

Pioneering for You

## Submersible mixer

### Flumen OPTI-TR 90-2.13-8/8



#### Unit

Power consumption at duty point $P_{1,1}$	1.74 hp
Max. thrust $F$	159.6 lbf
Thrust to power ratio	90 lbf/hp
Max. weight* $m$	330.7 lb
Explosion protection ATEX ATEX	optional
Explosion protection FM FM	optional
Protection class motor	IP68

#### Propeller

Propeller model	2-blade propeller with self-cleaning hub; clogging- and entwining-free
Nominal propeller diameter $D_{nom}$	35.4 in (*)
Propeller speed $n$	131 RPM
Transmission ratio	6.571

#### Filling quantities and types

Filling prechamber	Gear oil CLP220
Filling volume prechamber $V$	0.3 US gal
Filling gear chamber	Gear oil CLP220
Fill volume gear chamber $V$	0.1 US gal
Filling sealing chamber	White oil
Fill volume sealing chamber $V$	0.3 US gal

#### Motor/electronics

Motor type	T 17-8/8R (Ex)
Motor design	Submersible motor – surface-cooled
Mains connection	3~460 V, 60 Hz
Rated current $I_N$	3.60 A
Starting current – direct $I_A$	18.00 A
Starting current – star-delta $I_A$	6.00 A
Power consumption $P_{1 max}$	2.7 hp
Rated power $P_2$	1.7 hp
Speed original $n$	840 RPM
Motor efficiency class	–
Efficiency $\eta_M$	65.0 %
Power factor $\cos \varphi$	0.70
Min. fluid temperature $T_{min}$	37 °F
Max. fluid temperature $T_{max}$	104 °F
Max. immersion depth	66 ft
Insulation class	H
Max. switching frequency $t$	15 rph
min. switching break $t$	3 min
Starting torque $M$	22.1 lbf ft
Moment of inertia	0.27 lb ft <sup>2</sup>
Motor bearings	1 grooved ball bearing, 1 two-row inclined ball bearing

#### Materials

Motor housing	ASTM A48, Class No. 35
Static gaskets	FKM Fluoro rubber
Motor shaft	AISI 420
Seal, gear/sealing chamber	SiC/SiC, Q1Q1VGG
Gear housing	ASTM A48, Class No. 35
Planetary gear	AISI 5115
Hollow gear	Grade 60
Sun gear	AISI 5115
Output shaft	AISI 329
Seal, gear chamber/prechamber	FKM Fluoro rubber
Sealing chamber	ASTM A48, Class No. 35
Seal bushing	AISI 316Ti
Propeller	PUR-GFRP

#### 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