

Pioneering for You

Submersible mixer

Flumen OPTI-TR 90-2.21-4/12



Unit

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|---|----------|
| Power consumption at duty point $P_{1,1}$ | 3.70 kW |
| Max. thrust F | 1750 N |
| Thrust to power ratio | 473 N/kW |
| Max. weight* m | 155 kg |
| Explosion protection ATEX ATEX | optional |
| Explosion protection FM FM | optional |
| Protection class motor | IP68 |

Propeller

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|--------------------------------------|--|
| Propeller model | 2-blade propeller with self-cleaning hub; clogging- and entwining-free |
| Nominal propeller diameter D_{nom} | 900 mm |
| Propeller speed n | 219 1/min |
| Transmission ratio | 6.571 |

Filling quantities and types

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|---------------------------------|-----------------|
| 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

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|-------------------------------------|---|
| 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 η_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 ² |
| Motor bearings | 1 grooved ball bearing, 1 two-row inclined ball bearing |

Materials

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|-------------------------------|---------------------------|
| 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 | PUR-GFRP |

Gear

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|------------------------|---|
| 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