Liebherr Floating Cranes

**CBG 360**

**Maximum lifting capacity**
- 60 t (Hook Operation)
- 45 t (Grab Operation)

**Maximum outreach**
- 36 m

**Ship size**
- New Panamax
- Capesize
General Arrangement

Advantages of Liebherr CBG 360

- Classification according to FEM A8/Q3/U7
- Speed with empty hook (≤15 t) 130 m/min
- Compliance with CE regulations
- Larger and additionally strengthened pulleys for increased service life of the ropes and reduction in abrasion
- Operational optimization for rope capacity
- Reduction in overturning moment thanks to the installation of a counterweight
- Increased outreach possible through an excentre platform
## Technical Data

### Design Conditions

<table>
<thead>
<tr>
<th>Maximum admissible</th>
<th>50 Hz</th>
<th>60 Hz</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heel/Trim*</td>
<td>5°/2° or 2°/5°</td>
<td></td>
</tr>
<tr>
<td>Ambient working temperature</td>
<td>-20°C to +45°C</td>
<td></td>
</tr>
<tr>
<td>Humidity maximum</td>
<td>93%</td>
<td></td>
</tr>
</tbody>
</table>

| Working condition                   | 20 m/s (0.245 kN/m²) | max. 63 m/s |

<table>
<thead>
<tr>
<th>Max. wind speed</th>
<th></th>
<th></th>
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</thead>
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<td>Working condition</td>
<td>20 m/s (0.245 kN/m²)</td>
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</tbody>
</table>

### Speeds

<table>
<thead>
<tr>
<th>Speeds</th>
<th>50 Hz</th>
<th>60 Hz</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hoisting/lowering</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Max. hoisting/lowering up to 15 t SWL</td>
<td>108 m/min</td>
<td>130 m/min</td>
</tr>
<tr>
<td>Max. hoisting/lowering with 30 t SWL</td>
<td>59 m/min</td>
<td>71 m/min</td>
</tr>
<tr>
<td>Max. hoisting/lowering with 36 t SWL</td>
<td>50 m/min</td>
<td>61 m/min</td>
</tr>
<tr>
<td>Max. hoisting/lowering with 45 t SWL</td>
<td>39 m/min</td>
<td>47 m/min</td>
</tr>
</tbody>
</table>

| Slewing                         |       |       |
| Speed                           | up to 1.05 rpm | up to 1.26 rpm |
| Range                           | 360° unlimited | 360° unlimited |

| Luffing                          |       |       |
| Max. Luffing time (jib length 36 m) | 70 s   | 59 s   |

### Electric Motor

| Type of motor                     | three phase squirrel cage |       |
| Class of protection               | IP 55                     |       |
| Class of insulation               | F                        |       |
| Starting                          | star delta                |       |

| Electric Motor                    | 50 Hz            | 60 Hz            |
| Nominal output                    | 2 x 295 kW       | 2 x 345 kW       |
| Nominal current                   | 2 x 525 A        | 2 x 550 A        |
| Starting current                  | 1152 A           | 1118 A           |
| Main power supply                 | 400 V, 3 ph      | 440 V, 3 ph      |
| Auxiliary power supply            | 230 V, 3 ph      | 230 V, 3 ph      |

### Crane Classification

**The minimum group classification according to FEM 1.001 (latest edition) of the CBG crane relates to full load cycles in grab operation and is as follows:**

<table>
<thead>
<tr>
<th>The crane as a whole</th>
<th>≤ 36 t</th>
<th>≤ 45 t</th>
<th>&gt; 45 t</th>
</tr>
</thead>
</table>
Optional features

**Ex-centre arm:**
For the extension of the working radius is the ex-centre arm from 8 m up to 12 m available.

**SmartGrip®:**
The SmartGrip grabber technology is capable of optimising the filling rate of the grabber in a self-learning manner. In this way, SmartGrip learns after just five lifting cycles how to optimise capacity utilisation of the grabber even for less experienced crane operators.

**LiDAT smartApp:**
With LiDAT smartApp, it’s possible to analyse your crane (operating and performance) data and get answers from it almost immediately. That leads to direct decisions. The ability to work faster gives operators a competitive edge they didn’t have before. Big data analytics helps to detect bottle necks and to identify new opportunities.

**LiCAS:**
The Collision Alert System (LiCAS), developed inhouse by Liebherr, prevents the jibs coming into contact with each as well as colliding with ship components. Establishing other areas to avoid on land and onboard is also possible. Risk of inclined lifting and overload are also eliminated by the system.

**LiSIM®:**
LiSIM for CBG series increases port safety and productivity by providing a cost-effective and highly efficient crane operator training solution. The development of this sophisticated training tool was prompted by Liebherr’s extensive experience in crane operator training. Based on the original Litronic® crane control system, LiSIM® is the only realistic virtual solution available on the market for learning to handle the precise and innovative control of Liebherr ship cranes.
CBG 360
With Counterweight*

Load Diagram
- Grab Operation
- Hook Operation

SWL (t)
70
60
50
40
30
20
10
0
0 5 10 15 20 25 30 35
Radius (m)

Without Counterweight*

Load Diagram
- Grab Operation
- Hook Operation

SWL (t)
70
60
50
40
30
20
10
0
0 5 10 15 20 25 30 35
Radius (m)

CBG 360
With Counterweight*

Load Diagram


Without Counterweight*

Load Diagram

CBG 360

With Counterweight*


Without Counterweight*

The Liebherr Group of Companies

Wide Product Range
The Liebherr Group is one of the largest construction equipment manufacturers in the world. Liebherr’s high-value products and services enjoy a high reputation in many other fields. The wide range includes domestic appliances, aerospace and transportation systems, machine tools and maritime cranes.

Exceptional Customer Benefit
Every product line provides a complete range of models in many different versions. With both their technical excellence and acknowledged quality, Liebherr products offer a maximum of customer benefits in practical application.

State-of-the-art Technology
To provide consistent, top quality products, Liebherr attaches great importance to each product area, its components and core technologies. Important modules and components are developed and manufactured in-house, for instance the entire drive and control technology for construction equipment.

Worldwide and Independent
Hans Liebherr founded the Liebherr family company in 1949. Since that time, the enterprise has steadily grown to a group of more than 130 companies with over 41,000 employees located on all continents. The corporate headquarters of the Group is Liebherr-International AG in Bulle, Switzerland. The Liebherr family is the sole owner of the company.

www.liebherr.com