



# D-SERIES

SPECIFICALLY DESIGNED FOR OPERATION AT PEAK EFFICIENCY, HOWDEN D-SERIES FANS DELIVER **OPTIMUM AERODYNAMIC PERFORMANCE** WITH EXCEPTIONALLY **LOW POWER CONSUMPTION**.

CRITICAL APPLICATIONS SUCH AS AIR-COOLED CONDENSERS AND FIELD ERECTED COOLING TOWERS DEMAND THE BEST POSSIBLE COOLING PERFORMANCE. HOWDEN D-SERIES FANS DELIVER HIGH OPERATING EFFICIENCIES WHILE OFFERING LOW POWER CONSUMPTION.

**The efficiency benefits of the D-Series go beyond the inherent high efficiency of the fan itself.** Taking a systems approach to design, the D-Series optimises the interaction between the fan and the application, to raise the performance of the whole cooling operation and deliver significant reductions in running costs.

#### HOWDEN D-SERIES FANS ARE AVAILABLE IN THREE DIFFERENT BLADE PROFILES

- **DNF:** Classic fan featuring Howden Aerotip technology.
- **DLF:** Low-Noise
- **DVF:** Extra Low-Noise.

#### STANDARD FEATURES

- D-Series fans have a straight aerofoil FRP blade design for clockwise rotation in the horizontal plane.
- With an operating temperature range of  $-20^{\circ}\text{C}$  to  $+65^{\circ}\text{C}$  ( $-4^{\circ}\text{F}$  to  $+149^{\circ}\text{F}$ ), D-Series fans are suitable for a wide spectrum of operating conditions. With modifications, the range can be extended to  $120^{\circ}\text{C}$ .
- D-Series fans are available in a range of diameters from 7,925 mm to 10,973 (26 ft to 36 ft).
- The fan hub is manufactured from steel and coated with polyurethane, with aluminum blade supports and stainless steel U-bolts, nuts and washers.

#### OPTIONAL FEATURES

- Leading edge protection for use in wet cooling applications.
- Cast iron, polyurethane coated coupling flanges to mate drive shafts featuring either a cylindrical bore or a tapered bushing connection.
- Materials and coatings can be upgraded for sea water cooling tower applications.

#### ADVANTAGES

- D-Series fans perform at high efficiency, resulting in reduced power consumption.
- Howden Aerotip technology, used in the DNF blade, enhances the aerodynamic performance of the fan and significantly reduces the pressure pulse transmitted to the fan ring.
- The FRP blade material offers superior damping of mechanical vibrations and good chemical resistance.
- The D-Series blades have an integral shaft. This eliminates concentrations of stress at mechanical joints.
- Howden's reliable fan selection data minimises the need to adjust the blade pitch during commissioning.
- The D-Series is designed for simple field assembly and comes with clear technical documentation.

