

Pioneering for You

## Submersible mixer

### Flumen OPTI-TR 60-3.31-4/12



#### Unit

Power consumption at duty point $P_{1,1}$	4.10 kW
Max. thrust $F$	1245 N
Thrust to power ratio	304 N/kW
Max. weight* $m$	165 kg
Explosion protection ATEX ATEX	optional
Explosion protection FM FM	optional
Protection class motor	IP68

#### Propeller

Propeller model	3-blade propeller with self-cleaning hub; clogging- and entwining-free
Nominal propeller diameter $D_{nom}$	600 mm
Propeller speed $n$	306 1/min
Transmission ratio	4.714

#### Filling quantities and types

Filling prechamber	Gear oil CLP220
Filling volume prechamber $V$	1.20 l
Filling gear chamber	Gear oil CLP220
Fill volume gear chamber $V$	0.50 l
Filling sealing chamber	White oil
Fill volume sealing chamber $V$	1.10 l

#### Motor/electronics

Motor type	T 17-4/12R (Ex)
Motor design	Submersible motor – surface-cooled
Mains connection	3~400 V, 50 Hz
Rated current $I_N$	9.40 A
Starting current – direct $I_A$	47.00 A
Starting current – star-delta $I_A$	16.00 A
Power consumption $P_{1 max}$	5.80 kW
Rated power $P_2$	4.5 kW
Speed original $n$	1405 1/min
Motor efficiency class	–
Efficiency $\eta_M$	78.0 %
Power factor $\cos \varphi$	0.89
Min. fluid temperature $T_{min}$	3 °C
Max. fluid temperature $T_{max}$	40 °C
Max. immersion depth	20 m
Insulation class	H
Max. switching frequency $t$	15 rph
min. switching break $t$	3 min
Starting torque $M$	67 Nm
Moment of inertia	0.0108 kg/m <sup>2</sup>
Motor bearings	1 grooved ball bearing, 1 two-row inclined ball bearing

#### Materials

Motor housing	5.1301, EN-GJL-250
Static gaskets	FKM
Motor shaft	1.4021, X20Cr13
Seal, gear/sealing chamber	SiC/SiC, Q1Q1VGG
Gear housing	5.1301, EN-GJL-250
Planetary gear	1.7131, 16MnCr5
Hollow gear	1.5216, 17MnV6
Sun gear	1.7131, 16MnCr5
Output shaft	1.4462, X2CrNiMoN22-5-3
Seal, gear chamber/prechamber	FKM
Sealing chamber	5.1301, EN-GJL-250
Seal on the fluid side	SiC/SiC, Q1Q1VGG
Seal bushing	1.4571, X6CrNiMoTi17-12-2
Propeller	1.4408, GX5CrNiMo19-11-2

#### Gear

Gear construction type	m 2.0 as per DIN 780-1:1977-05 /P10 (ISO54: 1996-12); sun and planetary gears case hardened and sanded, internal gear butt-jointed
Gear bearings	Three needle roller bearing (planetary), one two-row inclined ball bearing and one grooved ball bearing (output shaft)
Service life $L_{h10}$	100,000 operating hours, ISO 281:2007-02

\*maximum weight including accessories