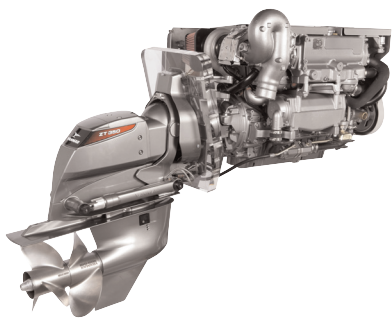


Yanmar type 4BY2-180Z



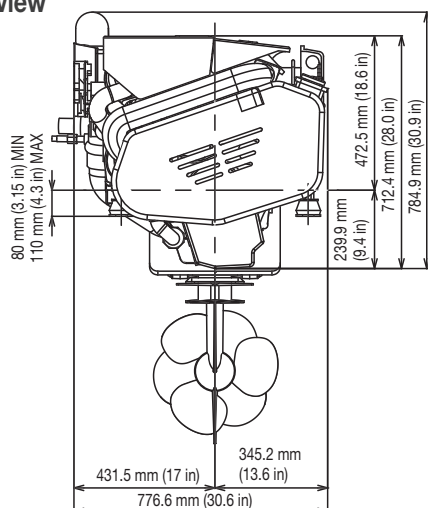
| | |
|---|---|
| Configuration | In line, 4-stroke cycle, water cooled diesel engine |
| Maximum output at crankshaft * | 132 kW (180 mhp) / 4000 rpm |
| Continuous rating output at crankshaft | 102 kW (137 mhp) 3600 rpm |
| Displacement | 1.995 L (122 cu in) |
| Bore x stroke | 84 mm x 90 mm (3.31 in x 3.54 in) |
| Cylinders | 4, Common Rail with vertical injectors |
| Combustion system | Direct injection |
| Aspiration | Wastegated, turbocharged with intercooler |
| Starting system | Electric starting 12 V - 2 kW |
| Alternator | 12 V - 150 A |
| Cooling system | Fresh water cooling with heat exchanger, and sea water cooled charge air cooler |
| Lubrication system | Totally enclosed, forced lubricating system with pump |
| Can Bus | According to NMEA 2000 protocol |
| Direction of rotation (crankshaft) | Counter clockwise viewed from flywheel side |
| Dry weight without sterndrive | 258 kg (569 lbs) |
| Environmental | EU RCD, US EPA Tier 2, BSO II & EMC |
| Engine mounting | Rubber type antivibration mounts |

NOTE: Fuel condition: Density at 15°C = 0.84 g/cm³; 1kW = 1.3596 mhp = 1.3410 HP

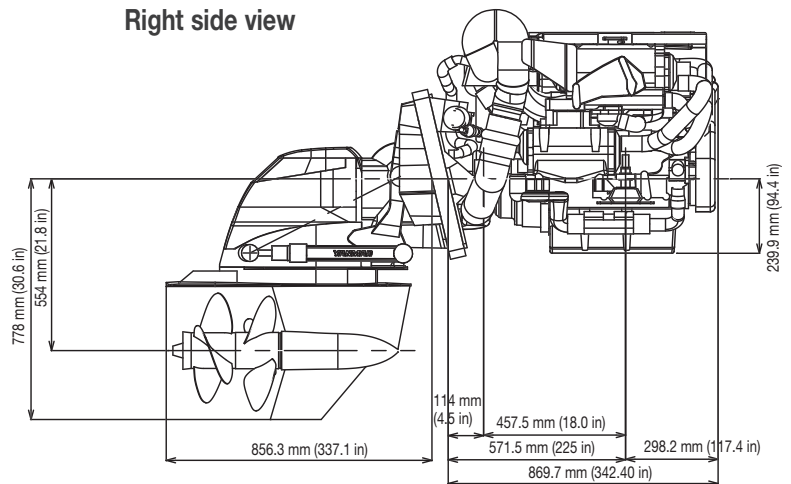
* Fuel temperature 40°C at the inlet of the fuel injection pump (ISO 8665 : 2006)

Dimensions (For detailed line-drawings, please refer to our web-site: www.yanmarmarine.com or contact your supplier)

Front view

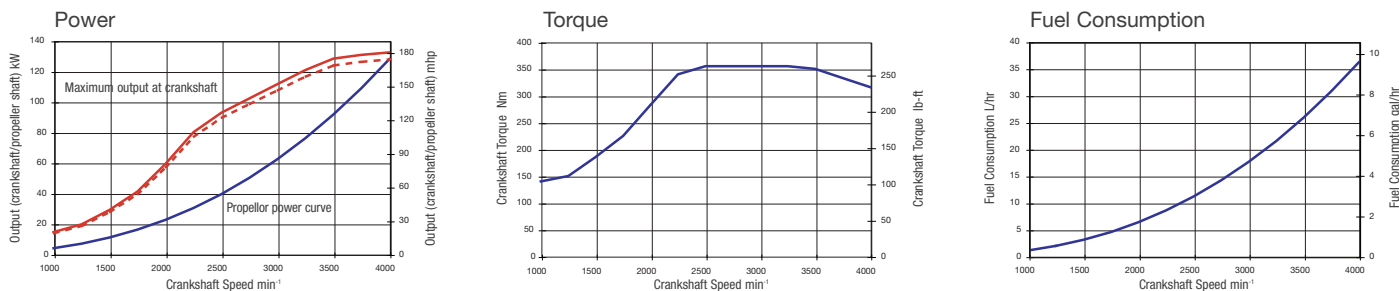


Right side view



4BY2-180Z with Yanmar Sterndrive ZT350

Performance Curves (Output is according ISO 8665 - Output includes +/- 3% tolerance)



Yanmar sterndrive set Engine

| | | | | |
|---|---|-----------|-----------|-----------|
| Model | Yanmar Sterndrive ZT350 | | | |
| Type | ZT350 | | | |
| Dry weight with propellers | 112 kg (247 lbs) | | | |
| Reduction ratio (fwd/asn) | 1.65/1.65 | 1.78/1.78 | 1.97/1.97 | 2.18/2.18 |
| Propeller speed (fwd/asn) | 2424/2424 | 2247/2247 | 2030/2030 | 1835/1835 |
| Direction of rotation (propeller shaft - fwd) | Clockwise & counter clockwise viewed from flywheel side | | | |
| Dry weight engine with sterndrive | 370 kg (816 lbs) | | | |

1, Inner and outer transom surface must be parallel within 3mm in area covered by transom plates and remain within transom thickness limits.

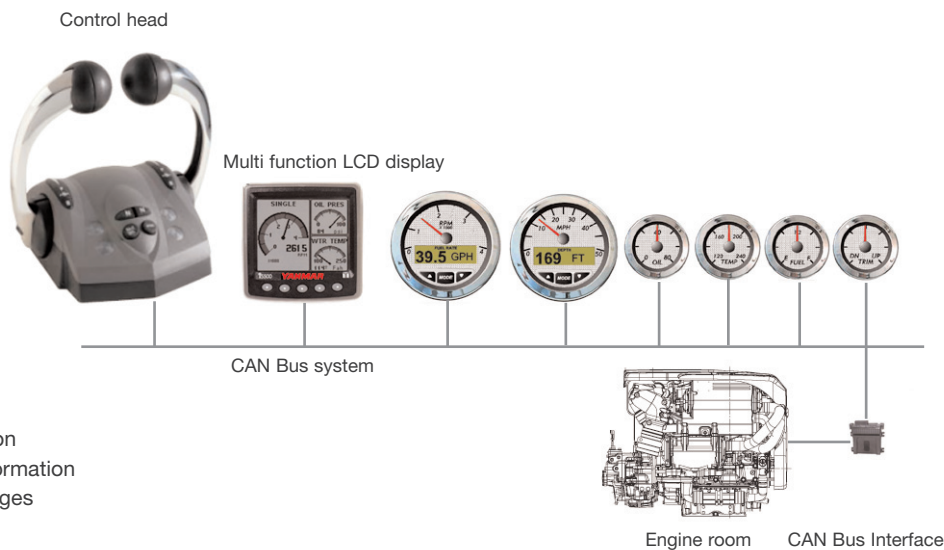
2, Area covered by gimbal housing assembly must be flat to within 1.6mm.

3, Area covered by inner transom plate must be flat to within 3.2mm

4, Transom angle: 13° to 16°

5, Also available with: BravoX-1 and BravoX-2. Contact your local supplier for available configurations

Instrument Panels



Multi function LCD display:

- engine information
- maintenance information
- diagnosis messages

Engine Accessories

Standard Engine Package System

- Alternator 12V - 150A single pole
- Protection cover for engine transmission
- High riser mixing elbow
- Flexible Mounts
- Glow plug controller and related parts

Optional Engine Package System

- Exhaust side dipstick
- Electrical Gearshift

Electronic Control System

Standard Electronic Control

- Electronic Control Head
- LCD display

Optional Electronic Control

- Various engine Monitoring gauges
- Various engine Control heads