 5.7
 Rated torque : 72.2 ft.lb
 Locked rotor torque : 190 %
 Breakdown torque : 210 %
 Rated speed : 1455 rpm

Moment of inertia (J) : 3.10 sq.ft.lb
 Duty cycle : Cont.(S1)
 Insulation class : F
 Service factor : 1.00
 Temperature rise : 105 K
 Design : B

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VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

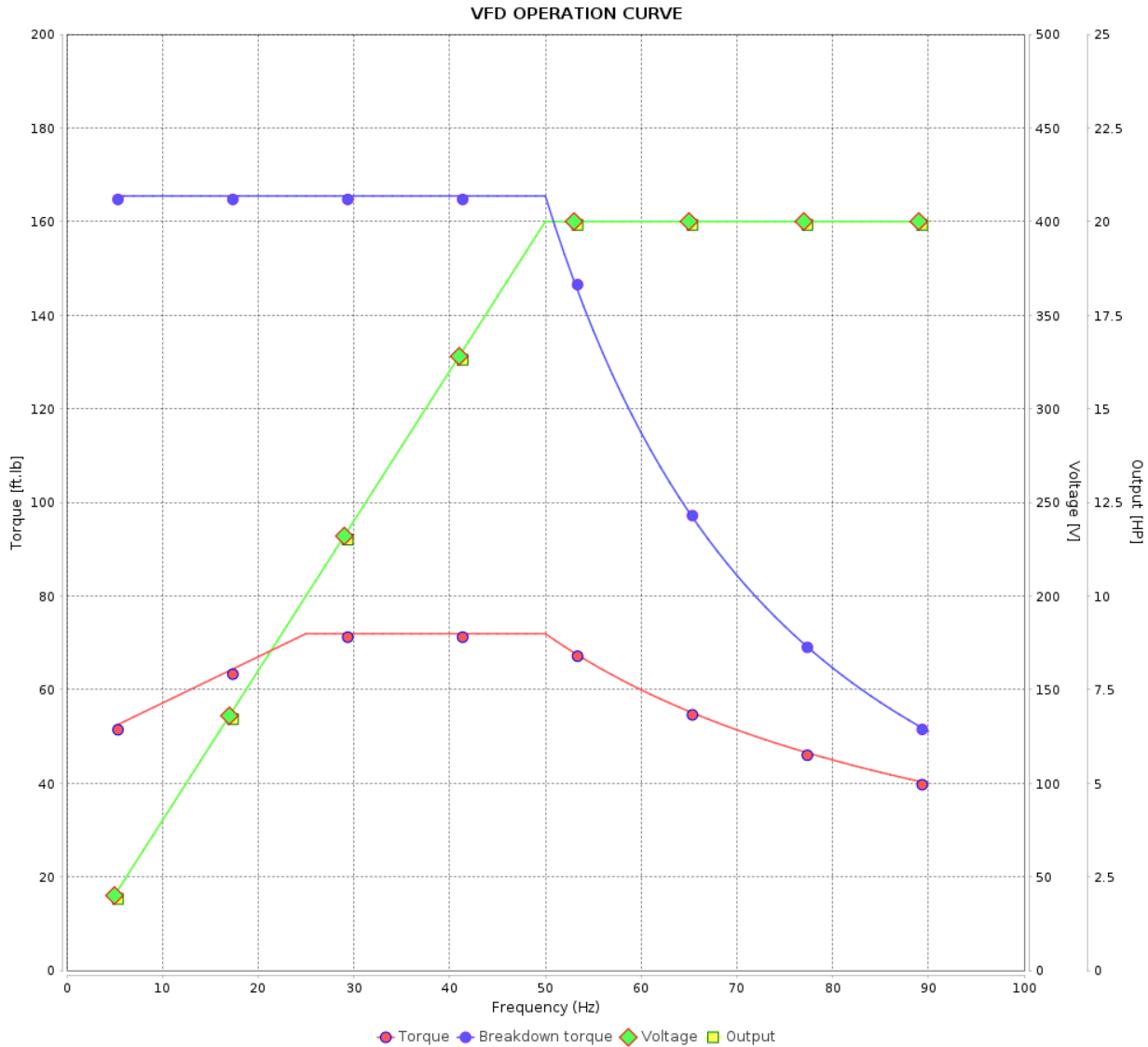


Customer :

Product line : W22 IEEE 841 NEMA Premium Efficiency Three-Phase

Product code : 16689696

Catalog # : 02018ST3QAP256T-W22



Performance : 400 V 50 Hz 4P IE2

Rated current : 28.0 A
 LRC : 6.2
 Rated torque : 71.9 ft.lb
 Locked rotor torque : 210 %
 Breakdown torque : 229 %
 Rated speed : 1460 rpm

Moment of inertia (J) : 3.10 sq.ft.lb
 Duty cycle : Cont.(S1)
 Insulation class : F
 Service factor : 1.00
 Temperature rise : 105 K
 Design : B

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VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

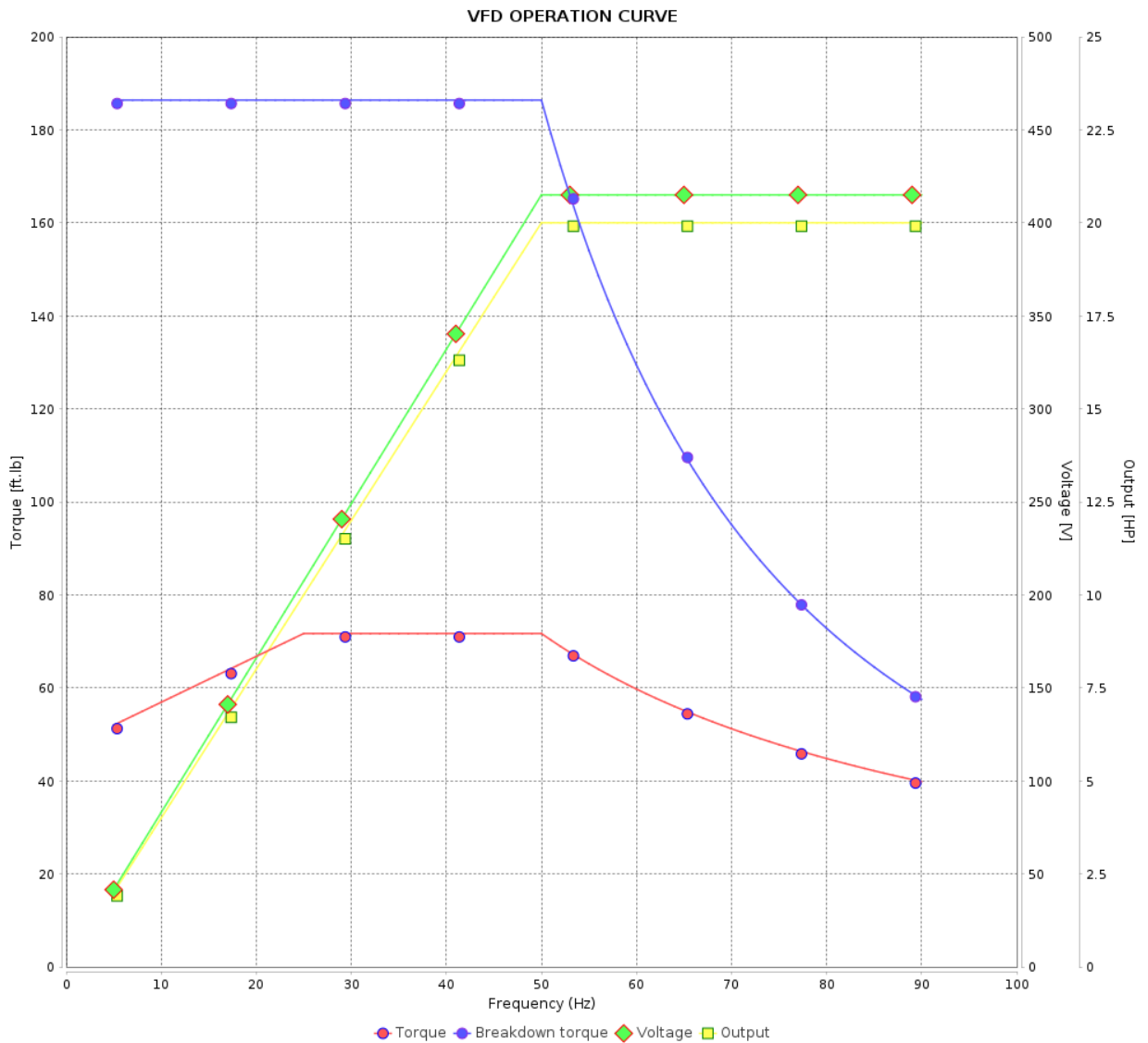


Customer :

Product line : W22 IEEE 841 NEMA Premium Efficiency Three-Phase

Product code : 16689696

Catalog # : 02018ST3QAP256T-W22

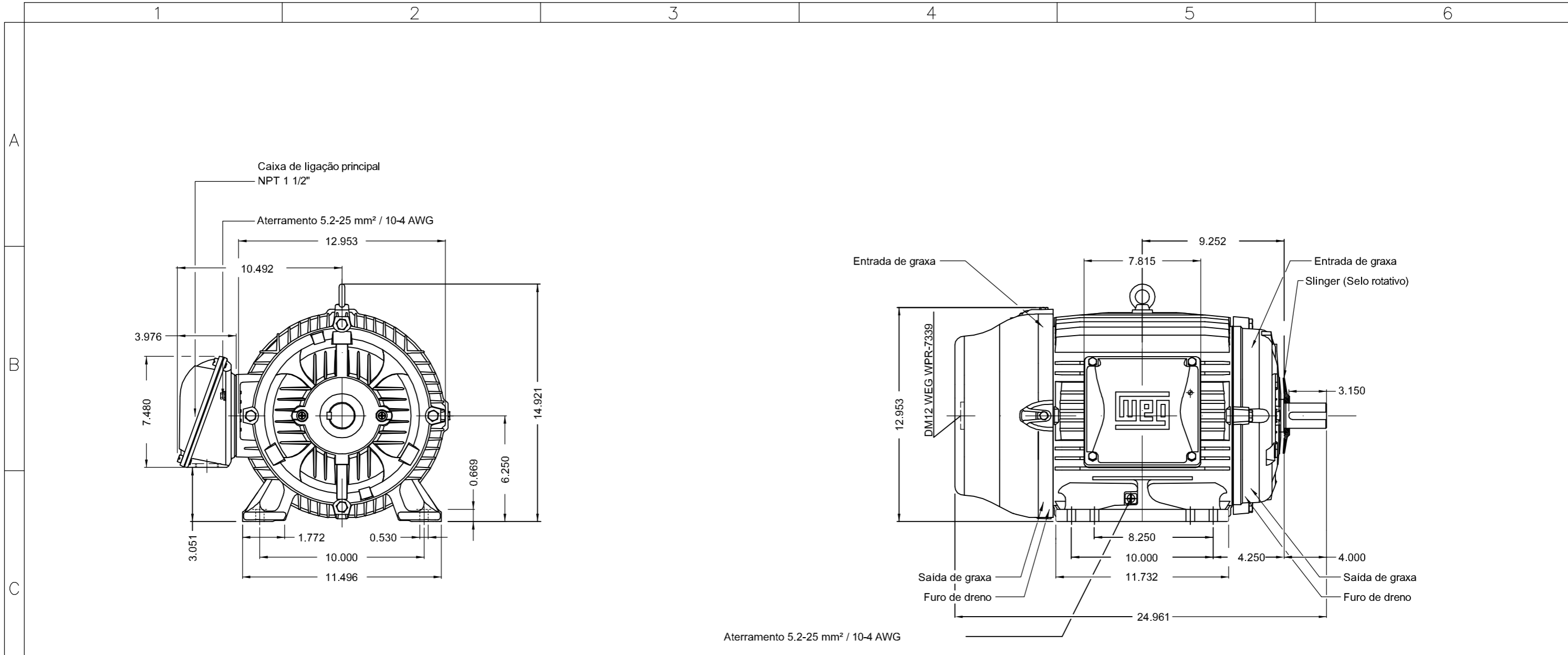


Performance : 415 V 50 Hz 4P IE2

Rated current : 27.1 A
 LRC : 6.6
 Rated torque : 71.7 ft.lb
 Locked rotor torque : 229 %
 Breakdown torque : 260 %
 Rated speed : 1465 rpm

Moment of inertia (J) : 3.10 sq.ft.lb
 Duty cycle : Cont.(S1)
 Insulation class : F
 Service factor : 1.00
 Temperature rise : 105 K
 Design : B

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420104067						
20 HP 04 Polos 60 Hz						A
WEG HOUSE ACCOUNT MOTORS						
500002215990		ZZ 420270286	JACKSONHM	FRANCINES	FRANCINES	15.09.2022 02
500002208748		PCR 100000146151	RBOECK	FRANCINES	FRANCINES	06.09.2022 01
ECM	LOC	RESUMO MODIFICAÇÃO	EXECUTADO	VERIFICADO	LIBERADO	DATA VER

EXECUTOR	SCARMAGNANI		MOTOR TRIF. W22 NEMA P. EFF. IEEEE841	10009788758		
VERIFICADOR	SCARMAGNANI		CARÇAÇA 254/6T IP56 TEFC	000	02	
LIBERADOR	MARLONB					
DATA LB.	09.06.2022	WMO	JARAGUA DO SUL	Engenharia de Produto	FOLHA	1 / 1

Placa de identificação com marcação especial	<p>Ponta de eixo Dianteira</p> <p>DM12 WEG WPR-7339</p>
Saida de graxa conforme IEEEE841	
Forma construtiva NEMA W-8	
Forma construtiva V6D	

A
B
C
D
E

CÓPIA SEM CONTROLE
Dimensões em polegadas
LIBERADO
ZME A3



NEMA
Premium
W22



FOR SAFE AREA
Mod.TE1BFOXON
CC029A



Class I, Div 2, Gr A, B, C and D - T3
Class I, Zone 2, IIC - T3
Class II, Div 2, Gr F and G - T4A
For use on PWM: Gr. A, B, C, D and F,
VT 1000:1, CT 20:1, 1.00SF - T3A

MODEL 02018ST3QAP256T-W22

API 661
Inverter Duty Motor
Severe Duty

IEEE
841-2021

PH3 60Hz Fr. 254/6T 1000m.a.s.l. IP56 TEFC 344 lb

V 460

A 24.1

HP 20

kW 15

SF 1.15

SFA 27.7

RPM 1770

PF 0.84

AMB 40°C

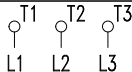
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NEMA NOM EFF 93.0%

DUTY CONT.

DES B Code G

GUARANT. EFF 91.7%



460V

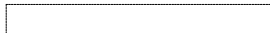


→ NU-309-C3 (13g) 45RU03X30

→ 6209-C3 (9g) 45BC02X30



MOBIL POLYREX EM (14000h)



MADE IN BRAZIL
16689696