



## Submersible Sewage Pump With Cutter

Type DF

### APPLICATIONS

- Ideal for waste water applications containing soft or fibrous solids.
- Industrial waste water drainage.

### TECHNICAL DETAILS

- Non-Clog impeller fitted with cutter prevents clogging by fibrous matter.
- Range of models from 65 to 100 mm discharge size, fitted with cutter.



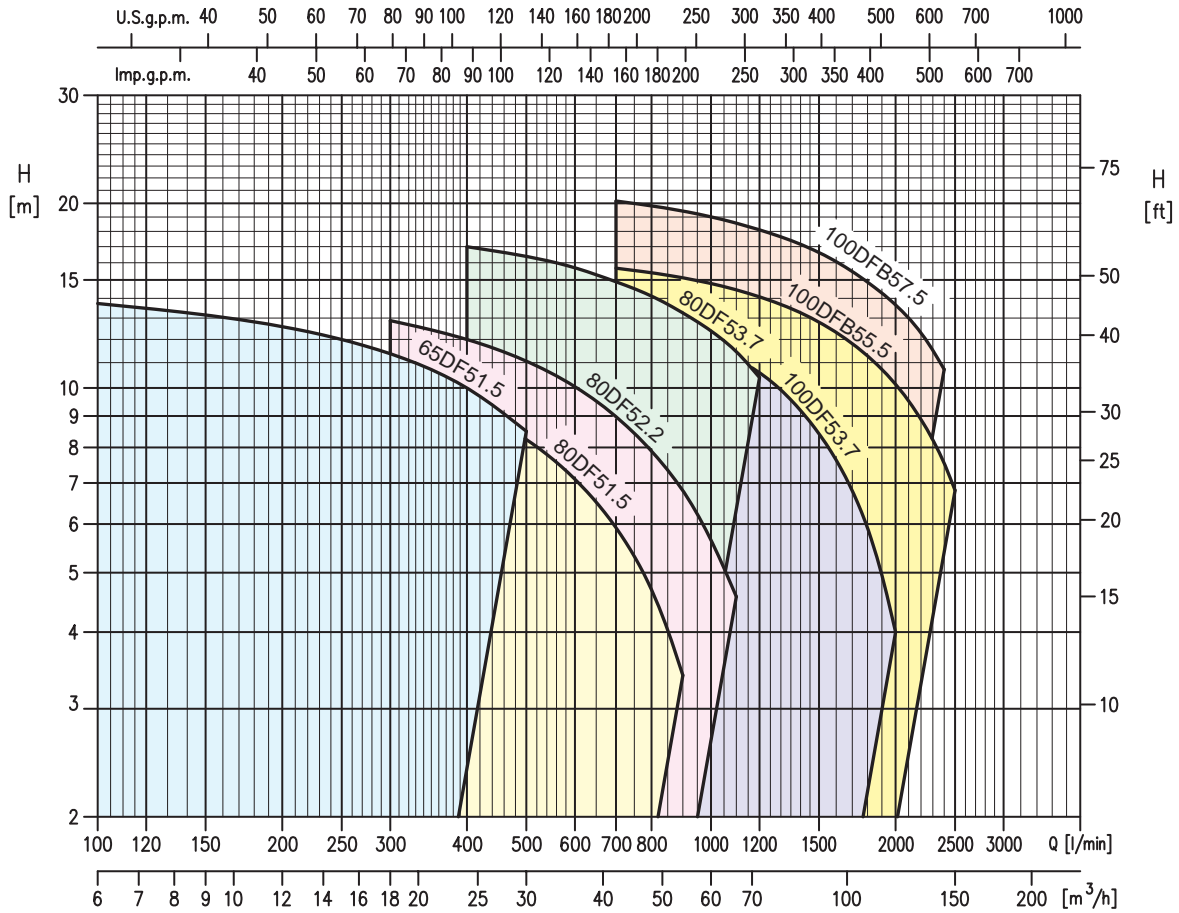
Impeller with cutter

### TECHNICAL DATA

- Maximum temperature of the liquid: 40°C
- Max solids size for passage: 35 mm (65DF), 50 mm (80 DF)  
60 mm (100DF, 100DFB)
- Max fibers length: 195mm (65DF), 240mm (80DF), 300mm (100DF)
- 4 poles motor
- Insulation class F
- Degree of protection IP68
- 415±10%, 50Hz (1.5-7.5kW) three-phase motor
- Flanges: DN65, DN80, DN100



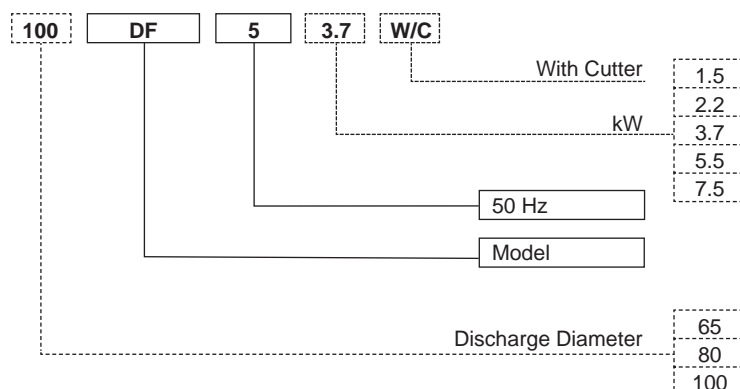
## PERFORMANCE CHART



**PERFORMANCE TABLE 65-80-100 DF**

Model	P <sub>2</sub>		Q=Flow rate															
	[HP]	[kW]	l/min	100	250	300	400	500	700	900	1000	1100	1200	1400	1600	2000	2400	2500
			m <sup>3</sup> /h	6	15	18	24	30	42	54	60	66	72	84	96	120	144	150
H=Head [m]																		
65DF51.5	2	1.5	13.7	12.0	11.4	10.0	8.5	-	-	-	-	-	-	-	-	-	-	-
80DF51.5	2	1.5	-	10.7	10.3	9.3	8.2	5.9	3.4	-	-	-	-	-	-	-	-	-
80DF52.2	3	2.2	-	-	12.9	12.0	11.1	9.0	6.8	5.7	4.6	-	-	-	-	-	-	-
80DF53.7	5	3.7	-	-	-	17.0	16.4	14.9	13.4	12.6	11.6	10.4	-	-	-	-	-	-
100DF53.7	5	3.7	-	-	-	-	14.1	13.1	12.2	11.7	11.2	10.6	9.2	7.6	4.0	-	-	-
100DFB55.5	7.5	5.5	-	-	-	-	-	15.7	15.1	14.8	14.5	14.1	13.3	12.3	10.1	7.5	6.8	-
100DFB57.5	10	7.5	-	-	-	-	-	20.2	19.4	19.0	18.6	18.1	17.2	16.1	13.7	10.7	-	-

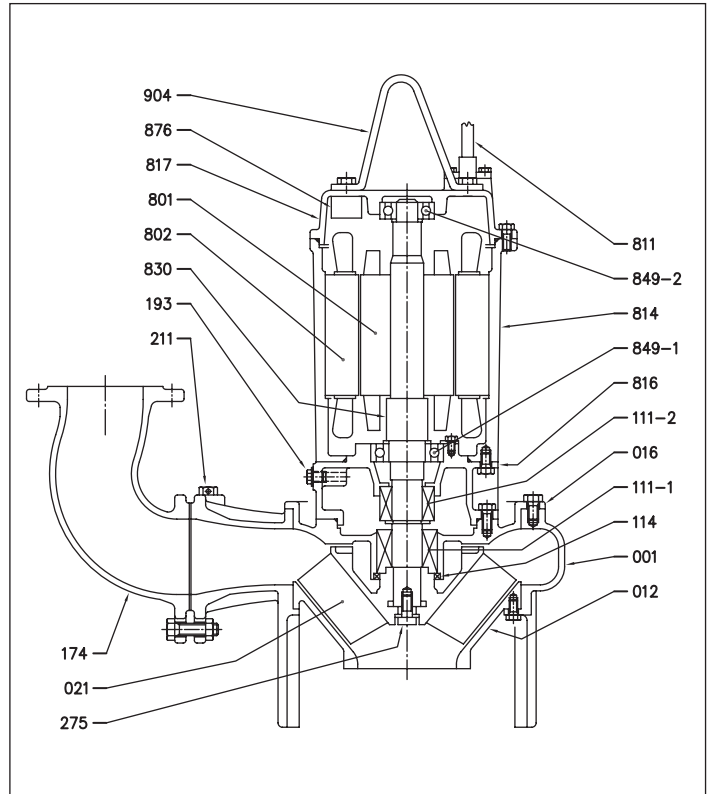
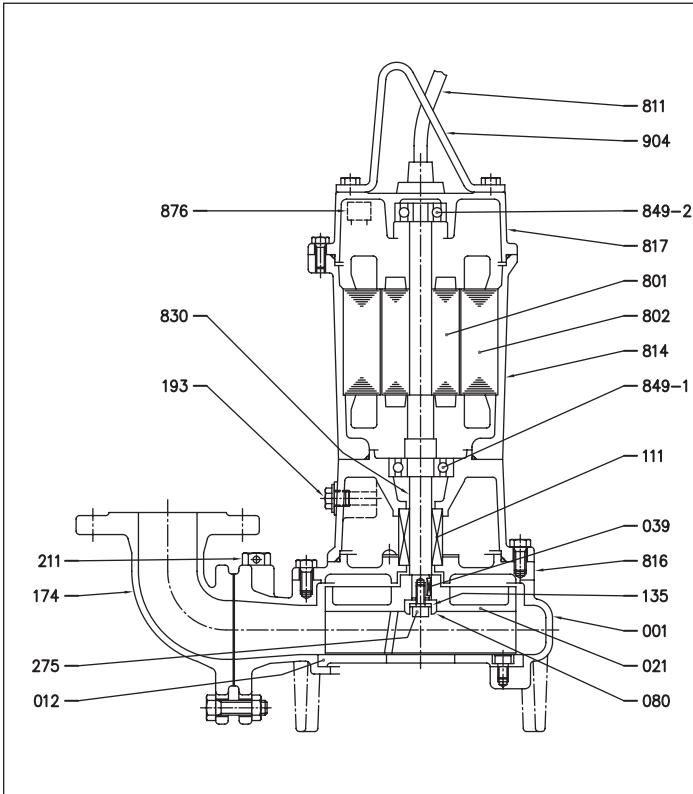
## PUMP IDENTIFICATION CODE



## SECTIONAL VIEW

**65DF (1.5 kW), 80DF (1.5-3.7 kW),  
100DF (3.7 kW)**

**100DF (5.5-7.5 kW)**



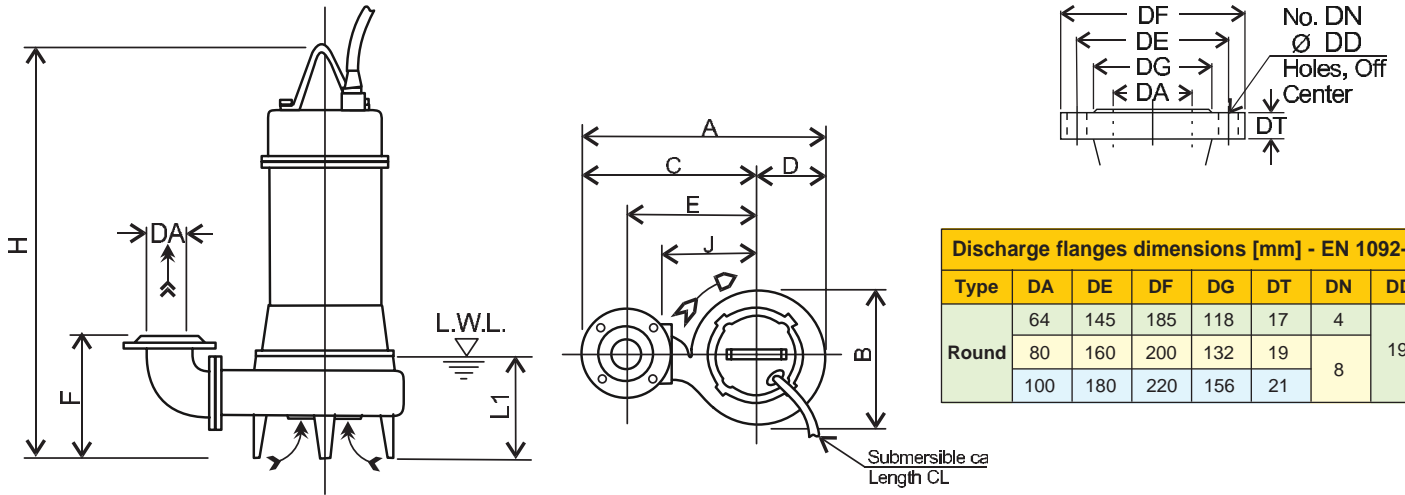
## MATERIALS TABLE

Ref.	Name	Material	Ref.	Name	Material
001	Pump body	Cast Iron EN-GHJL-200-EN 1561	193-2	Oil plug + Gasket	NBR/EN 1.4301 (AISI 304)
012	Suction side lid	Cast Iron EN-GHJL-200-EN 1561	211	Airvent valve [1]	-
016	Mechanical seal cover	Cast Iron EN-GHJL-200-EN 1561	275	Impeller nut	EN 1.4301 (AISI 304)
021	Impeller	Cast Iron EN-GHJL-200-EN 1561	801	Rotor	-
039	Key	EN 1.4028 (AISI 420)	802	Stator	-
080	Bushing	EN 1.4301 (AISI 304)	811	Cable	-
095	Stay [1]	EN 1.4301 (AISI 304)	814	Motor case	Cast Iron EN-GHJL-200-EN 1561
111	Mechanical seal	-	816	Motor support	Cast Iron EN-GHJL-200-EN 1561
111-1	Mechanical seal	-	817	Motor cover	Cast Iron EN-GHJL-200-EN 1561
111-2	Mechanical seal	-	830	Shaft	EN 1.4006 (AISI 403)
114	Gasket	NBR	849-1	Ball bearing	-
135	Seal washer	EN 1.4301 (AISI 304)	849-2	Ball bearing	-
174	Discharge bend	Cast Iron EN-GHJL-200-EN 1561	876	Protector	-
193	Oil plug	NBR/EN 1.4301 (AISI 304)	904	Lifting hanger	Stainless Steel
193-1	Plug	EN 1.4301 (AISI 304)			

[1] - Excluded 150DL, 200DL, 250DL e 300DL

- Mechanical seal: SiC/SiC/NBR (pump side)  
Carbon/Ceramic/NBR (motor side)

## DIMENSION

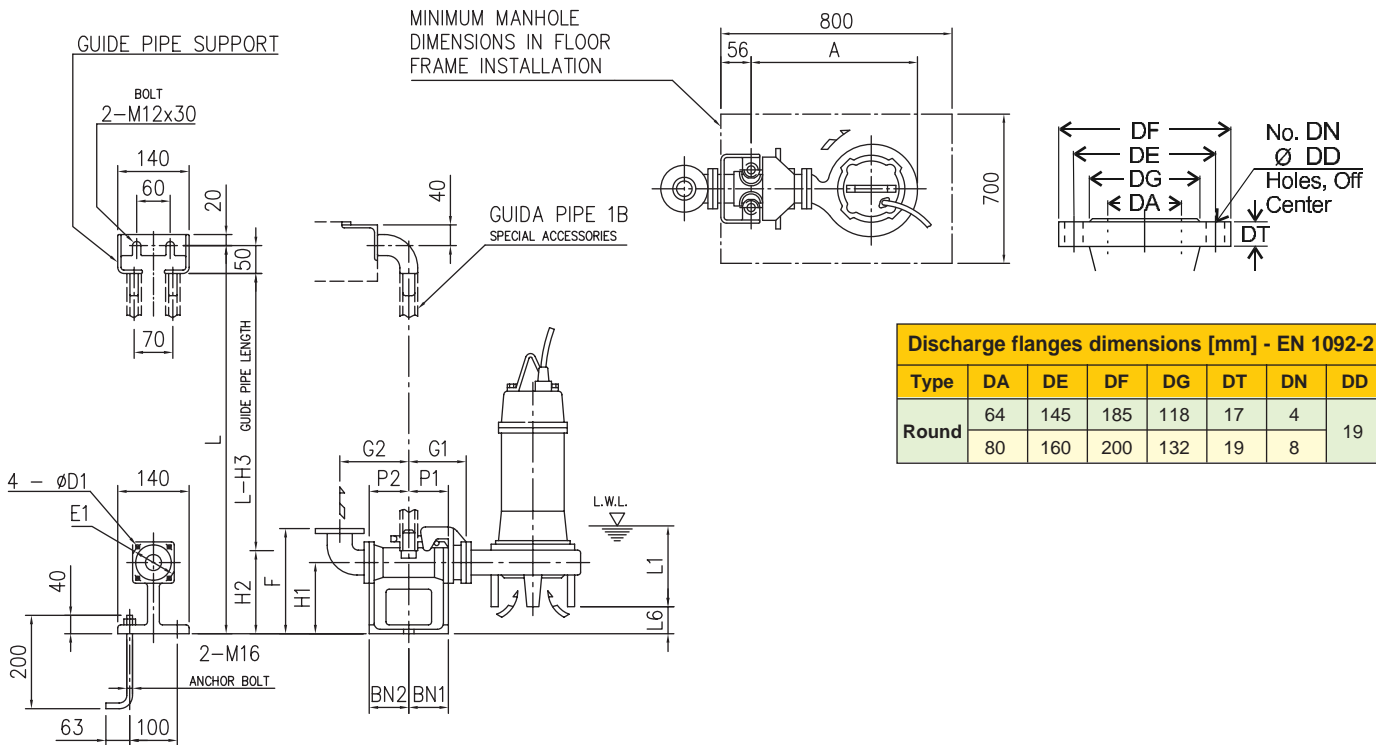


Type	DA	DE	DF	DG	DT	DN	DD
Round	64	145	185	118	17	4	19
	80	160	200	132	19	8	
	100	180	220	156	21		

DA	Model	[kW]	A	B	C	D	E	F	H	J	L1 (*)	CL [m]	Weight [kg]
65	65DF51.5	1.5	497	291	353	144	265	200	576	200	140	10	52
80	80DF51.5	1.5	524	292	378	146	285	220	597	210	165		55
	80DF52.2	2.2	542	308	388	154	295		654	220			67
	80DF53.7	3.7	567	328	403	164	310	687	235	75			
100	100DF53.7	3.7	614	335	445	169	340	250	706		185		79
	100DFB55.5	5.5	646	369	460	186	355	323	768	250	205		123
	100DFB57.5	7.5	673	385	480	193	375		760	270		141	

(\*) - L.W.L (Low Water Level)

## 65DF, 80DF (1.5-3.7 kW) with QDC (quick discharge connector)



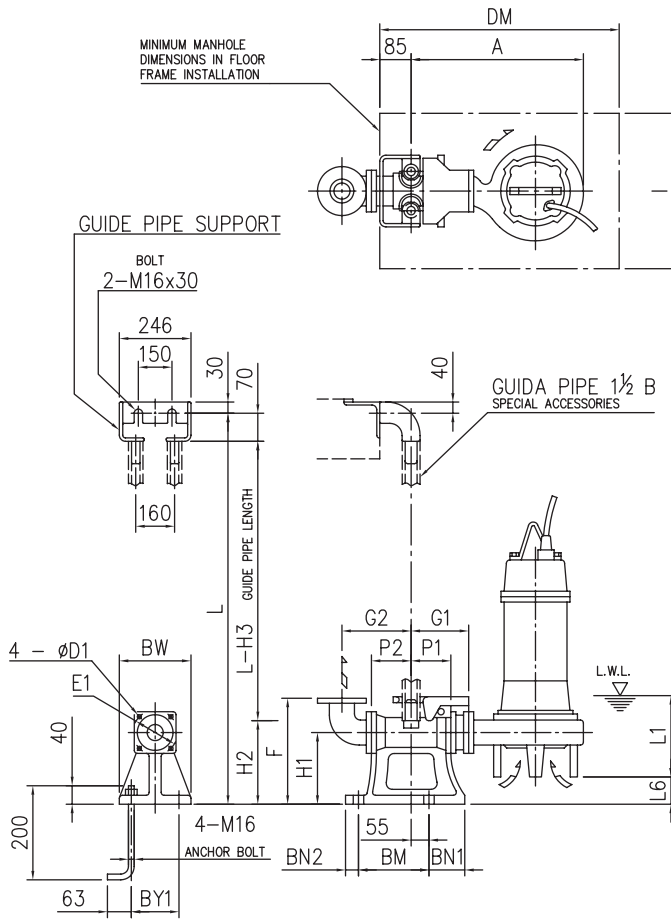
Type	DA	DE	DF	DG	DT	DN	DD
Round	64	145	185	118	17	4	19
	80	160	200	132	19	8	

DA	Model	[kW]	A	P1	P2	G1	G2	F	H1	H2	H3	L1 (*)	L6	BN1	BN2	D1	E1	QDC (quick discharge connector) Model	Weight [kg]
65	65DF51.5	1.5	464	75	95	120	160	250	145	190	240	140	50	75	95	12	140	LM65	14
80	80DF51.5	1.5	481		90	125	165	285	175	230	280	165	65		90	15	155	LM80	17
	80DF52.2	2.2	499																
	80DF53.7	3.7	524																

(\*) - L.W.L (Low Water Level)

## DIMENSION

### 100DF with QDC (quick discharge connector)



Discharge flanges dimensions [mm] - EN 1092-2							
Type	DA	DE	DF	DG	DT	DN	DD
Round	80	160	200	132	19	8	19
	100	180	220	156	21		
	150	240					

DA	Model	[kW]	A	P1	P2	G1	G2	F	H1	H2	H3	L1 (*)	L6	BN1	BN2	BM	BY1	BW	DM	I	D1	E1	QDC (quick discharge connector)	
																							Model	Weight [kg]
100	100DF53.7	3.7	589	105	105	185	210	365	240	265	335	185	115	100	40	220	180	230	800	700	19	175	LL100	46
	100DFB55.5	5.5	621									205	42											
	100DFB57.5	7.5	648																					

(\*) - L.W.L (Low Water Level)

## MOTOR DATA

### DF (1.5-3.7 kW)

[P2]		[kW]	1.5			2.2			3.7			
Resistance at 20°C		[Ω]	8.466			5.937			3.447			
GD <sup>2</sup>		[kg•m <sup>2</sup> ]	0.013			0.025			0.04			
Voltage		[V]	380	400	415	380	400	415	380	400	415	
Load	0%	Current	[A]	2.3	2.51	2.746	2.65	2.85	3.2	3.5	3.65	3.9
		Power	[W]	500	420	546	650	450	420	650	800	450
	75%	Current	[A]	3.47	3.37	3.56	4.65	4.34	4.46	6.70	6.73	6.25
		Efficiency	[%]	62.67	70.31	62.99	63.89	69.75	69.23	73.21	69.72	76.38
		Power factor	[%]	78.70	68.43	69.87	84.32	78.63	74.40	85.95	85.37	80.93
		Speed	[min <sup>-1</sup> ]	1438	1449	1446	1440	1452	1458	1447	1449	1455
	100%	Current	[A]	4.10	3.90	4.10	5.70	5.20	5.20	8.40	8.30	7.60
		Efficiency	[%]	65.69	72.58	65.73	66.44	72.31	71.82	74.67	72.09	77.98
		Power factor	[%]	84.62	76.54	77.83	88.26	84.45	81.96	89.62	89.25	86.85
		Speed	[min <sup>-1</sup> ]	1414	1432	1426	1417	1437	1443	1427	1430	1440
	Locked Rotor Torque		[%]	319	378	385	216	277	301	229	275	296
	Starting Current		[A]	23.70	24.50	23.60	29.30	30.00	32.00	49.40	47.50	49.00
No. starts per hour			10									
Model			ZDLEU									

### DF (5.5-7.5 kW)

[P2]		[kW]	5.5			7.5			
Resistance at 20°C		[Ω]	2.339			1.513			
GD <sup>2</sup>		[kg•m <sup>2</sup> ]	0.61			0.071			
Voltage		[V]	380	400	415	380	400	415	
Load	0%	Current	[A]	4.9	4.3	4.5	7.85	6.5	7.1
		Power	[W]	470	900	470	707	1200	707
	75%	Current	[A]	9.38	8.97	8.58	13.38	12.46	12.07
		Efficiency	[%]	79.17	75.51	79.10	79.46	76.94	79.81
		Power factor	[%]	84.39	87.90	84.53	80.38	84.72	81.25
		Speed	[min <sup>-1</sup> ]	1464	1458	1464	1467	1463	1467
	100%	Current	[A]	11.70	11.30	10.70	16.40	15.50	14.80
		Efficiency	[%]	80.42	77.14	80.38	80.98	78.64	81.26
		Power factor	[%]	88.83	91.07	88.97	85.80	88.81	86.76
		Speed	[min <sup>-1</sup> ]	1451	1442	1451	1455	1449	1455
	Locked Rotor Torque		[%]	271	249	271	288	272	288
	Starting Current		[A]	81.00	70.00	74.00	120.00	104.00	108.00
No. starts per hour			10						
Model			ZDLEU						

\* Dimensional details are provided for reference only.

\* All specifications are subject to change without prior notice.



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