

# Technical sheet

## Generating set QLS13T

### Engine characteristics

|                                      |                              |
|--------------------------------------|------------------------------|
| Engine base                          | Kubota V1505BG               |
| Number of cylinders                  | 4 in line                    |
| Displacement (cm³)                   | 1498                         |
| Bore & Stroke (mm)                   | 78 x 78.4                    |
| Combustion system                    | Indirect (E-TVCS)            |
| Rated rpm (rpm)                      | 1500                         |
| Max power at rated rpm (kW/hp)       | 11.1 / 15.1                  |
| Intake                               | Natural                      |
| Compression ratio                    | 23:1                         |
| Injection order                      | 1-3-4-2                      |
| Max pressure difference between cyl. | 10 %                         |
| Rotation                             | Counter clockwise (flywheel) |

### Injection

|                                 |                             |
|---------------------------------|-----------------------------|
| Injection pump                  | In line, Bosch MD mini type |
| Fuel feed pump                  | Spherical type              |
| Injection pressure (MPa)        | 13.7                        |
| Governor                        | Mechanical                  |
| Injection Timing before TDC (°) | 17                          |

### Lubrication

|                                        |                       |
|----------------------------------------|-----------------------|
| Oil type                               | API-CD mini 15W40     |
| Capacity (l)                           | 5                     |
| Pressure at rated rpm (bar)            | 2 to 4                |
| Lubrication system                     | Forced                |
| Oil pump type                          | Trochoid              |
| Relief valves - Opening pressure (bar) | 9.8 ±1.5              |
| Oil filter type                        | Full flow - cartridge |

### Cooling system

|                                   |                           |
|-----------------------------------|---------------------------|
| Seawater pump                     | Bronze, Neoprene rotor    |
| Seawater pump flow (l/min)        | 12                        |
| Fresh water pump type             | Coaxial alternator driven |
| Fresh water capacity (l)          | 5                         |
| Exhaust manifold                  | Fresh water cooled        |
| Max allowable back pressure (bar) | 0.127                     |
| Max exhaust gas temperature (°C)  | 550                       |

### Valve train

|                                     |                |
|-------------------------------------|----------------|
| Cold - Valve clearance intake (mm)  | 0.15           |
| Cold - Valve clearance exhaust (mm) | 0.15           |
| Valve retraction (mm)               | -0.05 to +0.15 |

### Piston rings

|                         |              |
|-------------------------|--------------|
| Firing piston ring (mm) | 0.15 to 0.45 |
| Compression Ring (mm)   | 0.30 to 0.45 |
| Oil ring (mm)           | 0.25 to 0.45 |

### Cylinder head

|                       |        |
|-----------------------|--------|
| Surface flatness (mm) | < 0.05 |
|-----------------------|--------|

### Installation

|                                    |                                                        |
|------------------------------------|--------------------------------------------------------|
| Exhaust connexion (mm-in)          | 50 - 2                                                 |
| Fuel connexion (mm-in)             | 8 - 0.31                                               |
| Fuel pump - Max suction height (m) | 0.5 (standard pump)<br>1.8 (with add. electrical pump) |
| Sea Water connexion (mm-in)        | 25                                                     |
| Engine Operating Angle             | 15° continuous (30° maxi)                              |

### Air requirements

|                                                |    |
|------------------------------------------------|----|
| Combustion air at 25°C (m³/h)                  | 60 |
| Flow for the evacuation of radiant heat (m³/h) | 93 |

### Engine Electrical System

|                          |         |
|--------------------------|---------|
| Engine alternator (V-A)  | 12 - 40 |
| Battery recommended (Ah) | 75      |
| Starter motor (V-kW)     | 12 - 1  |

### Generator characteristics

|                                 |             |
|---------------------------------|-------------|
| Brand                           | Leroy Somer |
| Model                           | LSAM 40S3   |
| Insulation class                | H           |
| Phase                           | 3           |
| Winding pitch                   | 2/3 (wdg 6) |
| Protection                      | IP 23       |
| Cos Ø                           | 0.8         |
| Rated voltage (V)               | 400         |
| Frequency (Hz)                  | 50          |
| Max power (kW)                  | 10.7        |
| Continuous power (kW)           | 9.5         |
| Maximum current per phase (A)   | 19.3        |
| Continuous current per phase(A) | 17.1        |
| Air flow (m³/h)                 | 3.6         |
| Excitation system               | AREP        |
| AVR typ                         | R438        |
| Voltage regulation              | ± 0.5%      |
| Weight of the generator (kg)    | 96          |

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