**Design Requirements**

|  |  |  |
| --- | --- | --- |
| Operator’s eye level above  berth | Shall be comfortable for smooth operation and full vision  inside deck. | |
| Wheel load maximum | 35 tones including dynamic effect (operating/storm) | |
| Max. Corner Load | 275 tones including dynamic effect (operating/storm) | |
| Stability Factor (min.) | 1.3 (under operating condition)  1.1 (under non-operating condition when free on wheels) | |
| Ambient Temperature for  design consideration | 45 deg C (for mechanical components)  50 deg C (for electrical system) | |
| Humidity | Varies from 23% to 100% | |
| Source of External Power supply (Incoming) | 415 V; 3phase; 50 Hz AC | |
| Short circuit level at  substation | 50 KA. | |
| Permissible Voltage and  Frequency variations For LT 415 V | Voltage Frequency  +10% & - 10% +1% steady and 2% transient | |
| Rail span | 10 M | |
| Portal Height | Min. 4.5 M (For easy passage of vehicle) | |
| Cable Length (m) | 300 M | |
| Wind load  Design wind velocity | The equipment shall be capable of performing all loading / unloading operations for wind up to 18 m / sec wind velocity.  The equipment structure shall be stable, free on wheels during wind pressures corresponding to basic wind velocity of up to 24 m/sec as per IS 875 Part III.  However, anchoring device and suitable anchor points on the equipment are to be provided, as stand-by for holding the equipment during storm condition and basic wind velocity up to 39 m/sec. | |
| **Drives** | **Type** | **Speeds** |
| Hoisting & lowering | AC- Sq. Cage Motor with VVVF drive controls. | Hook 20T= 20 m/min  Hook 50T= 10 m/min |
| Slew motion | AC- Sq. Cage Motor with VVVF drive controls. | 0-0.5 RPM |
| Boom luffing | Screw / Wire rope system | 0-20 m/min |
| Gantry travel | AC- Sq. Cage Motor with VVVF drive controls. | 0-30 /min |

**For Single Jib ELL crane:**

|  |  |
| --- | --- |
| Quantity | 1 No. |
| Materials to be handled | ELL crane suitable for handling machine parts, equipment’s for maintenance of vessels and related operations, general cargo supplies to the vessels. |
| Minimum working radius | 9 to 15m |
| Maximum Outreach | Not less than 35m |
| Lifting capacity between any range of 9 to 15m radius | 50T |
| Minimum lifting capacity @ 35m radius (maximum outreach) | 20T |
| Overall height restriction of ELL crane from CD in parking  position | 47.802m |
| Overall height restriction from CD when in operation | 47.802m |
| Height of lift at minimum  outreach of 9-15m radius | Not less than 35m |
| Height of lift at outreach of 25m | Not less than 25m |
| Height of lift @ maximum outreach of 35m | Not less than 14m |
| Height of lift below deck level | Not less that (-)15m |
| Rail span | 10m |
| Portal clearance | 4.5m |
| Rail size | CR 100 |
| Height of Crane | The maximum height of the cranes during parking position shall be limited to 47.22 m above Mean Sea Level / 47.802 above Port Chart Datum. |

\*The above specifications are the minimum requirements.

# **For Double Jib ELL crane:**

|  |  |
| --- | --- |
| Quantity | 1 No. |
| Materials to be handled | ELL crane suitable for handling machine parts and equipment’s for maintenance of vessels and related operations. |
| Minimum working radius | 9 to 17m |
| Maximum Outreach | Not less than 35m |
| Lifting capacity between any range of 9 to 17m radius | 50T |
| Minimum lifting capacity @ 35m radius (maximum outreach) | 20T |
| Overall height restriction of ELL crane from CD in parking position | 47.802m |
| Overall height restriction from  CD when in operation | 47.802m |
| Height of lift at minimum outreach of 9-17m radius | Not less than 22m |
| Height of lift @ maximum outreach of 35m | Not less than 22m |
| Height of lift below deck level | Not less that (-)15m |
| Rail span | 10m |
| Portal clearance | 4.5m |
| Rail size | CR 100 |
| Height of Crane | The maximum height of the cranes during parking position shall be limited to 47.22 m above Mean Sea Level / 47.802 above Port Chart Datum. |

\*The above specifications are the minimum requirements