

# DATA SHEET



## Three Phase Induction Motor - Squirrel Cage

Customer :					
Product line	: W22 Fan and Exhaust 400°C 2h IE1 Three-Phase	Product code :	12982673		
Frame	: 90L	Cooling method	: IC410 - TEAO		
Insulation class	: H	Mounting	: B30L(D)		
Duty cycle	: 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>3</sup>	: 23.0 kg		
Protection degree	: IP55	Moment of inertia (J)	: 0.0046 kgm <sup>2</sup>		
Design	: N				
Output [kW]	1.5	1.5	1.5	1.5	
Poles	4	4	4	4	
Frequency [Hz]	50	50	50	60	
Rated voltage [V]	220/380	230/400	240/415	460	
Rated current [A]	6.11/3.54	6.07/3.49	6.05/3.50	3.03	
L. R. Amperes [A]	33.6/19.5	35.2/20.2	36.9/21.3	21.2	
LRC [A]	5.5	5.8	6.1	7.0	
No load current [A]	3.28/1.90	3.83/2.20	4.32/2.50	1.90	
Rated speed [RPM]	1430	1440	1445	1750	
Slip [%]	4.67	4.00	3.67	2.78	
Rated torque [Nm]	10.0	9.95	9.92	8.19	
Locked rotor torque [%]	210	229	250	270	
Breakdown torque [%]	240	270	300	340	
Service factor	1.00	1.00	1.00	1.00	
Temperature rise	80 K	80 K	80 K	80 K	
Locked rotor time	19s (cold) 10s (hot)	19s (cold) 10s (hot)	19s (cold) 10s (hot)	19s (cold) 10s (hot)	
Noise level <sup>2</sup>	47.0 dB(A)	47.0 dB(A)	47.0 dB(A)	51.0 dB(A)	
Efficiency (%)	25%				
	50%	74.5	74.5	72.5	74.6
	75%	77.5	77.5	77.5	78.4
	100%	77.5	77.5	77.5	79.7
Power Factor	25%				
	50%	0.65	0.58	0.52	0.57
	75%	0.76	0.72	0.67	0.69
	100%	0.83	0.80	0.77	0.78
Bearing type	: <u>Drive end</u> 6205 Z C3 <u>Non drive end</u> 6204 Z C3	Foundation loads			
Sealing	: V'Ring V'Ring	Max. traction	: 682 N		
Lubrication interval	: 20000 h 20000 h	Max. compression	: 908 N		
Lubricant amount	: 8 g 7 g				
Lubricant type	: Krytox GPL 225				
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 IEC 60034-1.			
Rev.	Changes Summary	Performed	Checked	Date	
Performed by					
Checked by			Page	Revision	
Date	20/11/2019		1 / 17		

# TORQUE AND CURRENT VS SPEED CURVE

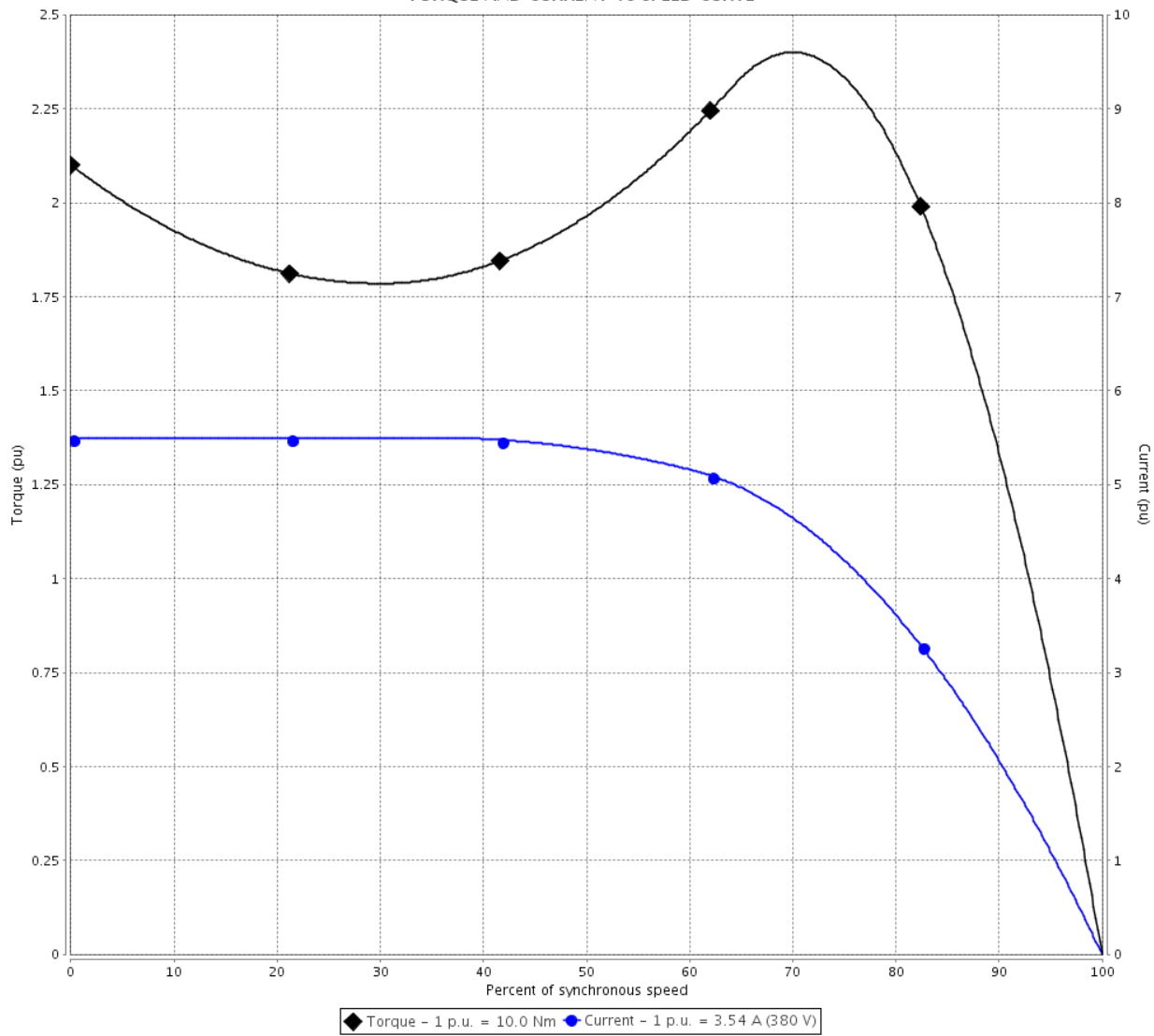
Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W22 Fan and Exhaust 400°C 2h IE1 Three-Phase  
 Product code : 12982673

TORQUE AND CURRENT VS SPEED CURVE



Performance : 220/380 V 50 Hz 4P

Rated current	: 6.11/3.54 A	Moment of inertia (J)	: 0.0046 kgm <sup>2</sup>
LRC	: 5.5	Duty cycle	: S1
Rated torque	: 10.0 Nm	Insulation class	: H
Locked rotor torque	: 210 %	Service factor	: 1.00
Breakdown torque	: 240 %	Temperature rise	: 80 K
Rated speed	: 1430 rpm	Design	: N

Locked rotor time : 19s (cold) 10s (hot)

Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page 2 / 17	Revision
Checked by				
Date	20/11/2019			

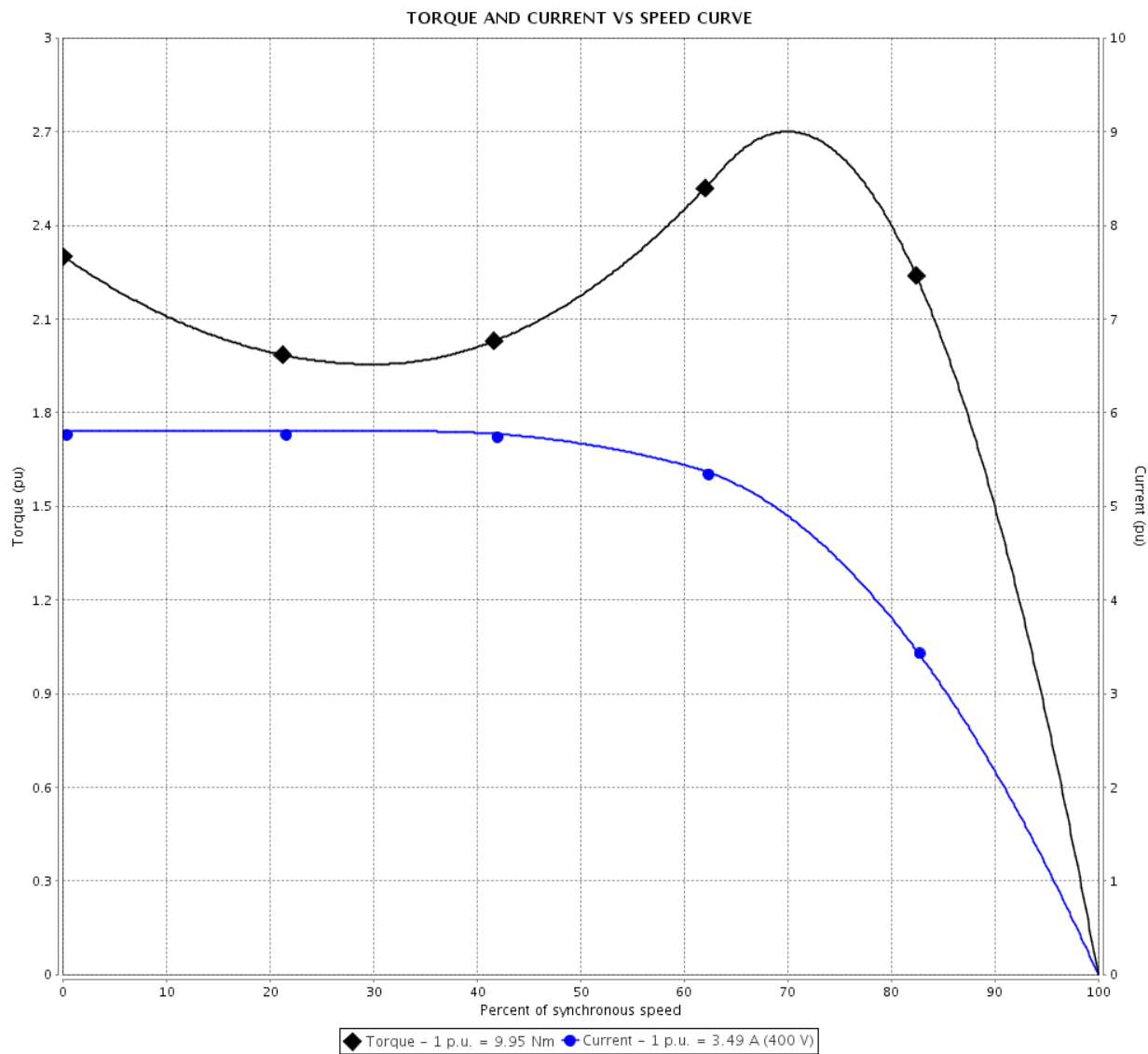
# TORQUE AND CURRENT VS SPEED CURVE



## Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : W22 Fan and Exhaust 400°C 2h IE1 Three-Phase      Product code : 12982673



Performance : 230/400 V 50 Hz 4P

Rated current	: 6.07/3.49 A	Moment of inertia (J)	: 0.0046 kgm <sup>2</sup>
LRC	: 5.8	Duty cycle	: S1
Rated torque	: 9.95 Nm	Insulation class	: H
Locked rotor torque	: 229 %	Service factor	: 1.00
Breakdown torque	: 270 %	Temperature rise	: 80 K
Rated speed	: 1440 rpm	Design	: N

Locked rotor time : 19s (cold) 10s (hot)

Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page 3 / 17	Revision
Checked by				
Date	20/11/2019			

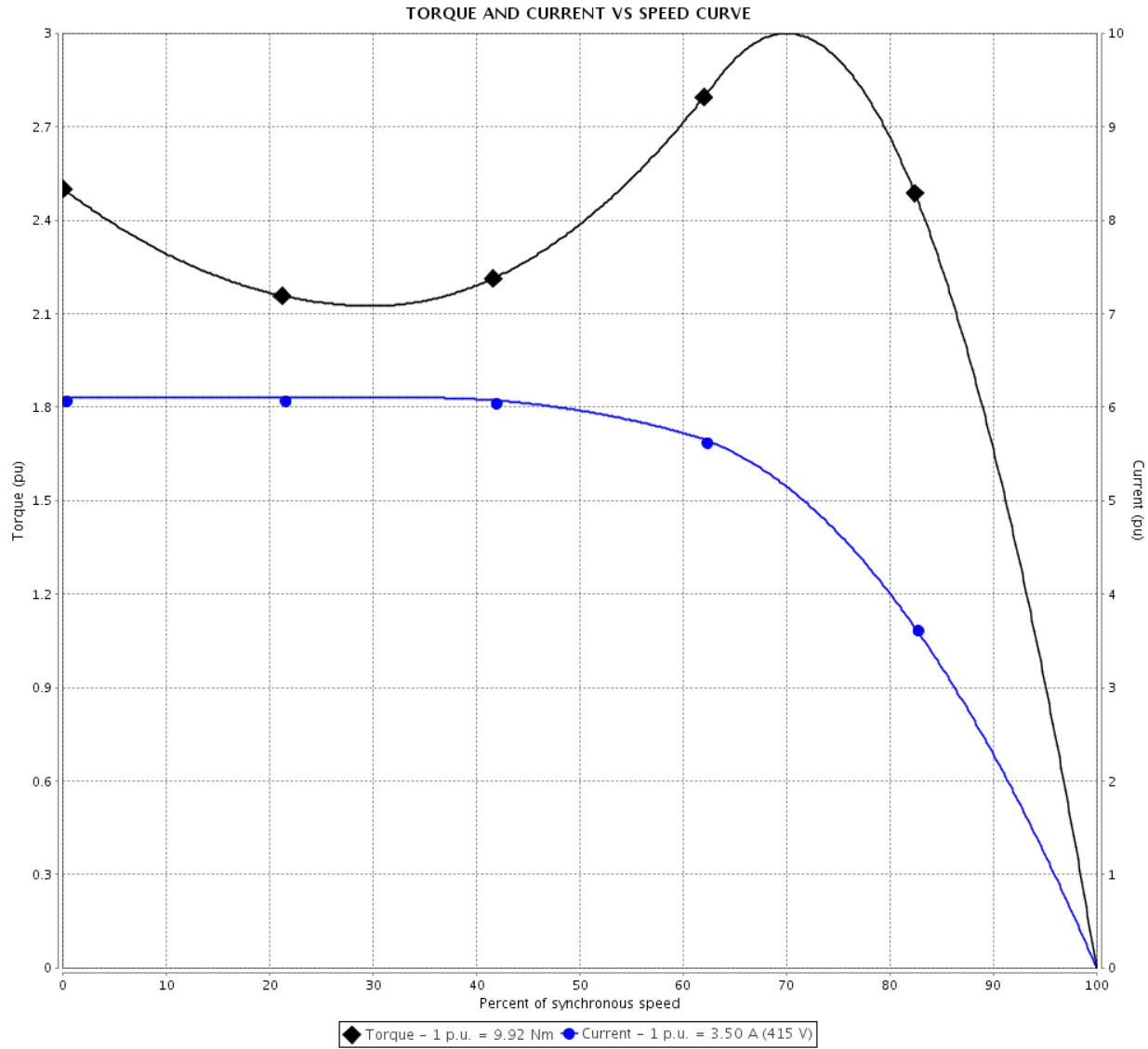
# TORQUE AND CURRENT VS SPEED CURVE

Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W22 Fan and Exhaust 400°C 2h IE1 Three-Phase      Product code : 12982673



Performance : 240/415 V 50 Hz 4P

Rated current	: 6.05/3.50 A	Moment of inertia (J)	: 0.0046 kgm <sup>2</sup>
LRC	: 6.1	Duty cycle	: S1
Rated torque	: 9.92 Nm	Insulation class	: H
Locked rotor torque	: 250 %	Service factor	: 1.00
Breakdown torque	: 300 %	Temperature rise	: 80 K
Rated speed	: 1445 rpm	Design	: N

Locked rotor time : 19s (cold) 10s (hot)

Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page 4 / 17	Revision
Checked by				
Date	20/11/2019			

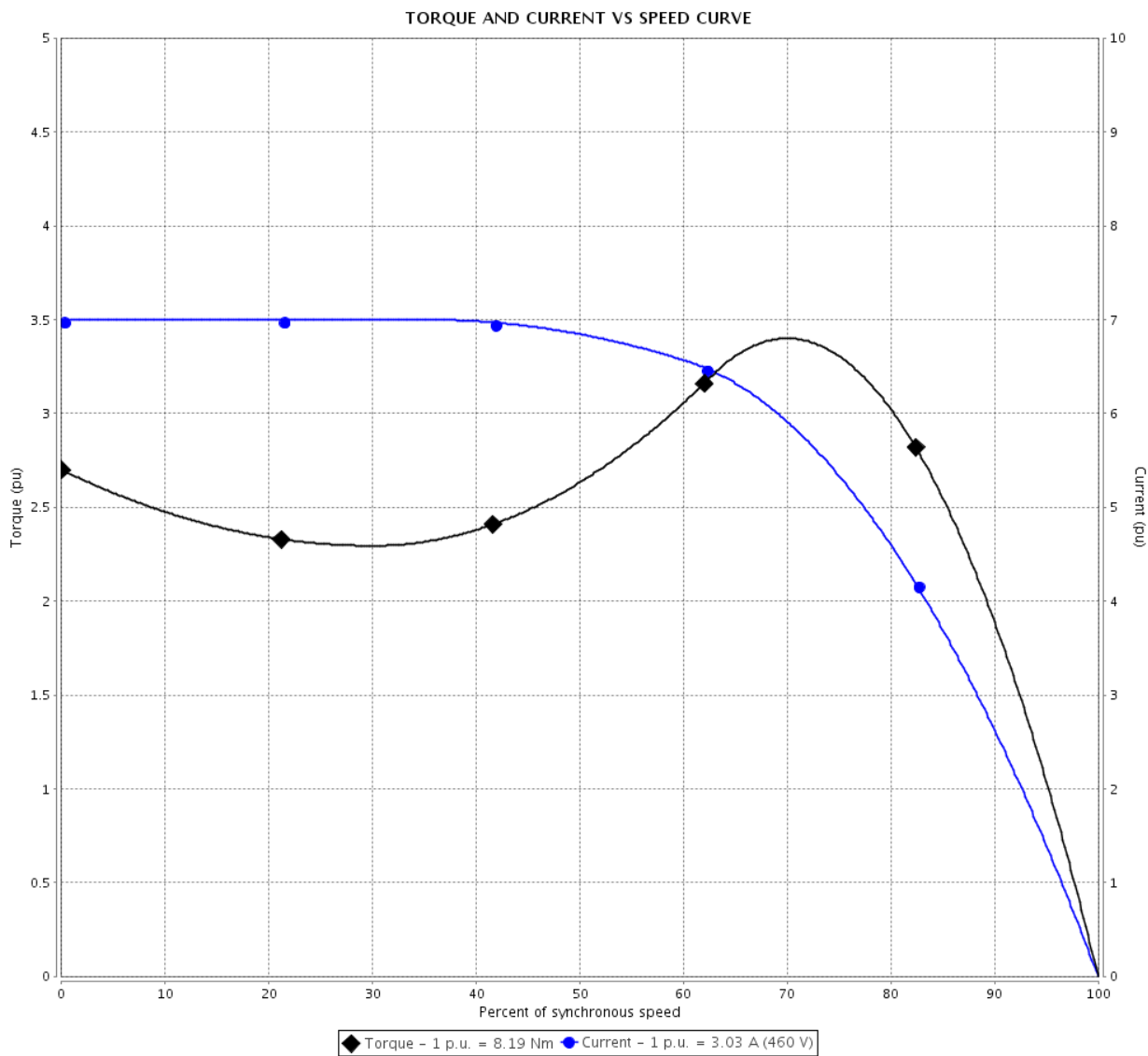
# TORQUE AND CURRENT VS SPEED CURVE



## Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : W22 Fan and Exhaust 400°C 2h IE1 Three-Phase      Product code : 12982673



Performance : 460 V 60 Hz 4P

Rated current	: 3.03 A	Moment of inertia (J)	: 0.0046 kgm <sup>2</sup>
LRC	: 7.0	Duty cycle	: S1
Rated torque	: 8.19 Nm	Insulation class	: H
Locked rotor torque	: 270 %	Service factor	: 1.00
Breakdown torque	: 340 %	Temperature rise	: 80 K
Rated speed	: 1750 rpm	Design	: N

Locked rotor time : 19s (cold) 10s (hot)

Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page 5 / 17	Revision
Checked by				
Date	20/11/2019			

# LOAD PERFORMANCE CURVE

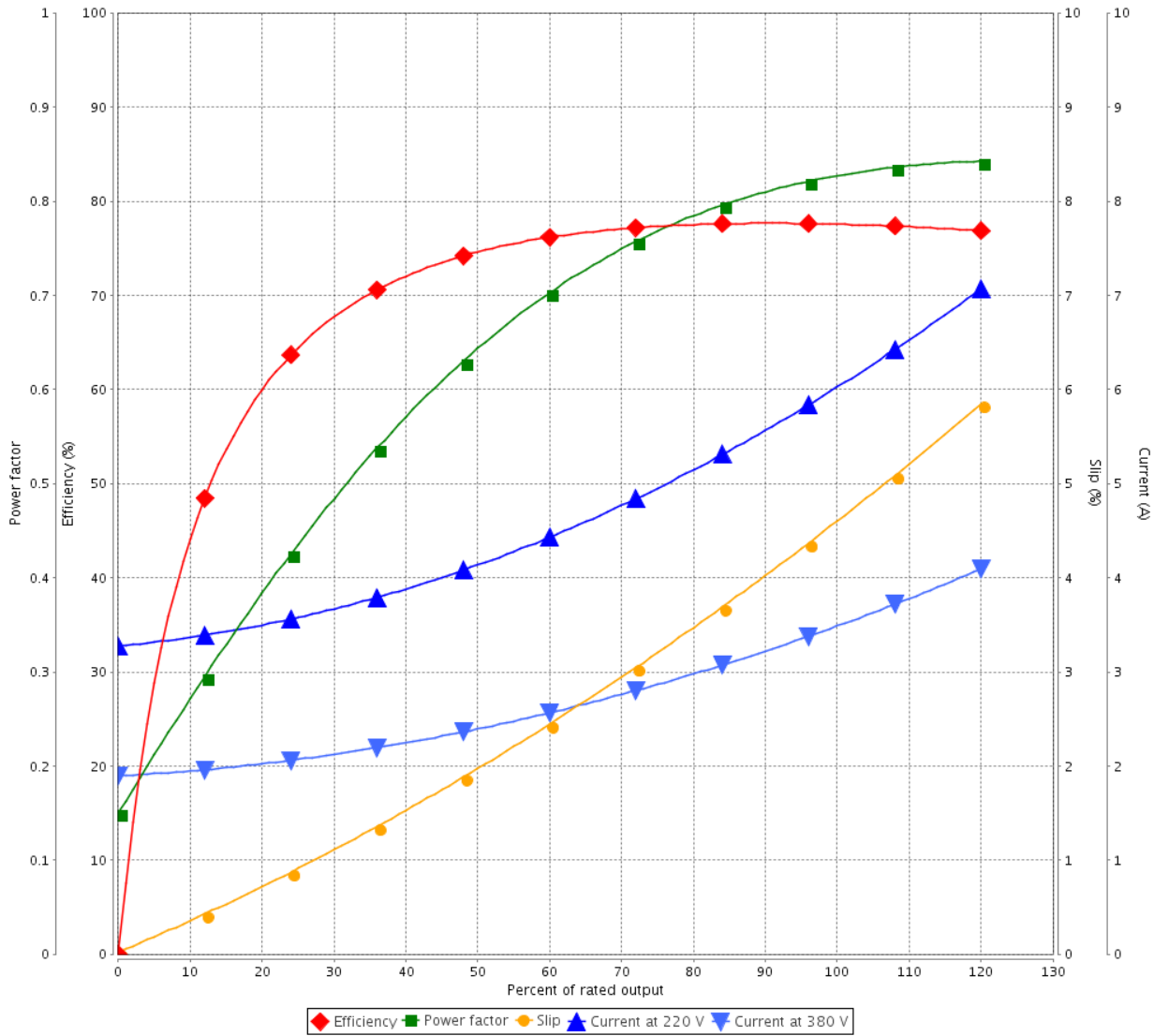
Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W22 Fan and Exhaust 400°C 2h  
IE1 Three-Phase      Product code : 12982673

LOAD PERFORMANCE CURVE



Performance : 220/380 V 50 Hz 4P

Rated current : 6.11/3.54 A  
LRC : 5.5  
Rated torque : 10.0 Nm  
Locked rotor torque : 210 %  
Breakdown torque : 240 %  
Rated speed : 1430 rpm

Moment of inertia (J) : 0.0046 kgm<sup>2</sup>  
Duty cycle : S1  
Insulation class : H  
Service factor : 1.00  
Temperature rise : 80 K  
Design : N

Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page 6 / 17	Revision
Checked by				
Date	20/11/2019			

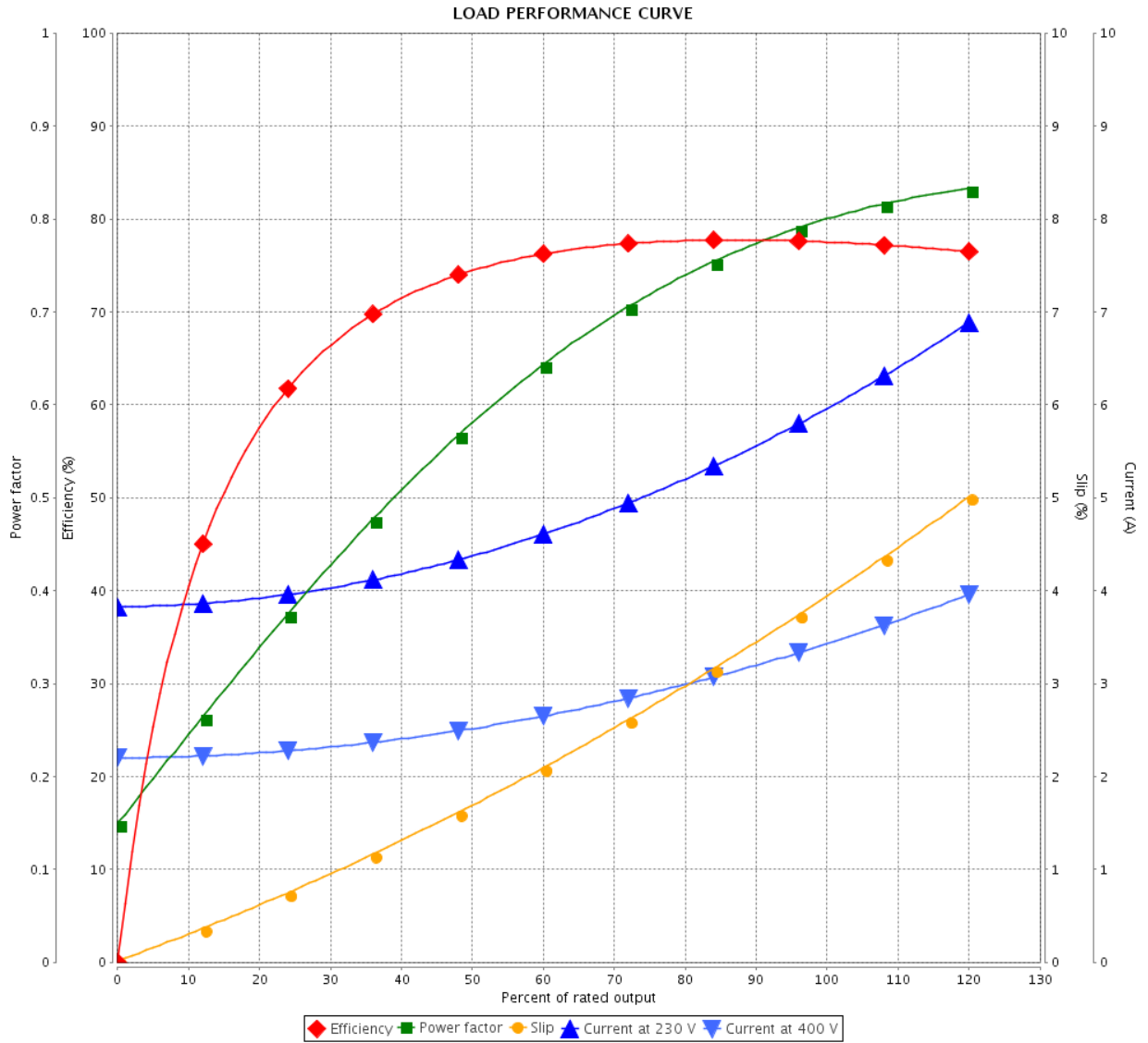
# LOAD PERFORMANCE CURVE

## Three Phase Induction Motor - Squirrel Cage



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

Product line : W22 Fan and Exhaust 400°C 2h IE1 Three-Phase      Product code : 12982673



Performance : 230/400 V 50 Hz 4P

Rated current : 6.07/3.49 A  
 LRC : 5.8  
 Rated torque : 9.95 Nm  
 Locked rotor torque : 229 %  
 Breakdown torque : 270 %  
 Rated speed : 1440 rpm

Moment of inertia (J) : 0.0046 kgm<sup>2</sup>  
 Duty cycle : S1  
 Insulation class : H  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : N

Rev.	Changes Summary	Performed	Checked	Date
Performed by		Page		Revision
Checked by		7 / 17		
Date		20/11/2019		

# LOAD PERFORMANCE CURVE

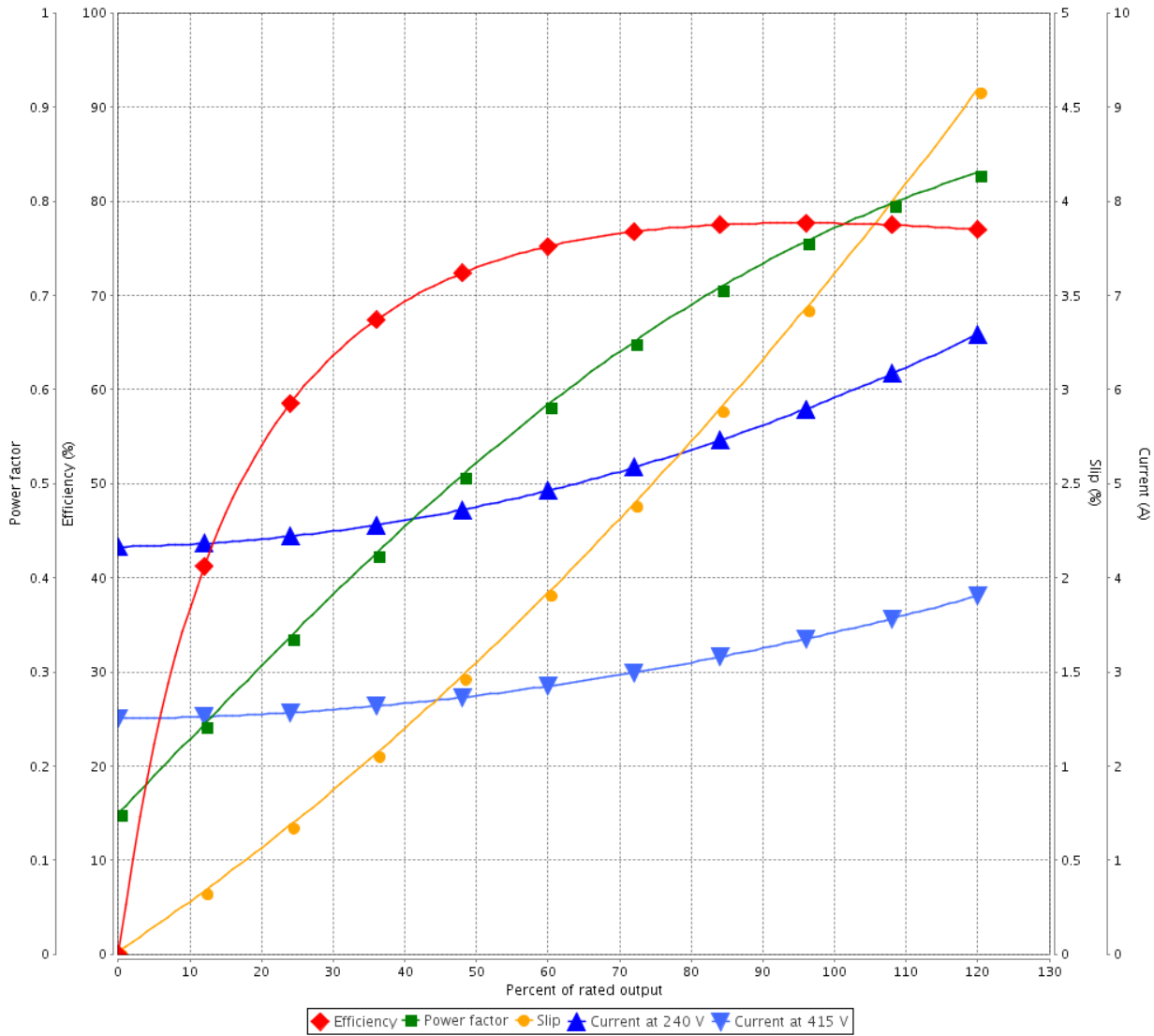
Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W22 Fan and Exhaust 400°C 2h IE1 Three-Phase      Product code : 12982673

LOAD PERFORMANCE CURVE



Performance : 240/415 V 50 Hz 4P

Rated current	: 6.05/3.50 A	Moment of inertia (J)	: 0.0046 kgm <sup>2</sup>
LRC	: 6.1	Duty cycle	: S1
Rated torque	: 9.92 Nm	Insulation class	: H
Locked rotor torque	: 250 %	Service factor	: 1.00
Breakdown torque	: 300 %	Temperature rise	: 80 K
Rated speed	: 1445 rpm	Design	: N

Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page 8 / 17	Revision
Checked by				
Date	20/11/2019			



# LOAD PERFORMANCE CURVE

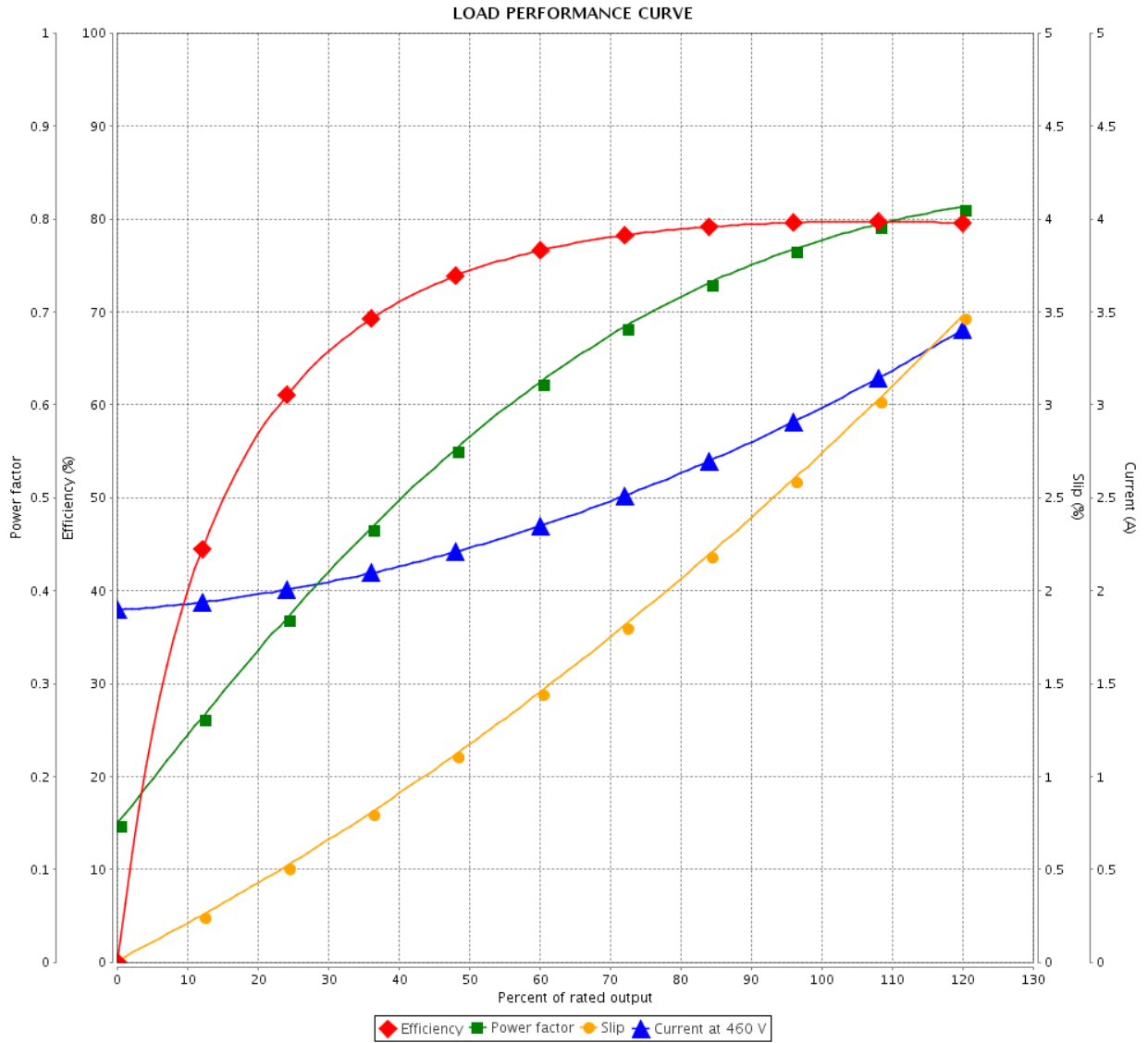
## Three Phase Induction Motor - Squirrel Cage



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

Product line : W22 Fan and Exhaust 400°C 2h  
IE1 Three-Phase

Product code : 12982673



Performance : 460 V 60 Hz 4P

Rated current	: 3.03 A	Moment of inertia (J)	: 0.0046 kgm <sup>2</sup>
LRC	: 7.0	Duty cycle	: S1
Rated torque	: 8.19 Nm	Insulation class	: H
Locked rotor torque	: 270 %	Service factor	: 1.00
Breakdown torque	: 340 %	Temperature rise	: 80 K
Rated speed	: 1750 rpm	Design	: N

Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page	Revision
Checked by			9 / 17	
Date	20/11/2019			

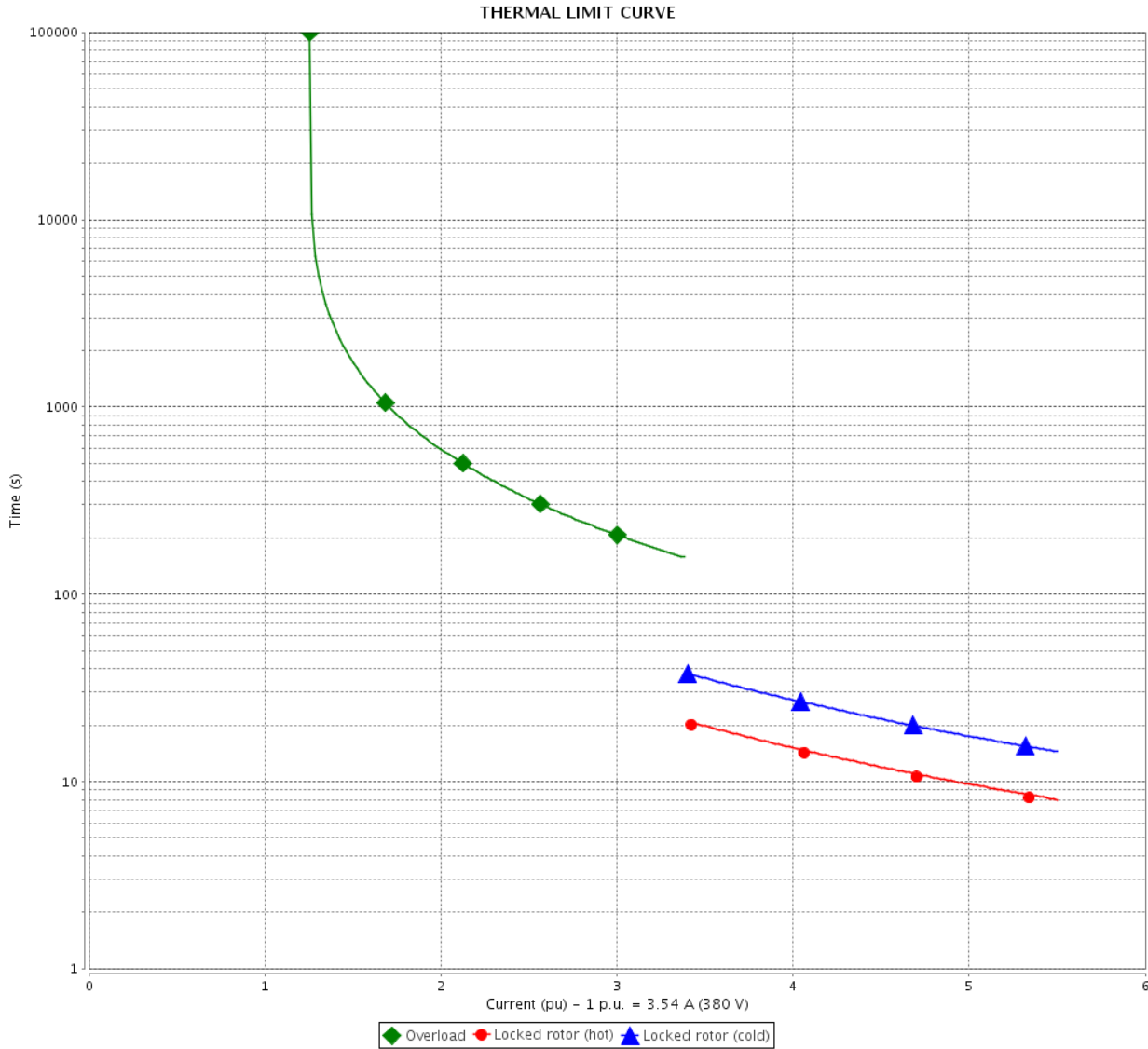
# THERMAL LIMIT CURVE



## Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : W22 Fan and Exhaust 400°C 2h IE1 Three-Phase      Product code : 12982673



Performance : 220/380 V 50 Hz 4P

Rated current	: 6.11/3.54 A	Moment of inertia (J)	: 0.0046 kgm <sup>2</sup>
LRC	: 5.5	Duty cycle	: S1
Rated torque	: 10.0 Nm	Insulation class	: H
Locked rotor torque	: 210 %	Service factor	: 1.00
Breakdown torque	: 240 %	Temperature rise	: 80 K
Rated speed	: 1430 rpm	Design	: N

Heating constant

Cooling constant

Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page 10 / 17	Revision
Checked by				
Date	20/11/2019			

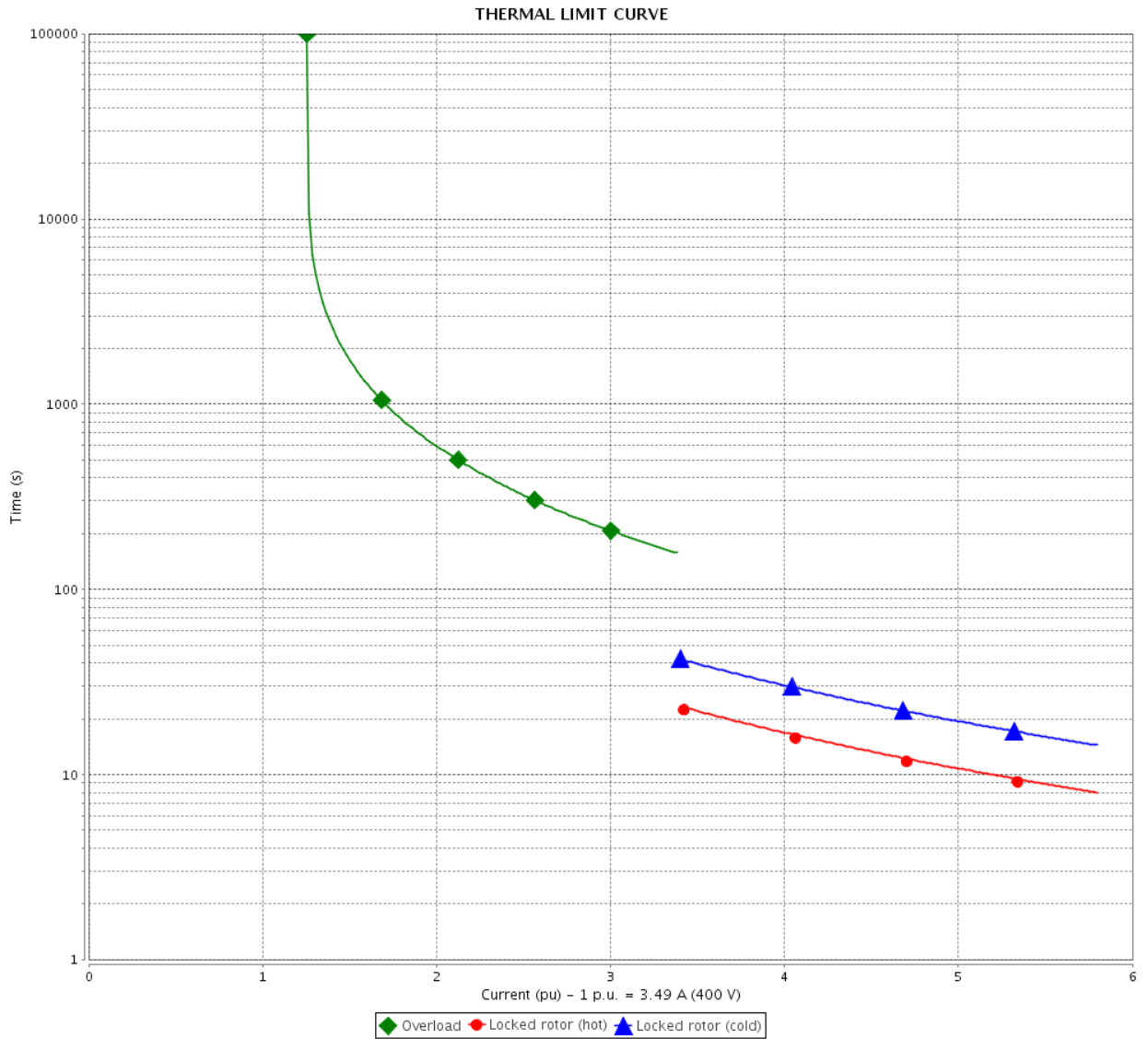
# THERMAL LIMIT CURVE



## Three Phase Induction Motor - Squirrel Cage

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

Product line : W22 Fan and Exhaust 400°C 2h IE1 Three-Phase      Product code : 12982673



Performance : 230/400 V 50 Hz 4P

Rated current	: 6.07/3.49 A	Moment of inertia (J)	: 0.0046 kgm <sup>2</sup>
LRC	: 5.8	Duty cycle	: S1
Rated torque	: 9.95 Nm	Insulation class	: H
Locked rotor torque	: 229 %	Service factor	: 1.00
Breakdown torque	: 270 %	Temperature rise	: 80 K
Rated speed	: 1440 rpm	Design	: N

Heating constant

Cooling constant

Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page	Revision
Checked by				
Date	20/11/2019			

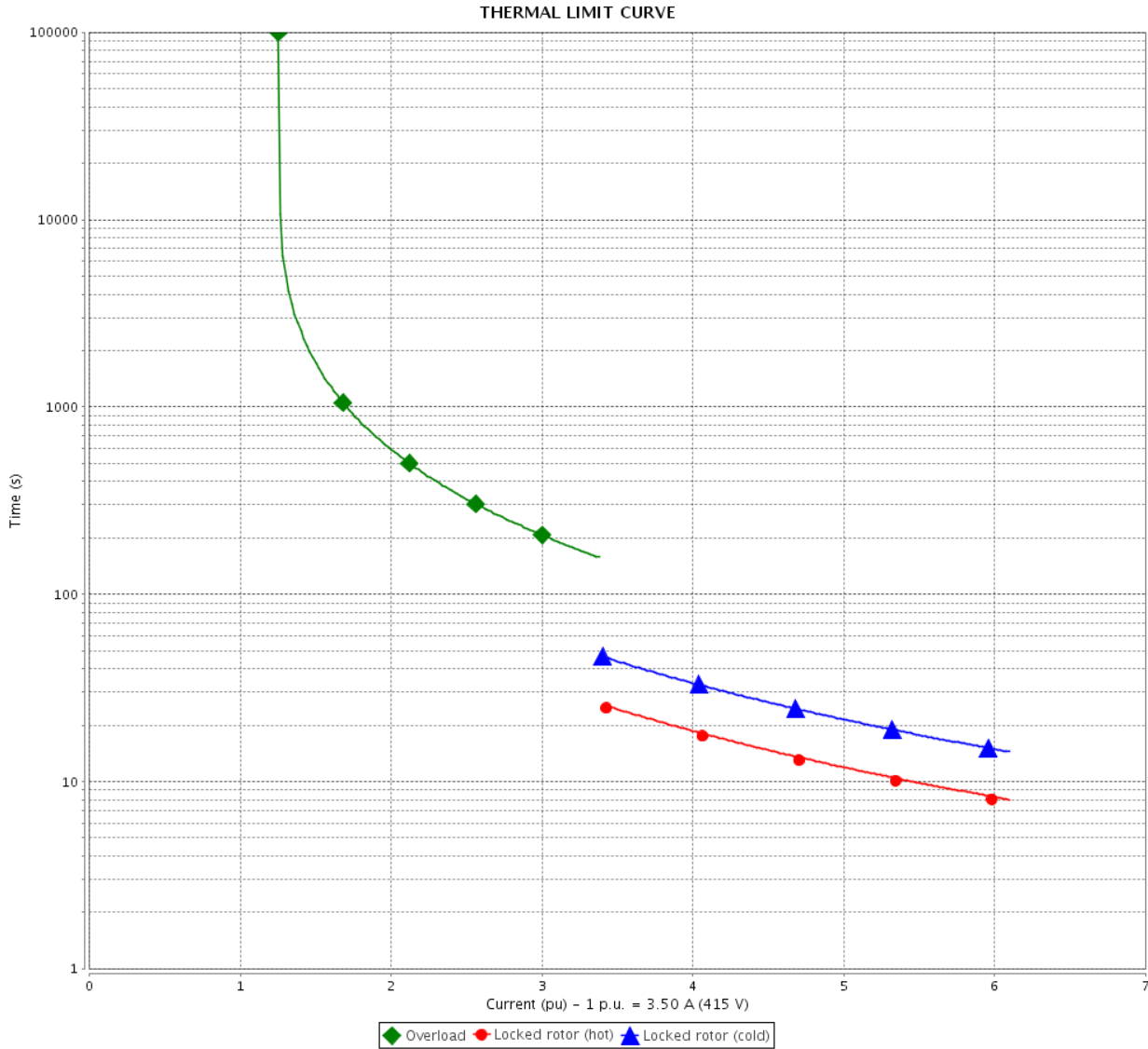
# THERMAL LIMIT CURVE

## Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W22 Fan and Exhaust 400°C 2h IE1 Three-Phase      Product code : 12982673



Performance : 240/415 V 50 Hz 4P

Rated current	: 6.05/3.50 A	Moment of inertia (J)	: 0.0046 kgm <sup>2</sup>
LRC	: 6.1	Duty cycle	: S1
Rated torque	: 9.92 Nm	Insulation class	: H
Locked rotor torque	: 250 %	Service factor	: 1.00
Breakdown torque	: 300 %	Temperature rise	: 80 K
Rated speed	: 1445 rpm	Design	: N

Heating constant

Cooling constant

Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page 12 / 17	Revision
Checked by				
Date	20/11/2019			

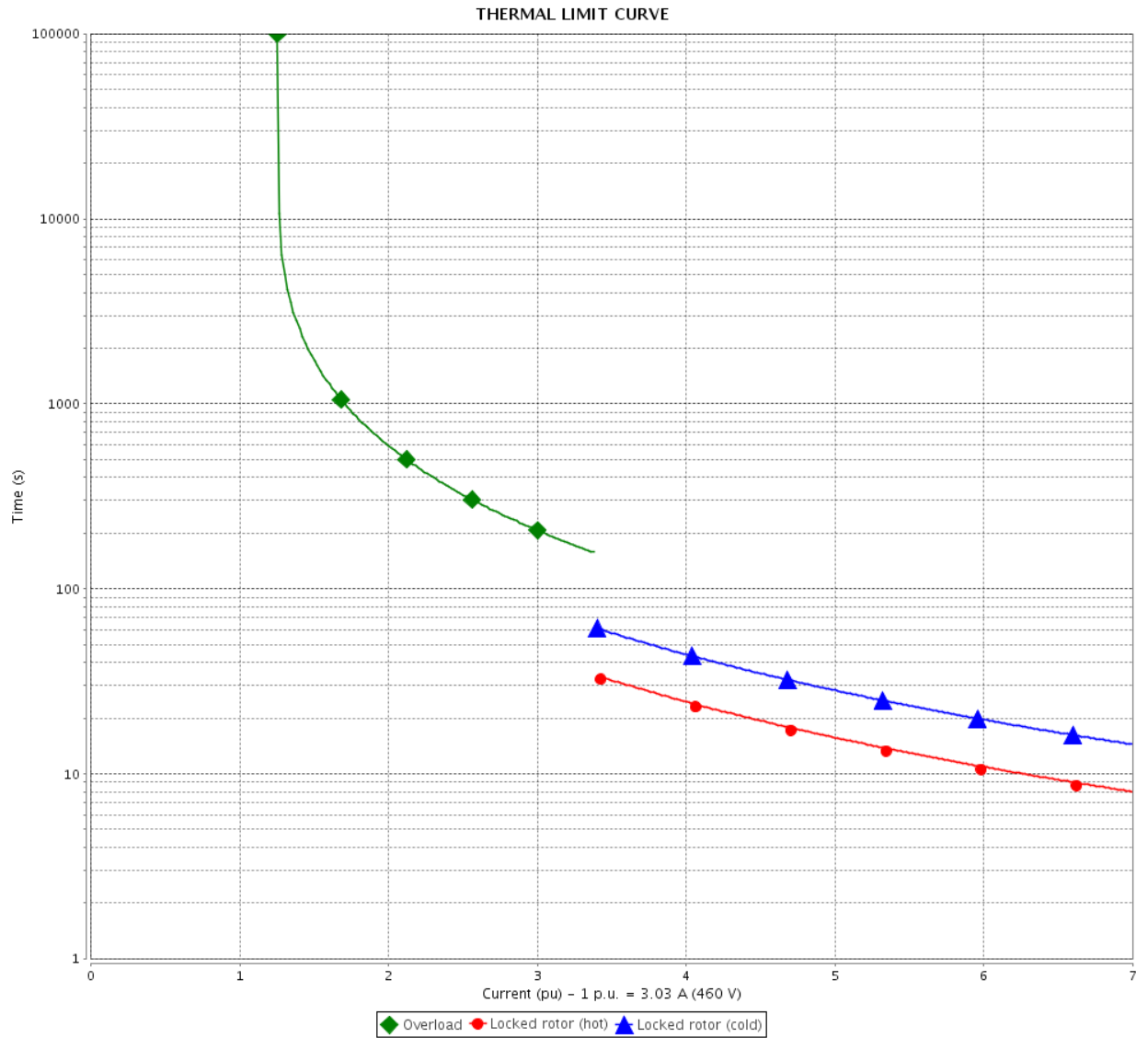
# THERMAL LIMIT CURVE



## Three Phase Induction Motor - Squirrel Cage

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

Product line : W22 Fan and Exhaust 400°C 2h IE1 Three-Phase      Product code : 12982673



Performance : 460 V 60 Hz 4P

Rated current : 3.03 A	Moment of inertia (J) : 0.0046 kgm <sup>2</sup>
LRC : 7.0	Duty cycle : S1
Rated torque : 8.19 Nm	Insulation class : H
Locked rotor torque : 270 %	Service factor : 1.00
Breakdown torque : 340 %	Temperature rise : 80 K
Rated speed : 1750 rpm	Design : N

Heating constant

Cooling constant

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

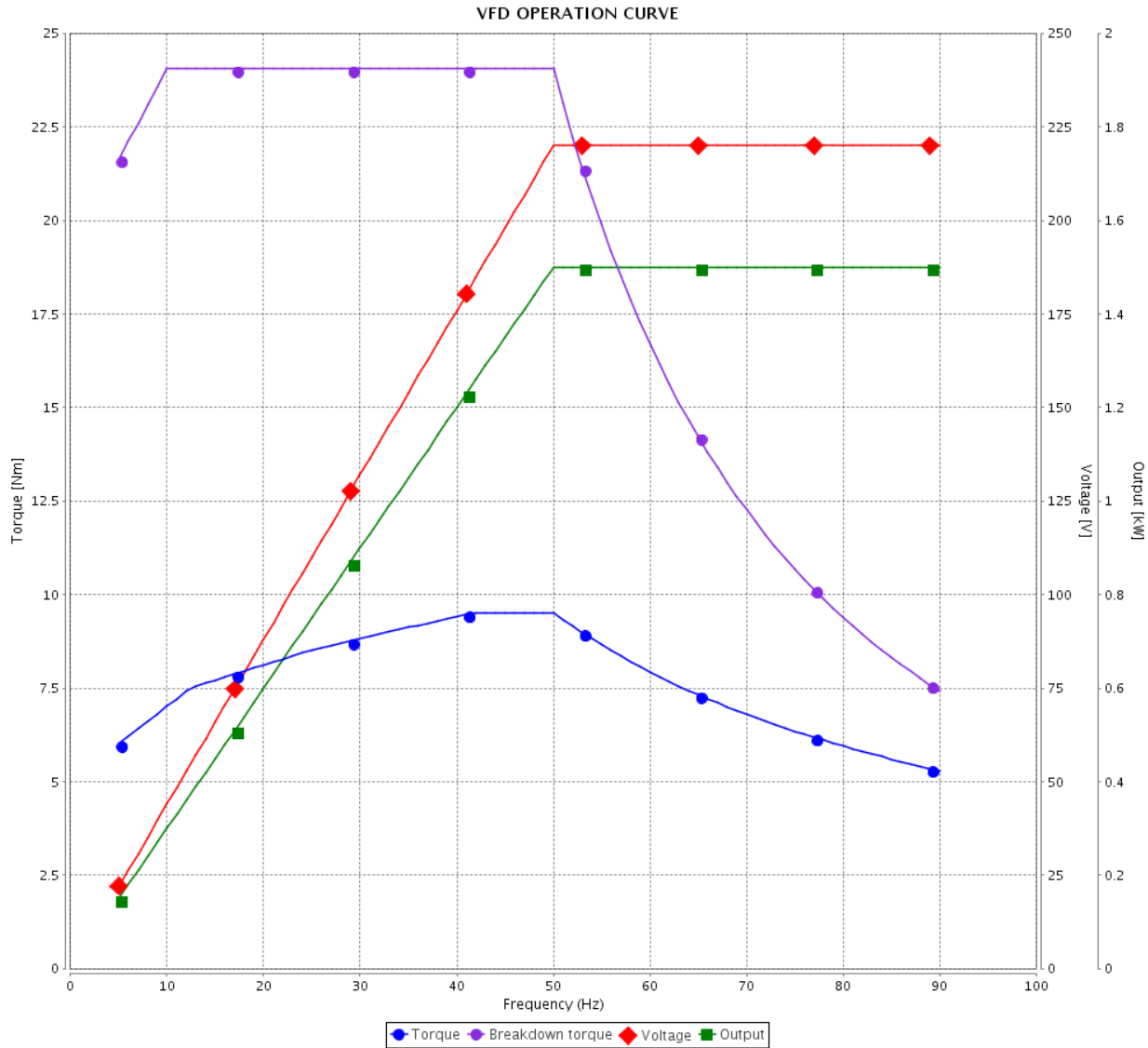
# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W22 Fan and Exhaust 400°C 2h IE1 Three-Phase      Product code : 12982673



Performance : 220/380 V 50 Hz 4P

Rated current : 6.11/3.54 A  
 LRC : 5.5  
 Rated torque : 10.0 Nm  
 Locked rotor torque : 210 %  
 Breakdown torque : 240 %  
 Rated speed : 1430 rpm

Moment of inertia (J) : 0.0046 kgm<sup>2</sup>  
 Duty cycle : S1  
 Insulation class : H  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : N

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

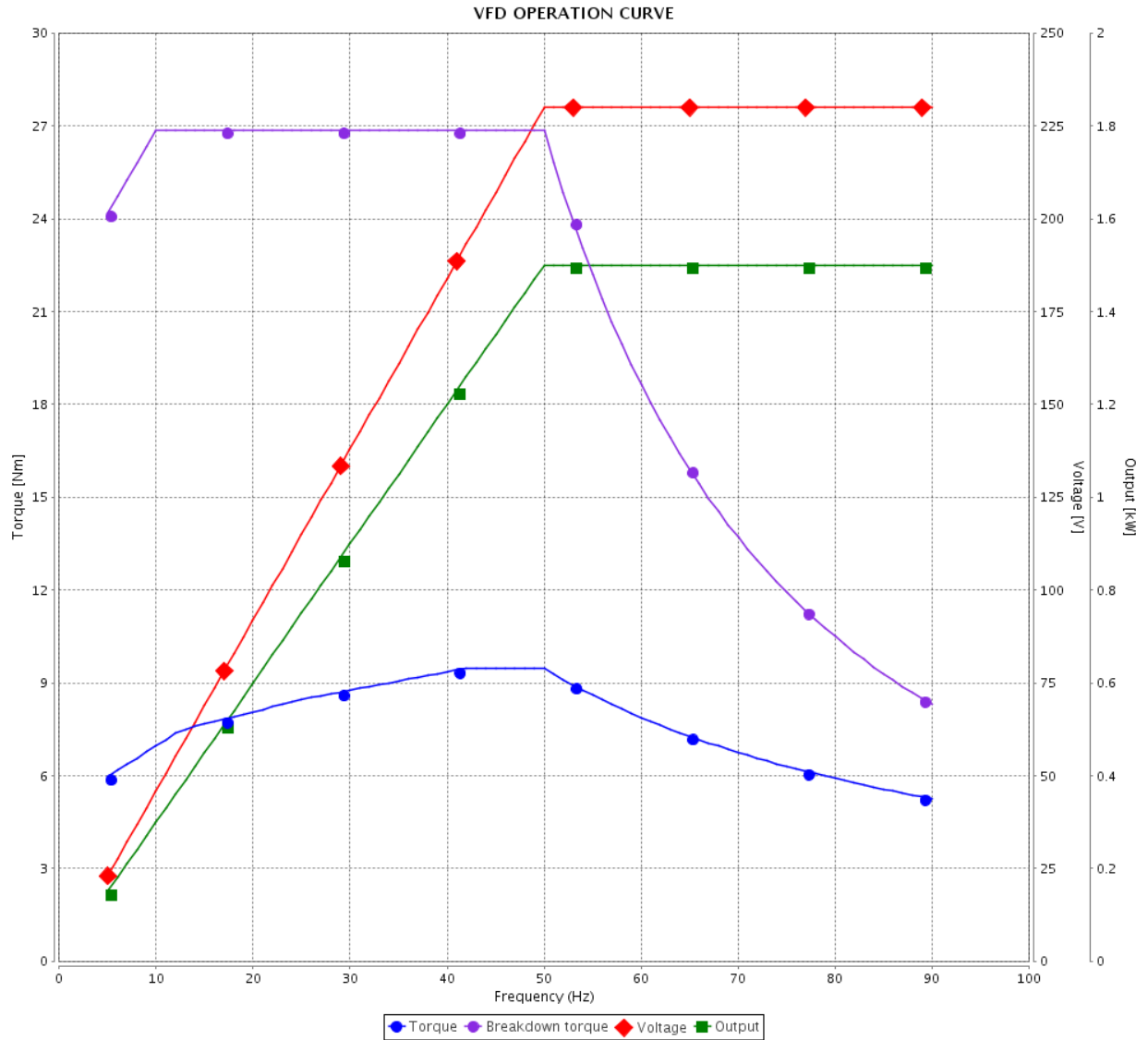
# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W22 Fan and Exhaust 400°C 2h IE1 Three-Phase Product code : 12982673



Performance : 230/400 V 50 Hz 4P

Rated current : 6.07/3.49 A  
 LRC : 5.8  
 Rated torque : 9.95 Nm  
 Locked rotor torque : 229 %  
 Breakdown torque : 270 %  
 Rated speed : 1440 rpm

Moment of inertia (J) : 0.0046 kgm<sup>2</sup>  
 Duty cycle : S1  
 Insulation class : H  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : N

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

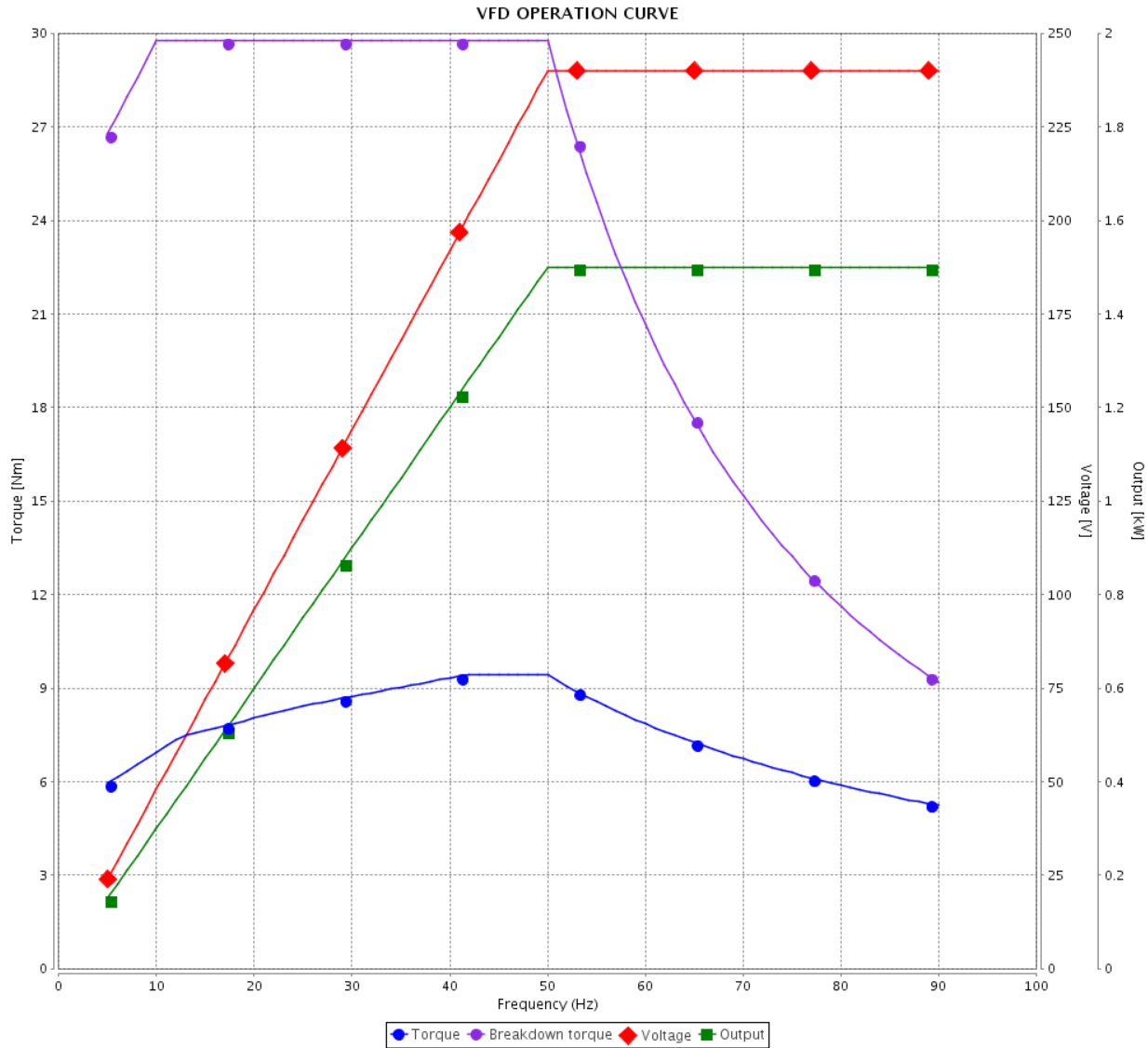
# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W22 Fan and Exhaust 400°C 2h IE1 Three-Phase      Product code : 12982673



Performance : 240/415 V 50 Hz 4P

Rated current : 6.05/3.50 A  
 LRC : 6.1  
 Rated torque : 9.92 Nm  
 Locked rotor torque : 250 %  
 Breakdown torque : 300 %  
 Rated speed : 1445 rpm

Moment of inertia (J) : 0.0046 kgm<sup>2</sup>  
 Duty cycle : S1  
 Insulation class : H  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : N

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



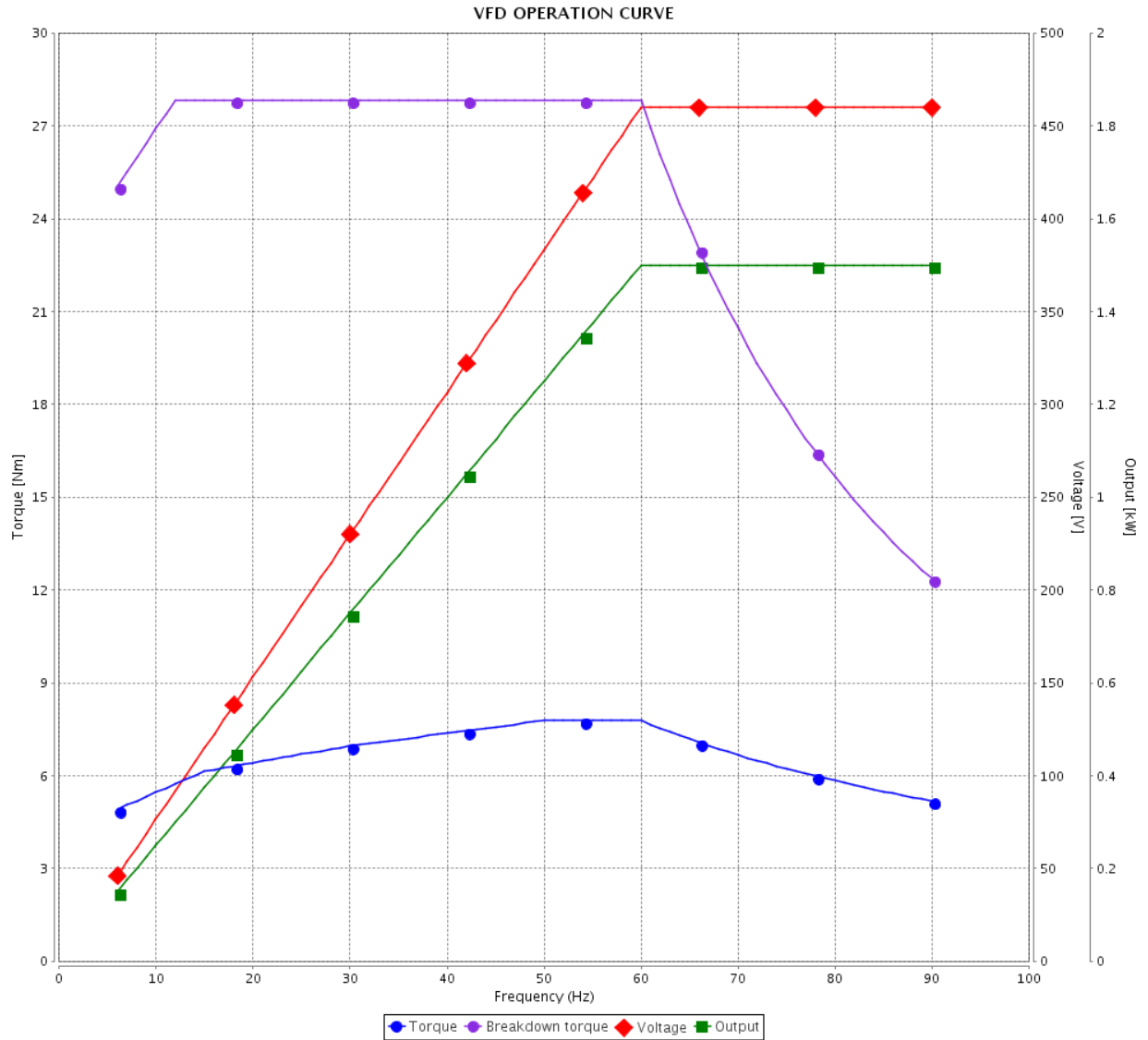
# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W22 Fan and Exhaust 400°C 2h IE1 Three-Phase      Product code : 12982673



Performance : 460 V 60 Hz 4P

Rated current	: 3.03 A	Moment of inertia (J)	: 0.0046 kgm <sup>2</sup>
LRC	: 7.0	Duty cycle	: S1
Rated torque	: 8.19 Nm	Insulation class	: H
Locked rotor torque	: 270 %	Service factor	: 1.00
Breakdown torque	: 340 %	Temperature rise	: 80 K
Rated speed	: 1750 rpm	Design	: N

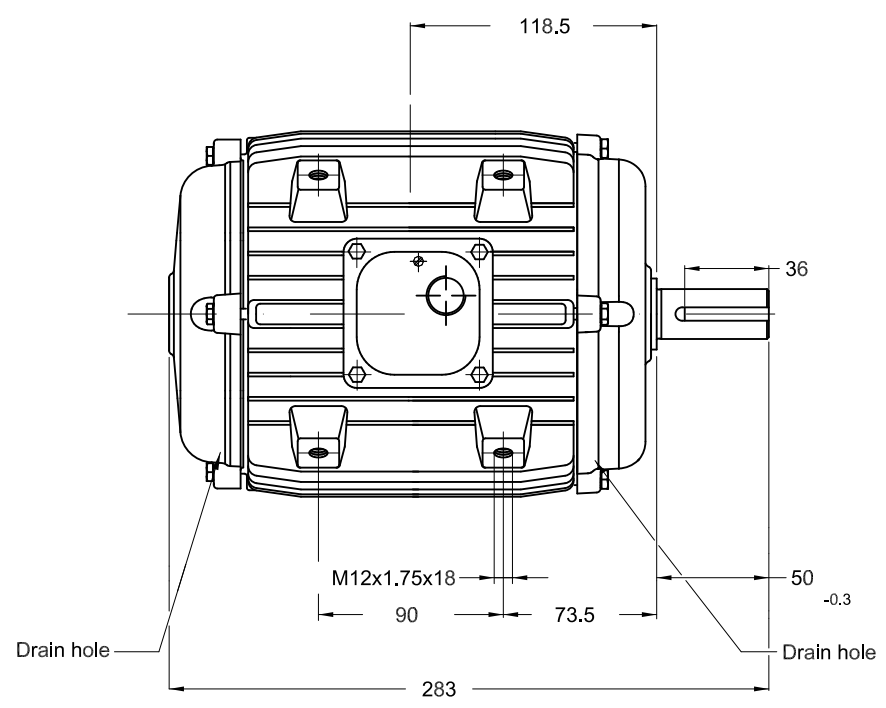
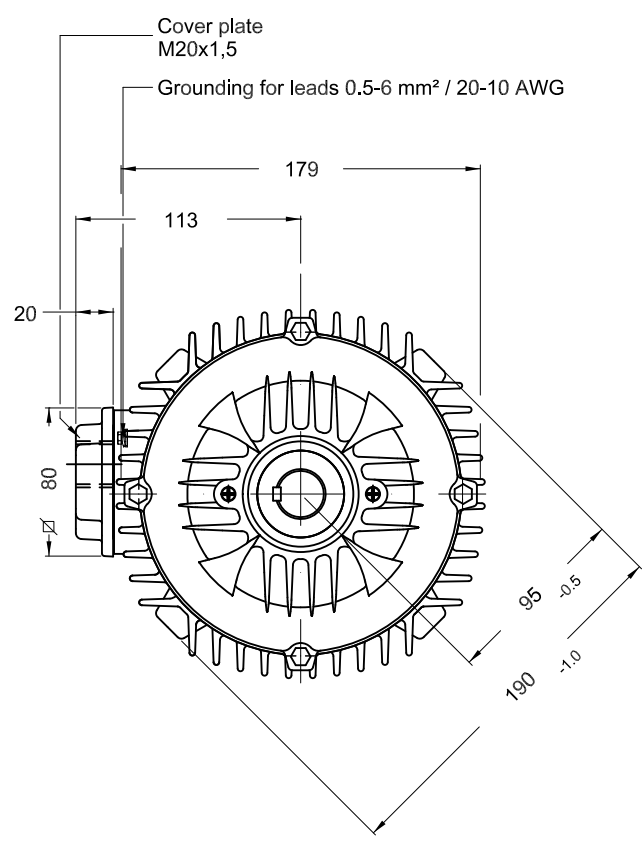
Rev.	Changes Summary	Performed	Checked	Date
Performed by		Page		Revision
Checked by		17 / 17		
Date	20/11/2019			

1 2 3 4 5 6

A

B

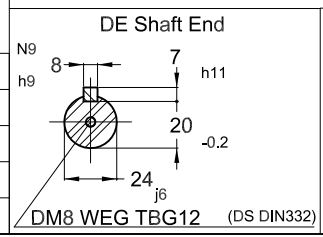
C



D

E

Ambient temperature 400 °C-2 hours (Smoke Extraction)  
 Color RAL 9006  
 Painting plan 207A  
 Mounting NEMA F-1  
 Mounting B30L(D)



1.5 kW 04 Poles 50 Hz A

ECM	LOC	SUMMARY OF MODIFICATIONS	EXECUTED	CHECKED	RELEASED	DATE	VER
EXECUTED	PIRWBUSER	THREE PHASE W22 SMOKE EXTRACTION MOTOR					
CHECKED		FRAME 90L IP55 TEAO					
RELEASED							
REL DT.	WMO	Jaragua do Sul	Product Engineering	SHEET	1 / 1		

PREVIEW  
WDD

