

**EBARA**

CS2220EE

# PROCESS PUMPS

Vertical, In-Line, Centrifugal

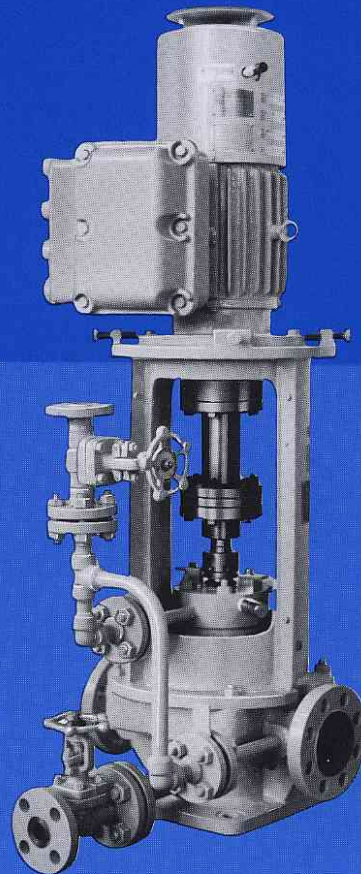
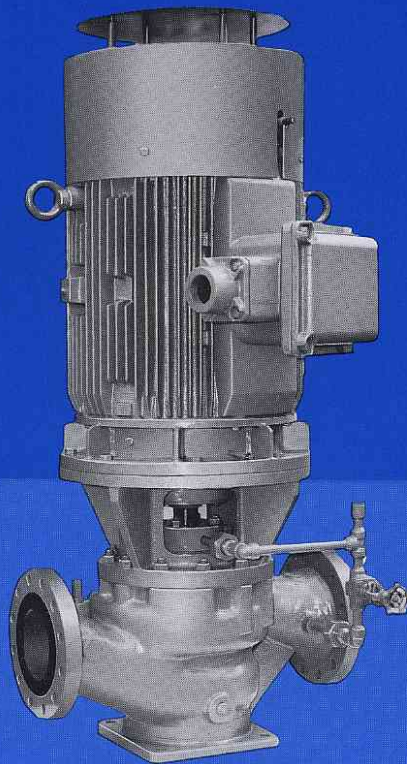
Model

# LPW

API 610

API 682

BS 4082



# PROCESS PUMPS

Vertical, In-Line, Centrifugal

Model

# LPW

API 610

API 682

BS 4082

EBARA PROCESS PUMP MODEL LPW of vertical, in-line, single stage, centrifugal type have been widely used in petroleum refineries, the petrochemical industry and other chemical industries for the

past few years. Many improvements have been recently made on this pump to enhance its performance. "The money saver". Our modern mass production facilities enable us to pass the cost savings on to you.

Unique design of this high performance pump provides for superior and extended low-cost operation. Both spacer coupled and close coupled designs are available.

## Applications

- Petroleum Refineries
- The Petrochemical Industry
- Other Chemical Industries

## Ratings

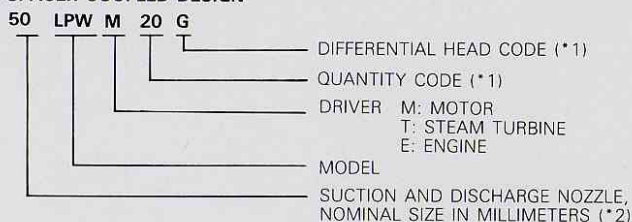
Capacities	To 580 m <sup>3</sup> /h (2550 USGPM)
Heads	To 310 m <sup>3</sup> (1020 ft)
Max. working pressures (Gage)	Consistent with the pressure ratings of ANSI class 300 flanges for spacer coupled design. Conforming to BS 4082 class R (heavy duty) for close coupled design. Higher pressure ratings are available.
Rotation	Clockwise viewed from motor side
Impeller type	Enclosed
Temperatures	- 100 to 200°C (- 148 to 392°F) for close coupled design. - 100 to 400°C (- 148 to 752°F) for spacer coupled design.
Flanges	ANSI class 300 as standard
Nozzles	Side-Side
Stuffing box	Suitable for conventional packing & mechanical seal

## Features

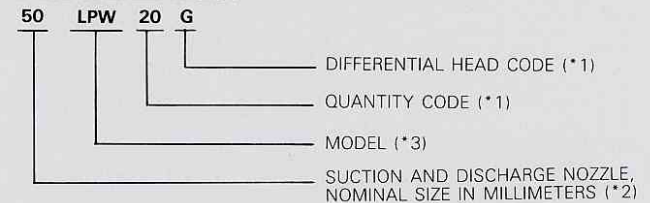
- Vertical in-line and heavy duty design.
- Full compliance with API 610/API 682 for spacer coupled design. BS 4082 class R (heavy duty) and API 610/API 682 for close coupled design.
- All components have been designed for maximum parts interchangeability.
- Flexibility of design handles wide range of liquids.
- All sizes stocked for fast shipment.
- Low NPSH performance.
- Smaller installation area and easy maintenance.

## Designation

### SPACER COUPLED DESIGN



### CLOSE COUPLED DESIGN



Notes: (\*1) This code classification is as per BS 4082.

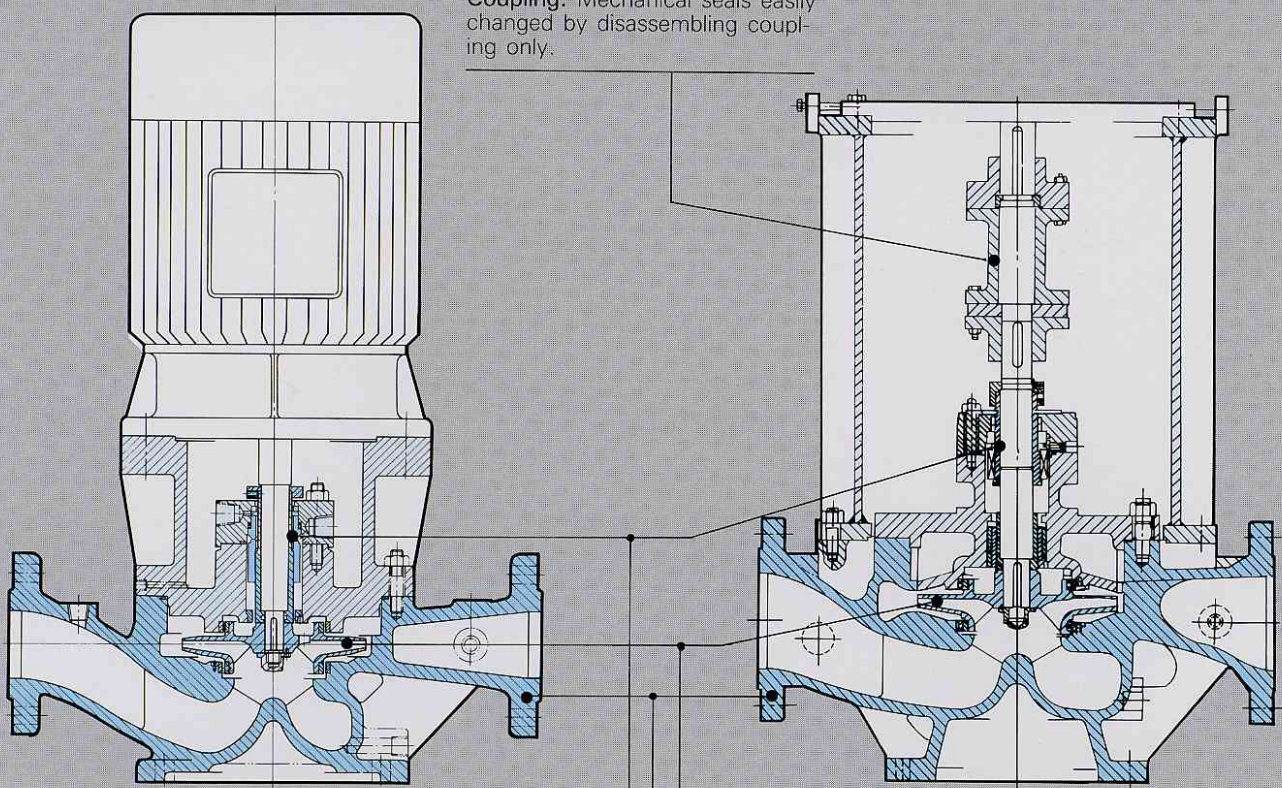
(\*2) Suction and discharge nozzle sizes are duplicated in some previous designations. Please note that the design remains unchanged from the previous model designations. To give an example, 50 LPWM 20G and 50x50 LPWM 20G are the same pumps.

(\*3) Close coupled designs are available for electric motor driven pumps only and driver type need not be specified.

## Construction

### CLOSE COUPLED DESIGN

### SPACER COUPLED DESIGN



**Coupling:** Mechanical seals easily changed by disassembling coupling only.

**Shaft Sealing:** Mechanical seals are available from any mechanical seal maker.

**Casing:** The volute type casing is designed to maintain high efficiency over long periods of wear.

**Impeller:** Enclosed impellers are designed for maximum efficiency and minimum required NPSH over a wide range of capacities. Balance holes minimize axial thrust.

Water cooled stuffing boxes are available as option.

## Metallurgy

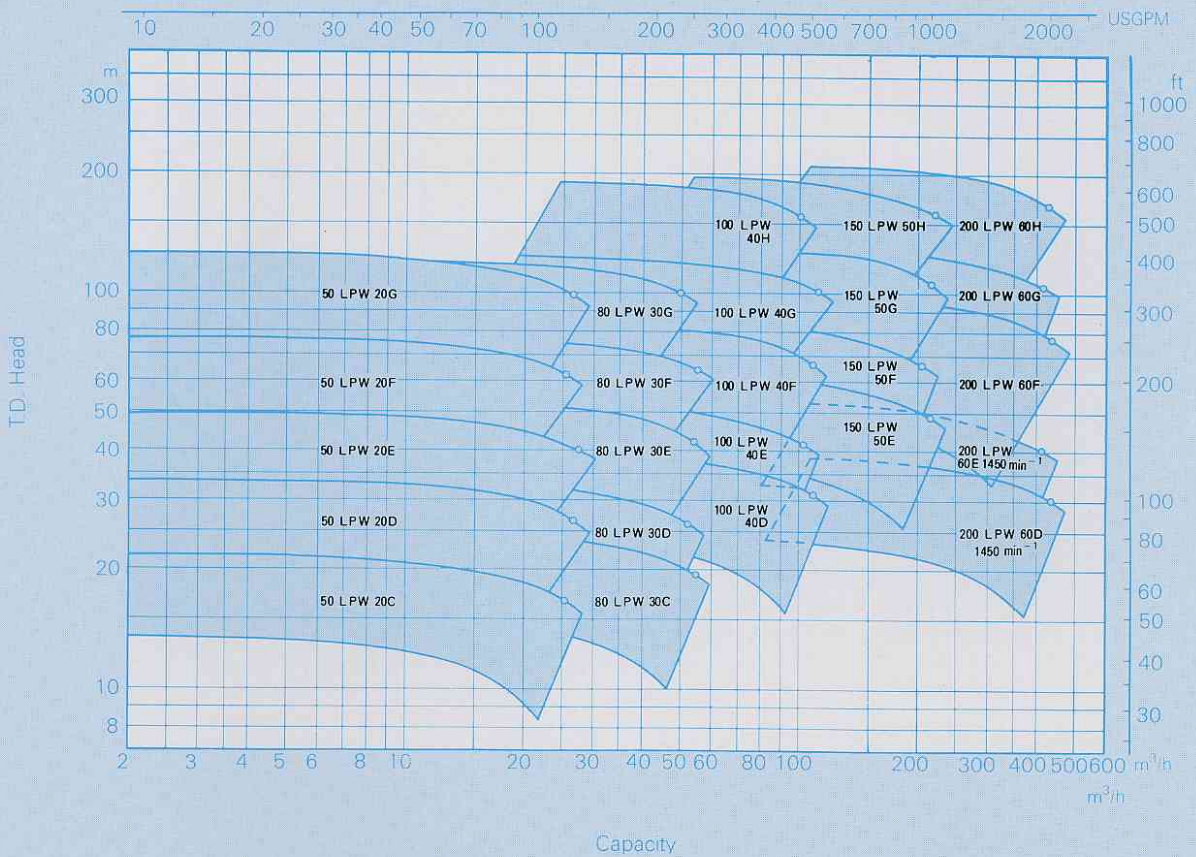
Name of Parts	Materials JIS/ASTM-AISI				
	C. Steel	C. Steel	12% Cr. Steel	304 S. Steel	316 S. Steel
Casing	SCPH2/A216WCB	SCPL1/A352LCB	SCS1/A743CA15	SCS13A/A743CF8	SCS14A/A743CF8M
Impeller	FC200/A48, CI.30	SCS13A/A351CF8	SCS1/A743CA15	SCS13A/A743CF8	SCS14A/A743CF8M
Impeller Wear Ring	SUS420J2/AISI 420	SUS304/AISI 304	SUS420J2/AISI 420	SUS304/AISI 304	SUS316/AISI 316
Shaft	S35C/AISI 1035	SNC815/A322	SUS420J1/AISI 420	SUS304/AISI 304	SUS316/AISI 316
Case Wear Ring	FCD400/A536	SUS304/AISI 304	SUS420J1/AISI 420	SUS304/AISI 304	SUS316/AISI 316
Sleeve for Packing	SUS420J2/AISI 420	SUS304/AISI 304	SUS420J2/AISI 420	SUS304/AISI 304	SUS316/AISI 316
Sleeve for Mechanical Seal	SUS420J2/AISI 420	SUS304/AISI 304	SUS304/AISI 304 SUS420J2/AISI 420	SUS304/AISI 304	SUS316/AISI 316

Notes: Supply of following materials on request: 304L S.Steel, 329J1 S.Steel, Hastelloy, 20 Alloy, Monel.  
Standard Materials Optional Materials

# Performance Ranges

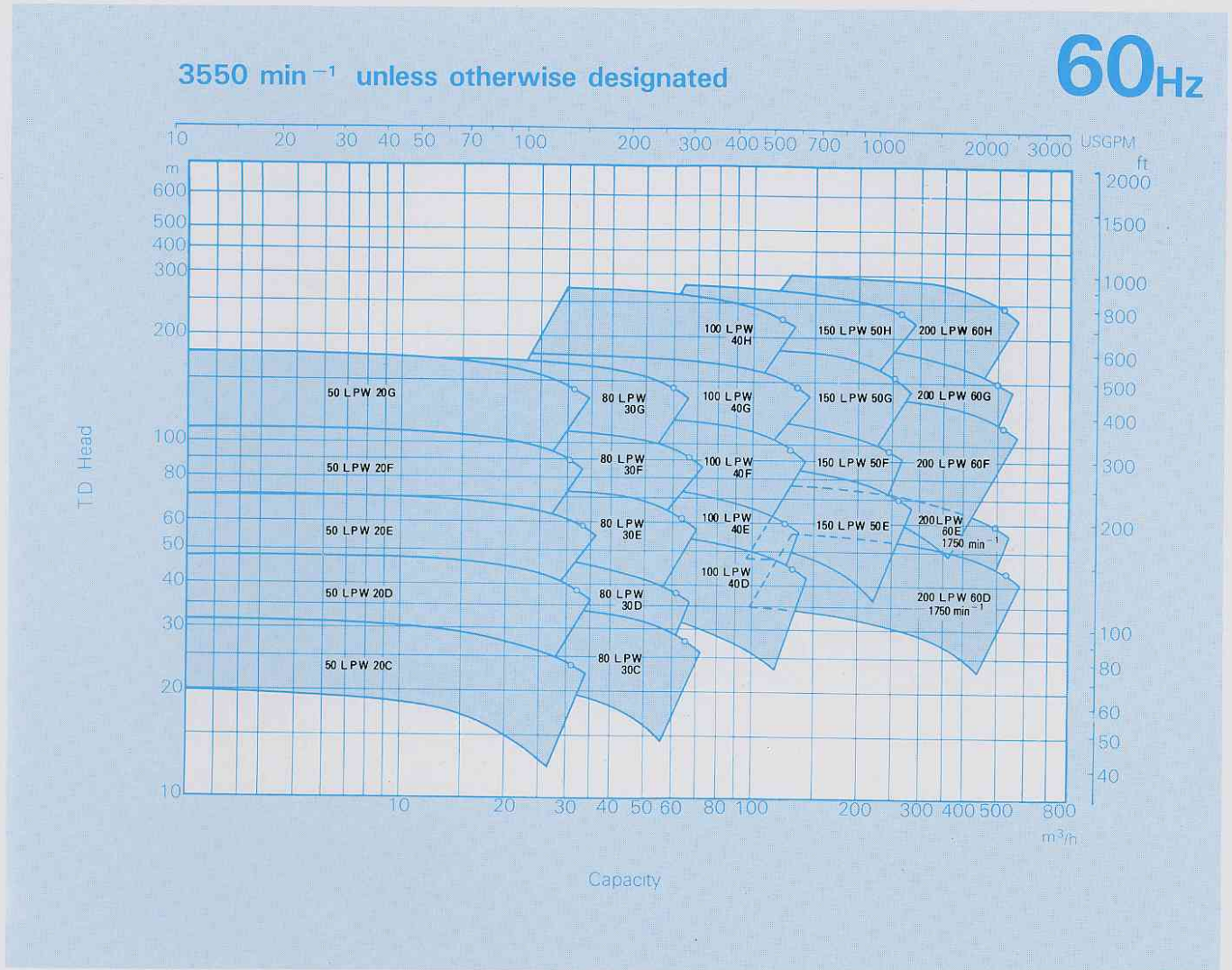
2950 min<sup>-1</sup> unless otherwise designated

50Hz



This selection chart is prepared for preliminary selection. Refer to individual performance curves for final selection.  
 "O" denotes B.E.P. of the performance with an impeller of maximum diameter.

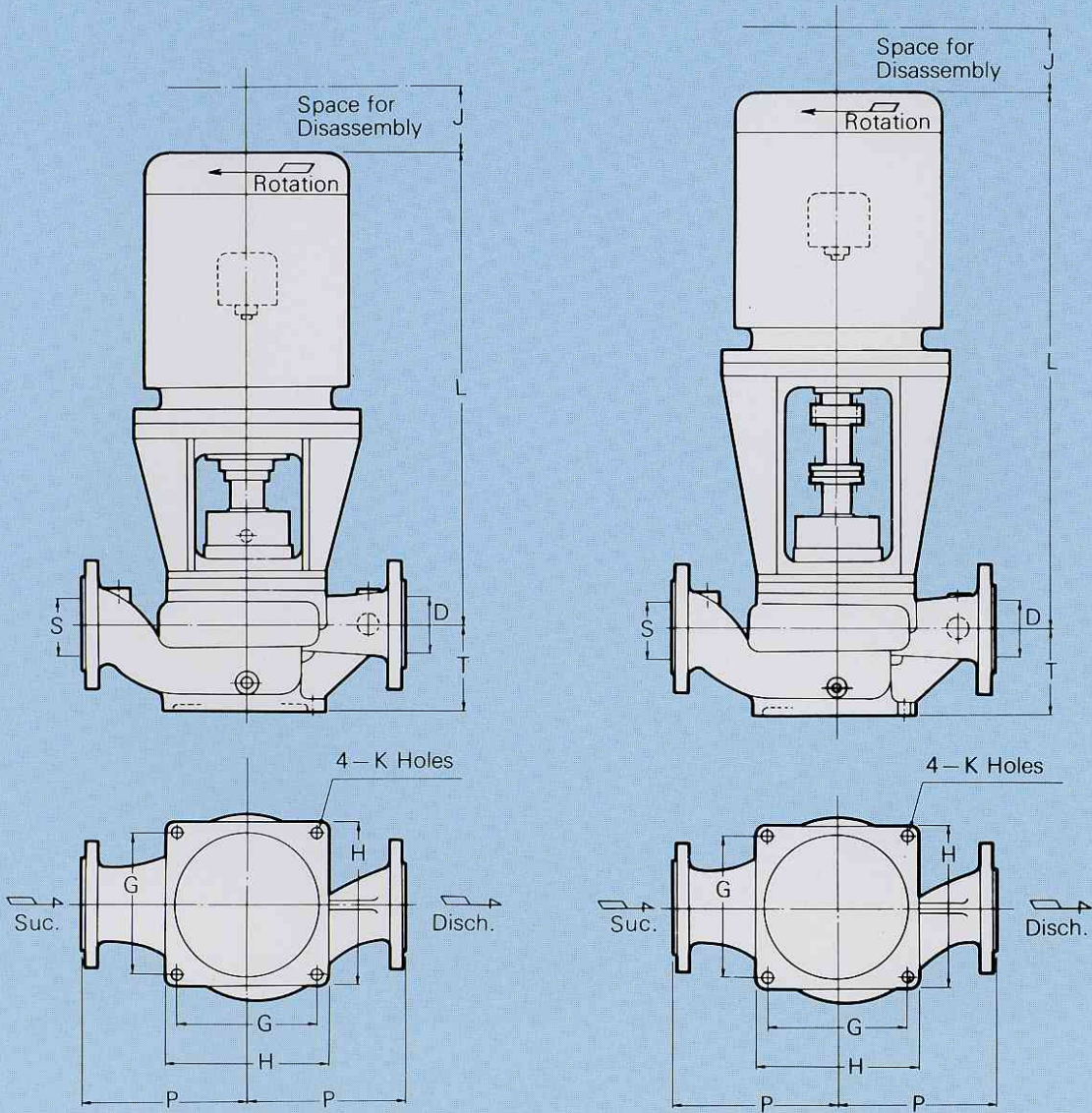
# Performance Ranges



This selection chart is prepared for preliminary selection. Refer to individual performance curves for final selection.  
 "O" denotes B.E.P. of the performance with an impeller of maximum diameter.

CLOSE COUPLED DESIGN

SPACER COUPLED DESIGN



## Dimensions

### CLOSE COUPLED DESIGN

Pump Size	S	D	T	P	G	H	K	Motor kW	L	J	Weight (mass) kg
50-20C	50	50	125	212	200	260	22	3.7	670	290	190
50-20D	50	50	125	212	200	260	22	5.5	760	290	220
50-20E	50	50	125	265	200	260	22	11	860	290	275
50-20F	50	50	125	265	200	260	22	18.5	960	320	405
50-20G	50	50	125	355	200	260	22	30	1100	320	580
80-30C	80	80	160	250	250	310	22	7.5	780	280	215
80-30D	80	80	160	250	250	310	22	11	860	280	275
80-30E	80	80	160	300	250	310	22	18.5	940	280	410
80-30F	80	80	160	300	250	310	22	30	1100	320	485
80-30G	80	80	160	400	250	310	22	30	1100	320	650
100-40D	100	100	224	250	250	310	22	11	880	320	310
100-40E	100	100	224	300	250	310	22	30	1100	320	520
100-40F	100	100	224	300	250	310	22	55	1210	320	825
100-40G	100	100	224	400	250	310	22	90	1440	400	1205
100-40H	100	100	224	400	250	310	22	90	1520	470	1375
150-50E	150	150	250	355	250	310	22	55	1270	400	870
150-50F	150	150	250	355	250	310	22	90	1440	400	1195
150-50G	150	150	250	400	250	310	22	110	1690	400	1760
150-50H	150	150	250	400	250	310	22	110	1770	470	1930
200-60D	200	200	300	530	280	340	22	75	1550	400	1705
200-60E	200	200	300	530	280	340	22	110	1630	400	2180
200-60F	200	200	300	375	280	340	22	110	1690	400	1810
200-60G	200	200	300	450	280	340	22	110	1770	470	1835
200-60H	200	200	300	450	250	340	22	110	1770	470	1990

### SPACER COUPLED DESIGN

Pump Size	S	D	T	P	G	H	K	Motor kW	L	J	Weight (mass) kg
50-20C	50	50	125	212	200	260	22	3.7	1055	200	230
50-20D	50	50	125	212	200	260	22	5.5	1304	200	260
50-20E	50	50	125	265	200	260	22	11	1348	200	330
50-20F	50	50	125	265	200	260	22	18.5	1458	200	490
50-20G	50	50	125	355	200	260	22	30	1740	200	700
80-30C	80	80	160	250	250	310	22	7.5	1304	250	260
80-30D	80	80	160	250	250	310	22	11	1348	250	330
80-30E	80	80	160	300	250	310	22	18.5	1459	250	490
80-30F	80	80	160	300	250	310	22	30	1742	250	580
80-30G	80	80	160	400	250	310	22	30	1740	250	780
100-40D	100	100	224	250	250	310	22	11	1463	300	370
100-40E	100	100	224	300	250	310	22	30	1742	300	620
100-40F	100	100	224	300	250	310	22	55	2035	300	990
100-40G	100	100	224	400	250	310	22	90	2099	300	1440
100-40H	100	100	224	400	250	310	22	90	2118	300	1650
150-50E	150	150	250	355	250	310	22	55	2047	300	1040
150-50F	150	150	250	355	250	310	22	90	2134	300	1430
150-50G	150	150	250	400	250	310	22	110	2349	300	2100
150-50H	150	150	250	400	250	310	22	110	2460	300	2300
200-60D	200	200	300	530	280	340	22	75	1905	400	2000
200-60E	200	200	300	530	280	340	22	110	2290	400	2600
200-60F	200	200	300	375	280	340	22	110	2410	400	2100
200-60G	200	200	300	450	280	340	22	110	2465	400	2200
200-60H	200	200	300	450	250	340	22	110	2465	400	2300

Note: Dimensions are in mm and for guidance only.

Certified drawings will be provided in all cases of actual construction. Motor dimensions are for a given IEC frame. The listed weights are approximate and include the weight of the corresponding motor.



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