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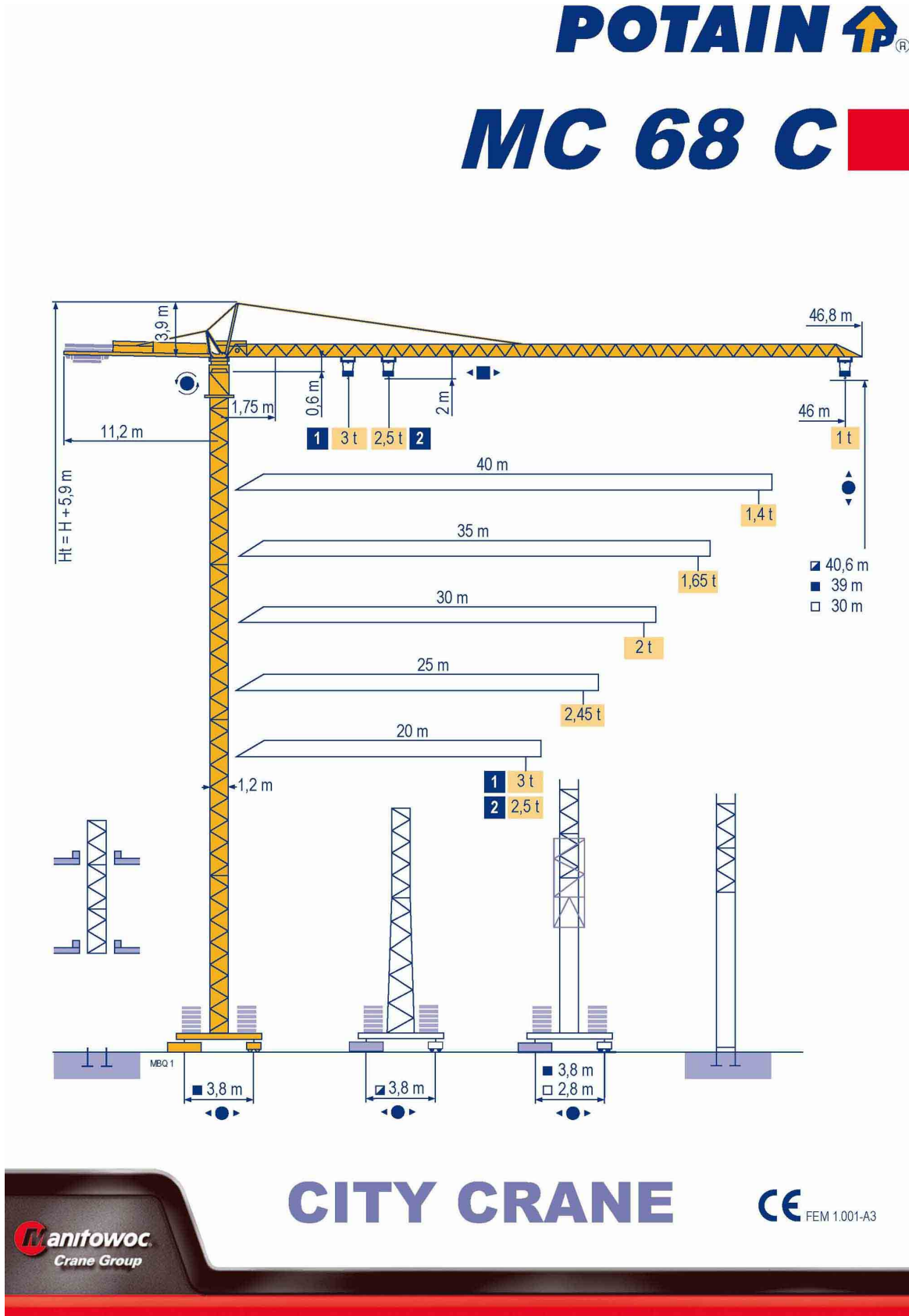
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## 03D – TECHNISCHE MERKMALE

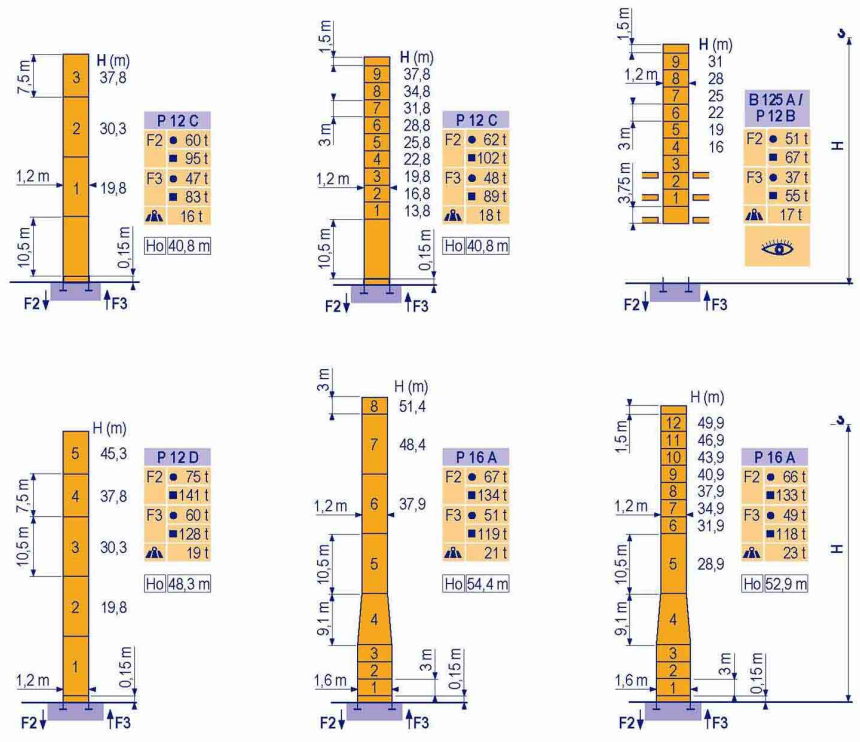
### 1. DATENBLATT



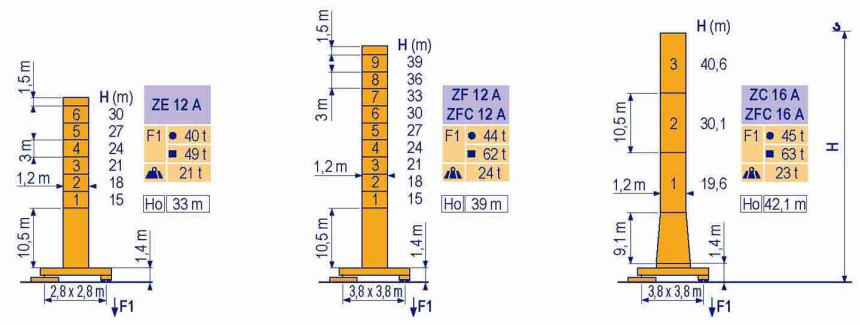


Mat / Réactions  $\square$  1,2 m  
 Maste / Eckdrücke  $\triangle$   
 Masts / Reactions 20 m  $\Rightarrow$  46 m  
 Mástil / Reacciones  
 Torre / Reazioni  
 Tramo / Reações

MSQ 1



$\square$  1,2 m  
 $\triangle$   
 20 m  $\Rightarrow$  46 m



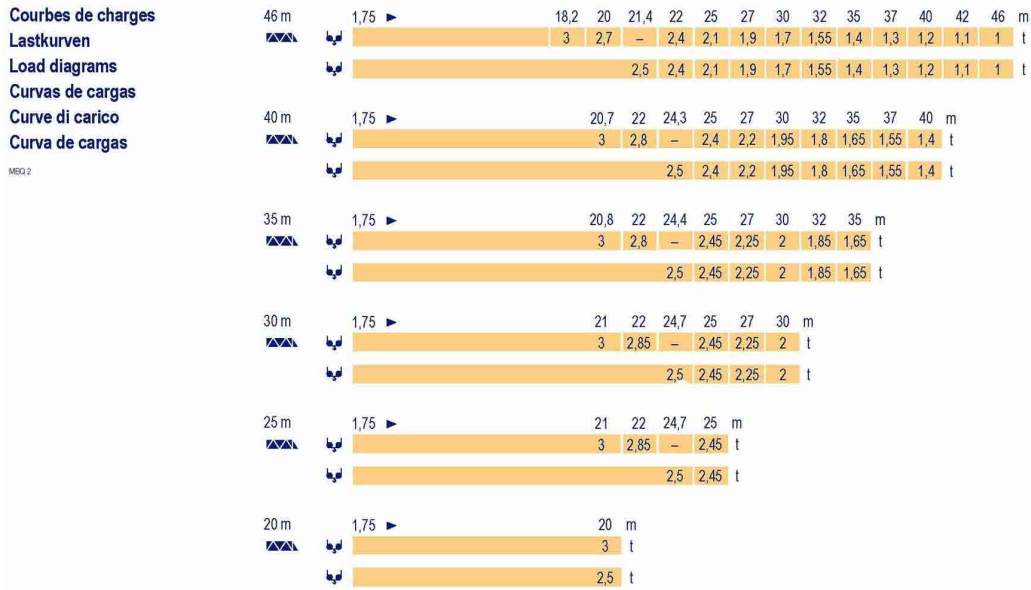
ZE - ZF - ZC - ZFC



CITY CRANE  
MC 68 C

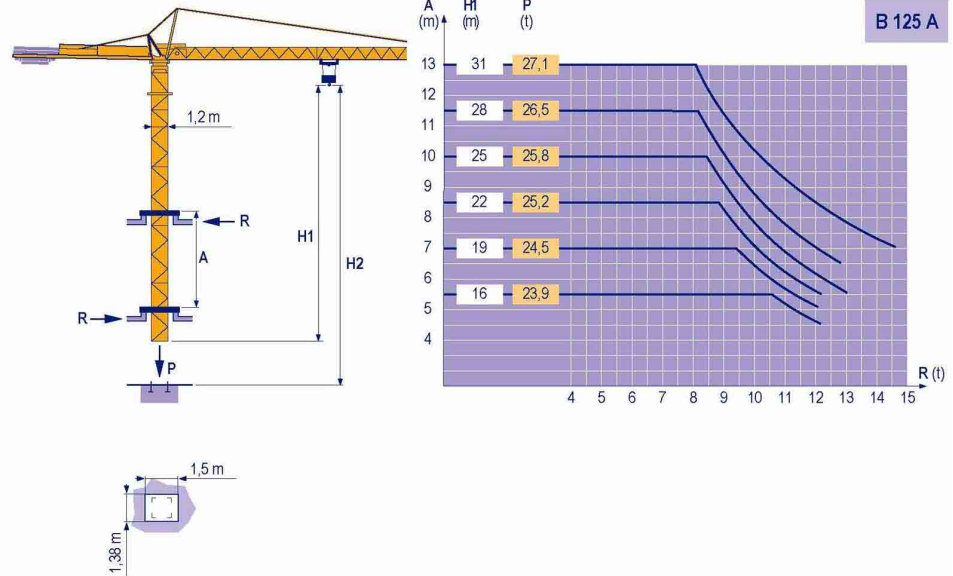


|    | F  | D   | GB  | E   | I  | P  |
|----|--|---|---|---|--|--|
|    | Réactions en service   | Reaktionskräfte in Betrieb  | Reactions in service  | Reacciones en servicio  | Reazioni in servizio   | Reações em serviço   |
|    | Réactions hors service   | Reaktionskräfte außer Betrieb   | Reactions out of service  | Reacciones fuera de servicio  | Reazioni fuori servizio  | Reações fora de serviço  |
|    | A vide sans lest (ni train de transport) avec flèche et hauteur maximum. | Ohne Last, Ballast (und Transportachse), mit Maximalausleger und Maximalhöhe. | Without load, ballast (or transport axes), with maximum jib and maximum height. | Sin carga, sin lastre, (ni tren de transporte), flecha y altura máxima. | A vuoto, senza zavorra (ne assali di trasporto) con braccio massimo e altezza massima. | Sem carga (nem trem de transporte)- sem lastro com lança e altura máximas. |
| Ho | H sans cabine  | H Ohne Fahrerhaus   | H without cab   | H sin cabina  | H senza cabina   | H sem cabine   |



**Télescopage sur dalles**  
**Kletterkrane im Gebäude**  
**Climbing crane**  
**Telescopage gruas trepadoras**  
**Gru in cavedio**  
**Telescopagem sobre lages**

ME9.1



**CITY CRANE**  
**MC 68 C**



|           | F                            | D                             | GB                        | E                             | I                            | P                            |
|-----------|------------------------------|-------------------------------|---------------------------|-------------------------------|------------------------------|------------------------------|
| <b>A</b>  | Distance entre cadres        | Abstand zwischen den Rahmen   | Distance between collars  | Distancia entra marcos        | Distanza fra i telai         | Distância entre quadros      |
| <b>H1</b> | Hauteur grue                 | Kranhöhe                      | Crane height              | Altura grúa                   | Altezza gru                  | Altura da grua               |
| <b>P</b>  | Poids de la grue(en service) | Krangelgewicht (in Betrieb)   | Crane weight (in service) | Peso de la grúa (en servicio) | Peso della gru (in servizio) | Peso da grua (em serviço)    |
| <b>R</b>  | Réaction horizontale         | Horizontalkräfte              | Horizontal reaction       | Reaccion horizontal           | Reazione orizzontale         | Reacção horizontal           |
|           | Voir télescopage sur dalles  | Siehe Kletterkrane im Gebäude | See climbing crane        | Veja grua trepadora           | Consultare gru in cavedio    | Ver telescopagem sobre lages |



Mécanismes
Antriebe
Mechanisms
Mecanismos
Meccanismi
Mecanismos

MBQ 3

Table with columns for mechanism type, speed (m/min), torque (t), and power (kW). Rows include 15 PC 13-5, 25 PC 13-7, 20 LVF 13, 15 PC 15, 25 PC 15, 3 D2 V5, RCV 40, ZE-ZF TVD 324, and ZC-ZFC RT 224.

Legend table with icons and labels for F (Levage), D (Heben), GB (Hoisting), E (Elevación), I (Sollevamento), P (Elevação), Distribution, Orientation, Translation, etc.



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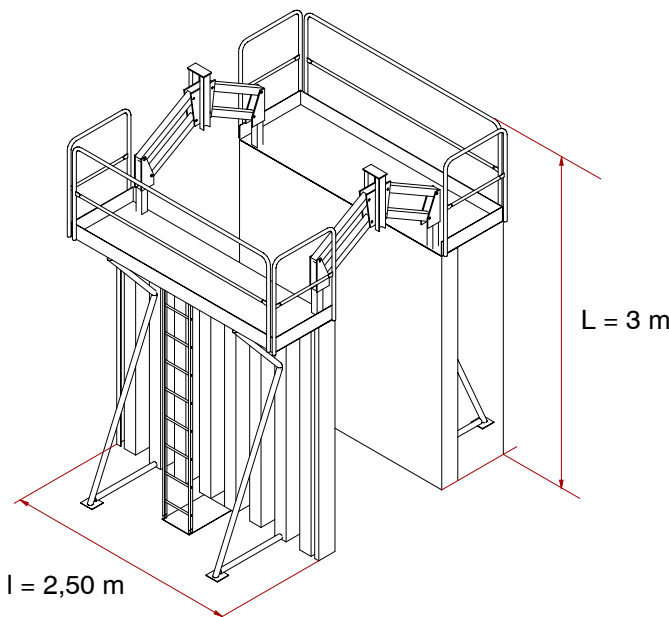


## 2. ZULÄSSIGE WINDGESCHWINDIGKEIT GEMÄSS DER OBERFLÄCHE EINER GEHOBENEN LAST

- Die zulässige Betriebswindgeschwindigkeit beträgt 72 km/h für eine Last, dessen Windangriffsfläche einen Quadratmeter pro Tonne Nutzlast (Standardangabe für die Berechnung des Krans) nicht überschreitet. Aus Gründen der Standfestigkeit, Kranfestigkeit und der Sicherheit beim Kranbetrieb ist es notwendig – in Übereinstimmung mit den gültigen Normen – , die zulässige Betriebswindgeschwindigkeit für die Handhabung von Lasten, dessen Verhältnis Oberfläche/Last 1 m<sup>2</sup>/t überschreitet, zu reduzieren.

### 2. 1. SCHÄTZUNG EINER LASTOBERFLÄCHE

- In einfachen Fällen, bei Last mit geschlossener oder mit winddurchlässiger Oberfläche, ist die Berechnung der Oberfläche **S (m<sup>2</sup>) = L x l** – Produkt der beiden größten dem Wind ausgesetzten Flächen (Bsp.: Schalwände, siehe unten). In schwierigen Fällen, BITTE BEI UNS RÜCKFRAGEN.



Beispiel: **S = 3 m x 2,50 m = 7,5 m<sup>2</sup>**

Siehe die Tabellen auf den nachfolgenden Seiten zur Bestimmung der im Betrieb zulässigen Windgeschwindigkeit.

### 2. 2. TABELLEN DER ZULÄSSIGEN WINDHÖCHSTGESCHWINDIGKEITEN

- Die Tabellen auf den folgenden Seiten geben die Windgeschwindigkeit an für:
  - einen Kran mit einer Laufkatze (SM/DM), die mit 2–strängiger (SM) oder 4–strängiger (DM) Scherung eingesetzt wird,
  - einen Kran mit nur 2–strängiger Ausrüstung (SM), der jedoch auf seine Tragfähigkeit bei 2–strängiger Scherung beschränkt ist.



**Wichtig ist nicht das tatsächliche Gewicht der Last, sondern die Kapazität des Krans bei einer gegebenen Ausladung, welche die maximale Windgeschwindigkeit ergibt.**



## 2. 2. 1. Beschreibung und Anwendung der Tabellen

Technische Daten – Beispiel :

- Krantyp: MD 120 A
- Auslegerlänge: 50 m
- Ausladung: 30 m
- Gewicht der Last: 3,2 t

Berechnung der Fläche:

- Fläche der Last:  $S = 3 \text{ m} \times 2,50 \text{ m} = 7,5 \text{ m}^2 \approx 8 \text{ m}^2$

Die zulässige Windhöchstgeschwindigkeit in Betrieb ist 48 km/h (siehe die grau getönten Teile der entsprechenden Tabelle). Sie entspricht dem Kreuzungspunkt der Spalten: Ausladung 30 m, Fläche 8 m<sup>2</sup>.

| Ausladungen            | 19  | 22   | 25   | 27   | 30   | 32   | 34 | 35 | 37   | 40   | 42   | 45   | 47   | 50  |
|------------------------|---|------|------|------|------|------|----|----|------|------|------|------|------|-----|
| Lastkurve (in t)       | 6   | 5,13 | 4,41 | 4,03 | 3,64 | 3,27 | 3  | 3  | 2,79 | 2,53 | 2,38 | 2,18 | 2,06 | 1,9 |
| S (in m <sup>2</sup> ) | <b>Zulässige Windhöchstgeschwindigkeit in Betrieb (in km/h)</b> |      |      |      |      |      |    |    |      |      |      |      |      |     |
| 1                      | 72  | 72   | 72   | 72   | 72   | 72   | 72 | 72 | 72   | 72   | 72   | 72   | 72   | 72  |
| 2                      | 72  | 72   | 72   | 72   | 72   | 72   | 72 | 72 | 72   | 72   | 72   | 72   | 72   | 70  |
| 3                      | 72  | 72   | 72   | 72   | 72   | 72   | 72 | 72 | 69   | 66   | 64   | 61   | 60   | 57  |
| 4                      | 72  | 72   | 72   | 72   | 68   | 65   | 62 | 62 | 60   | 57   | 56   | 53   | 52   | 50  |
| 5                      | 72  | 72   | 68   | 65   | 61   | 58   | 56 | 56 | 54   | 51   | 50   | 48   | 46   | 44  |
| 6                      | 72  | 67   | 62   | 59   | 55   | 53   | 51 | 51 | 49   | 47   | 45   | 43   | 42   | 41  |
| 7                      | 67  | 62   | 57   | 55   | 51   | 49   | 47 | 47 | 45   | 43   | 42   | 40   | 39   | 38  |
| 8                      | 62  | 58   | 53   | 51   | 48   | 46   | 44 | 44 | 43   | 40   | 39   | 38   | 37   | 35  |

**S = Fläche der gehobenen Last in m<sup>2</sup>**





## 2. 2. 2. Zulässige Windhöchstgeschwindigkeit für eine Lastoberfläche grösser als 1m<sup>2</sup>/t

### 2. 2. 2. 1. Ausleger 46 m – 3 t

| Ausladungen            | 18,2   | 20  | 22  | 25  | 27  | 30  | 32   | 35  | 37  | 40  | 42  | 46 |
|------------------------|--|-----|-----|-----|-----|-----|------|-----|-----|-----|-----|----|
| Lastkurve (in t)       | 3  | 2,7 | 2,4 | 2,1 | 1,9 | 1,7 | 1,55 | 1,4 | 1,3 | 1,2 | 1,1 | 1  |
| S (in m <sup>2</sup> ) | Zulässige Windhöchstgeschwindigkeit in Betrieb (in km/h) |     |     |     |     |     |      |     |     |     |     |    |
| 1                      | 72   | 72  | 72  | 72  | 72  | 72  | 72   | 72  | 72  | 72  | 72  | 72 |
| 2                      | 72   | 72  | 72  | 72  | 70  | 66  | 63   | 60  | 58  | 56  | 53  | 51 |
| 3                      | 72   | 68  | 64  | 60  | 57  | 54  | 52   | 49  | 47  | 46  | 44  | 42 |
| 4                      | 62   | 59  | 56  | 52  | 50  | 47  | 45   | 43  | 41  | 39  | 38  | 36 |
| 5                      | 56   | 53  | 50  | 47  | 44  | 42  | 40   | 38  | 37  | 35  | 34  | 32 |
| 6                      | 51   | 48  | 46  | 43  | 41  | 38  | 37   | 35  | 34  | 32  | 31  | 29 |
| 7                      | 47   | 45  | 42  | 39  | 38  | 35  | 34   | 32  | 31  | 30  | 29  | 27 |
| 8                      | 44   | 42  | 39  | 37  | 35  | 33  | 32   | 30  | 29  | 28  | 27  | 25 |
| 9                      | 42   | 39  | 37  | 35  | 33  | 31  | 30   | 28  | 27  | 26  | 25  | 24 |
| 10                     | 39   | 37  | 35  | 33  | 31  | 30  | 28   | 27  | 26  | 25  | 24  | 23 |
| 11                     | 38   | 36  | 34  | 31  | 30  | 28  | 27   | 26  | 25  | 24  | 23  | 22 |
| 12                     | 36   | 34  | 32  | 30  | 29  | 27  | 26   | 25  | 24  | 23  | 22  | 21 |
| 13                     | 35   | 33  | 31  | 29  | 28  | 26  | 25   | 24  | 23  | 22  | 21  | 20 |
| 14                     | 33   | 32  | 30  | 28  | 27  | 25  | 24   | 23  | 22  | 21  | 20  | 19 |
| 15                     | 32   | 31  | 29  | 27  | 26  | 24  | 23   | 22  | 21  | 20  | 19  | 19 |
| 16                     | 31   | 30  | 28  | 26  | 25  | 23  | 22   | 21  | 21  | 20  | 19  | 18 |
| 17                     | 30   | 29  | 27  | 25  | 24  | 23  | 22   | 21  | 20  | 19  | 18  | 17 |
| 18                     | 29   | 28  | 26  | 25  | 23  | 22  | 21   | 20  | 19  | 19  | 18  | 17 |
| 19                     | 29   | 27  | 26  | 24  | 23  | 22  | 21   | 20  | 19  | 18  | 17  | 17 |
| 20                     | 28   | 26  | 25  | 23  | 22  | 21  | 20   | 19  | 18  | 18  | 17  | 16 |

S = Fläche der gehobenen Last in m<sup>2</sup>



### 2. 2. 2. 2. Ausleger 40 m – 3 t

| Ausladungen            |  | 20,7 | 22  | 25  | 27  | 30   | 32  | 35   | 37   | 40  |  |  |
|------------------------|--|------|-----|-----|-----|------|-----|------|------|-----|--|--|
| Lastkurve (in t)       |  | 3    | 2,8 | 2,4 | 2,2 | 1,95 | 1,8 | 1,65 | 1,55 | 1,4 |  |  |
| S (in m <sup>2</sup> ) | Zulässige Windhöchstgeschwindigkeit in Betrieb (in km/h) |      |     |     |     |      |     |      |      |     |  |  |
| 1                      | 72   | 72   | 72  | 72  | 72  | 72   | 72  | 72   | 72   | 72  |  |  |
| 2                      | 72   | 72   | 72  | 72  | 71  | 68   | 65  | 63   | 60   |     |  |  |
| 3                      | 72   | 70   | 64  | 62  | 58  | 56   | 53  | 52   | 49   |     |  |  |
| 4                      | 62   | 60   | 56  | 53  | 50  | 48   | 46  | 45   | 43   |     |  |  |
| 5                      | 56   | 54   | 50  | 48  | 45  | 43   | 41  | 40   | 38   |     |  |  |
| 6                      | 51   | 49   | 46  | 44  | 41  | 39   | 38  | 37   | 35   |     |  |  |
| 7                      | 47   | 46   | 42  | 40  | 38  | 37   | 35  | 34   | 32   |     |  |  |
| 8                      | 44   | 43   | 39  | 38  | 36  | 34   | 33  | 32   | 30   |     |  |  |
| 9                      | 42   | 40   | 37  | 36  | 34  | 32   | 31  | 30   | 28   |     |  |  |
| 10                     | 39   | 38   | 35  | 34  | 32  | 31   | 29  | 28   | 27   |     |  |  |
| 11                     | 38   | 36   | 34  | 32  | 30  | 29   | 28  | 27   | 26   |     |  |  |
| 12                     | 36   | 35   | 32  | 31  | 29  | 28   | 27  | 26   | 25   |     |  |  |
| 13                     | 35   | 33   | 31  | 30  | 28  | 27   | 26  | 25   | 24   |     |  |  |
| 14                     | 33   | 32   | 30  | 29  | 27  | 26   | 25  | 24   | 23   |     |  |  |
| 15                     | 32   | 31   | 29  | 28  | 26  | 25   | 24  | 23   | 22   |     |  |  |
| 16                     | 31   | 30   | 28  | 27  | 25  | 24   | 23  | 22   | 21   |     |  |  |
| 17                     | 30   | 29   | 27  | 26  | 24  | 23   | 22  | 22   | 21   |     |  |  |
| 18                     | 29   | 28   | 26  | 25  | 24  | 23   | 22  | 21   | 20   |     |  |  |
| 19                     | 29   | 28   | 26  | 25  | 23  | 22   | 21  | 21   | 20   |     |  |  |
| 20                     | 28   | 27   | 25  | 24  | 22  | 22   | 21  | 20   | 19   |     |  |  |

S = Fläche der gehobenen Last in m<sup>2</sup>



**2. 2. 2. 3. Ausleger 35 m – 3 t**

| Ausladungen            |  | 20,8 | 22  | 25   | 27   | 30 | 32   | 35   |  |  |  |  |
|------------------------|--|------|-----|------|------|----|------|------|--|--|--|--|
| Lastkurve (in t)       |  | 3    | 2,8 | 2,45 | 2,25 | 2  | 1,85 | 1,65 |  |  |  |  |
| S (in m <sup>2</sup> ) | Zulässige Windhöchstgeschwindigkeit in Betrieb (in km/h) |      |     |      |      |    |      |      |  |  |  |  |
| 1                      | 72   | 72   | 72  | 72   | 72   | 72 | 72   | 72   |  |  |  |  |
| 2                      | 72   | 72   | 72  | 72   | 72   | 72 | 69   | 65   |  |  |  |  |
| 3                      | 72   | 70   | 65  | 62   | 59   | 57 | 53   |      |  |  |  |  |
| 4                      | 62   | 60   | 56  | 54   | 51   | 49 | 46   |      |  |  |  |  |
| 5                      | 56   | 54   | 50  | 48   | 46   | 44 | 41   |      |  |  |  |  |
| 6                      | 51   | 49   | 46  | 44   | 42   | 40 | 38   |      |  |  |  |  |
| 7                      | 47   | 46   | 43  | 41   | 38   | 37 | 35   |      |  |  |  |  |
| 8                      | 44   | 43   | 40  | 38   | 36   | 35 | 33   |      |  |  |  |  |
| 9                      | 42   | 40   | 38  | 36   | 34   | 33 | 31   |      |  |  |  |  |
| 10                     | 39   | 38   | 36  | 34   | 32   | 31 | 29   |      |  |  |  |  |
| 11                     | 38   | 36   | 34  | 33   | 31   | 30 | 28   |      |  |  |  |  |
| 12                     | 36   | 35   | 33  | 31   | 29   | 28 | 27   |      |  |  |  |  |
| 13                     | 35   | 33   | 31  | 30   | 28   | 27 | 26   |      |  |  |  |  |
| 14                     | 33   | 32   | 30  | 29   | 27   | 26 | 25   |      |  |  |  |  |
| 15                     | 32   | 31   | 29  | 28   | 26   | 25 | 24   |      |  |  |  |  |
| 16                     | 31   | 30   | 28  | 27   | 25   | 24 | 23   |      |  |  |  |  |
| 17                     | 30   | 29   | 27  | 26   | 25   | 24 | 22   |      |  |  |  |  |
| 18                     | 29   | 28   | 27  | 25   | 24   | 23 | 22   |      |  |  |  |  |
| 19                     | 29   | 28   | 26  | 25   | 23   | 22 | 21   |      |  |  |  |  |
| 20                     | 28   | 27   | 25  | 24   | 23   | 22 | 21   |      |  |  |  |  |

**S = Fläche der gehobenen Last in m<sup>2</sup>**



**2. 2. 2. 4. Ausleger 30 m – 3 t**

| Ausladungen            |  | 21 | 22   | 25   | 27   | 30 |  |  |  |  |  |  |
|------------------------|--|----|------|------|------|----|--|--|--|--|--|--|
| Lastkurve (in t)       |  | 3  | 2,85 | 2,45 | 2,25 | 2  |  |  |  |  |  |  |
| S (in m <sup>2</sup> ) | Zulässige Windhöchstgeschwindigkeit in Betrieb (in km/h) |    |      |      |      |    |  |  |  |  |  |  |
| 1                      | 72   | 72 | 72   | 72   | 72   |    |  |  |  |  |  |  |
| 2                      | 72   | 72 | 72   | 72   | 72   |    |  |  |  |  |  |  |
| 3                      | 72   | 70 | 65   | 62   | 59   |    |  |  |  |  |  |  |
| 4                      | 62   | 61 | 56   | 54   | 51   |    |  |  |  |  |  |  |
| 5                      | 56   | 54 | 50   | 48   | 46   |    |  |  |  |  |  |  |
| 6                      | 51   | 50 | 46   | 44   | 42   |    |  |  |  |  |  |  |
| 7                      | 47   | 46 | 43   | 41   | 38   |    |  |  |  |  |  |  |
| 8                      | 44   | 43 | 40   | 38   | 36   |    |  |  |  |  |  |  |
| 9                      | 42   | 41 | 38   | 36   | 34   |    |  |  |  |  |  |  |
| 10                     | 39   | 38 | 36   | 34   | 32   |    |  |  |  |  |  |  |
| 11                     | 38   | 37 | 34   | 33   | 31   |    |  |  |  |  |  |  |
| 12                     | 36   | 35 | 33   | 31   | 29   |    |  |  |  |  |  |  |
| 13                     | 35   | 34 | 31   | 30   | 28   |    |  |  |  |  |  |  |
| 14                     | 33   | 32 | 30   | 29   | 27   |    |  |  |  |  |  |  |
| 15                     | 32   | 31 | 29   | 28   | 26   |    |  |  |  |  |  |  |
| 16                     | 31   | 30 | 28   | 27   | 25   |    |  |  |  |  |  |  |
| 17                     | 30   | 29 | 27   | 26   | 25   |    |  |  |  |  |  |  |
| 18                     | 29   | 29 | 27   | 25   | 24   |    |  |  |  |  |  |  |
| 19                     | 29   | 28 | 26   | 25   | 23   |    |  |  |  |  |  |  |
| 20                     | 28   | 27 | 25   | 24   | 23   |    |  |  |  |  |  |  |

S = Fläche der gehobenen Last in m<sup>2</sup>



**2. 2. 2. 5. Ausleger 25 m – 3 t**

| Ausladungen            | 21   | 22   | 25   |  |  |  |  |  |  |  |  |  |
|------------------------|--|------|------|--|--|--|--|--|--|--|--|--|
| Lastkurve (in t)       | 3  | 2,85 | 2,45 |  |  |  |  |  |  |  |  |  |
| S (in m <sup>2</sup> ) | Zulässige Windhöchstgeschwindigkeit in Betrieb (in km/h) |      |      |  |  |  |  |  |  |  |  |  |
| 1                      | 72   | 72   | 72   |  |  |  |  |  |  |  |  |  |
| 2                      | 72   | 72   | 72   |  |  |  |  |  |  |  |  |  |
| 3                      | 72   | 70   | 65   |  |  |  |  |  |  |  |  |  |
| 4                      | 62   | 61   | 56   |  |  |  |  |  |  |  |  |  |
| 5                      | 56   | 54   | 50   |  |  |  |  |  |  |  |  |  |
| 6                      | 51   | 50   | 46   |  |  |  |  |  |  |  |  |  |
| 7                      | 47   | 46   | 43   |  |  |  |  |  |  |  |  |  |
| 8                      | 44   | 43   | 40   |  |  |  |  |  |  |  |  |  |
| 9                      | 42   | 41   | 38   |  |  |  |  |  |  |  |  |  |
| 10                     | 39   | 38   | 36   |  |  |  |  |  |  |  |  |  |
| 11                     | 38   | 37   | 34   |  |  |  |  |  |  |  |  |  |
| 12                     | 36   | 35   | 33   |  |  |  |  |  |  |  |  |  |
| 13                     | 35   | 34   | 31   |  |  |  |  |  |  |  |  |  |
| 14                     | 33   | 32   | 30   |  |  |  |  |  |  |  |  |  |
| 15                     | 32   | 31   | 29   |  |  |  |  |  |  |  |  |  |
| 16                     | 31   | 30   | 28   |  |  |  |  |  |  |  |  |  |
| 17                     | 30   | 29   | 27   |  |  |  |  |  |  |  |  |  |
| 18                     | 29   | 29   | 27   |  |  |  |  |  |  |  |  |  |
| 19                     | 29   | 28   | 26   |  |  |  |  |  |  |  |  |  |
| 20                     | 28   | 27   | 25   |  |  |  |  |  |  |  |  |  |

**S = Fläche der gehobenen Last in m<sup>2</sup>**



### 2. 2. 2. 6. Ausleger 20 m – 3 t

|   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Ausladungen                                     | 20   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Lastkurve (in t)                                | 3  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| S (in m <sup>2</sup> )                          | Zulässige Windhöchstgeschwindigkeit in Betrieb (in km/h) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1   | 72   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2   | 72   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3   | 72   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4   | 62   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5   | 56   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6   | 51   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 7   | 47   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 8   | 44   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 9   | 42   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 10  | 39   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 11  | 38   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 12  | 36   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 13  | 35   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 14  | 33   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 15  | 32   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 16  | 31   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 17  | 30   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 18  | 29   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 19  | 29   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 20  | 28   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| S = Fläche der gehobenen Last in m <sup>2</sup> |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |



**2. 2. 2. 7. Ausleger 46 m – 2,5 t**

| Ausladungen            | 21,4   | 22  | 25  | 27  | 30  | 32   | 35  | 37  | 40  | 42  | 46 |
|------------------------|--|-----|-----|-----|-----|------|-----|-----|-----|-----|----|
| Lastkurve (in t)       | 2,5  | 2,4 | 2,1 | 1,9 | 1,7 | 1,55 | 1,4 | 1,3 | 1,2 | 1,1 | 1  |
| S (in m <sup>2</sup> ) | Zulässige Windhöchstgeschwindigkeit in Betrieb (in km/h) |     |     |     |     |      |     |     |     |     |    |
| 1                      | 72   | 72  | 72  | 72  | 72  | 72   | 72  | 72  | 72  | 72  | 72 |
| 2                      | 72   | 72  | 72  | 70  | 66  | 63   | 60  | 58  | 56  | 53  | 51 |
| 3                      | 66   | 64  | 60  | 57  | 54  | 52   | 49  | 47  | 46  | 44  | 42 |
| 4                      | 57   | 56  | 52  | 50  | 47  | 45   | 43  | 41  | 39  | 38  | 36 |
| 5                      | 51   | 50  | 47  | 44  | 42  | 40   | 38  | 37  | 35  | 34  | 32 |
| 6                      | 46   | 46  | 43  | 41  | 38  | 37   | 35  | 34  | 32  | 31  | 29 |
| 7                      | 43   | 42  | 39  | 38  | 35  | 34   | 32  | 31  | 30  | 29  | 27 |
| 8                      | 40   | 39  | 37  | 35  | 33  | 32   | 30  | 29  | 28  | 27  | 25 |
| 9                      | 38   | 37  | 35  | 33  | 31  | 30   | 28  | 27  | 26  | 25  | 24 |
| 10                     | 36   | 35  | 33  | 31  | 30  | 28   | 27  | 26  | 25  | 24  | 23 |
| 11                     | 34   | 34  | 31  | 30  | 28  | 27   | 26  | 25  | 24  | 23  | 22 |
| 12                     | 33   | 32  | 30  | 29  | 27  | 26   | 25  | 24  | 23  | 22  | 21 |
| 13                     | 32   | 31  | 29  | 28  | 26  | 25   | 24  | 23  | 22  | 21  | 20 |
| 14                     | 30   | 30  | 28  | 27  | 25  | 24   | 23  | 22  | 21  | 20  | 19 |
| 15                     | 29   | 29  | 27  | 26  | 24  | 23   | 22  | 21  | 20  | 19  | 19 |
| 16                     | 28   | 28  | 26  | 25  | 23  | 22   | 21  | 21  | 20  | 19  | 18 |
| 17                     | 28   | 27  | 25  | 24  | 23  | 22   | 21  | 20  | 19  | 18  | 17 |
| 18                     | 27   | 26  | 25  | 23  | 22  | 21   | 20  | 19  | 19  | 18  | 17 |
| 19                     | 26   | 26  | 24  | 23  | 22  | 21   | 20  | 19  | 18  | 17  | 17 |
| 20                     | 25   | 25  | 23  | 22  | 21  | 20   | 19  | 18  | 18  | 17  | 16 |

**S = Fläche der gehobenen Last in m<sup>2</sup>**



### 2. 2. 2. 8. Ausleger 40 m – 2,5 t

| Ausladungen            |  | 24,3 | 25  | 27  | 30   | 32  | 35   | 37   | 40  |  |  |
|------------------------|--|------|-----|-----|------|-----|------|------|-----|--|--|
| Lastkurve (in t)       |  | 2,5  | 2,4 | 2,2 | 1,95 | 1,8 | 1,65 | 1,55 | 1,4 |  |  |
| S (in m <sup>2</sup> ) | Zulässige Windhöchstgeschwindigkeit in Betrieb (in km/h) |      |     |     |      |     |      |      |     |  |  |
| 1                      |  | 72   | 72  | 72  | 72   | 72  | 72   | 72   | 72  |  |  |
| 2                      |  | 72   | 72  | 72  | 71   | 68  | 65   | 63   | 60  |  |  |
| 3                      |  | 66   | 64  | 62  | 58   | 56  | 53   | 52   | 49  |  |  |
| 4                      |  | 57   | 56  | 53  | 50   | 48  | 46   | 45   | 43  |  |  |
| 5                      |  | 51   | 50  | 48  | 45   | 43  | 41   | 40   | 38  |  |  |
| 6                      |  | 46   | 46  | 44  | 41   | 39  | 38   | 37   | 35  |  |  |
| 7                      |  | 43   | 42  | 40  | 38   | 37  | 35   | 34   | 32  |  |  |
| 8                      |  | 40   | 39  | 38  | 36   | 34  | 33   | 32   | 30  |  |  |
| 9                      |  | 38   | 37  | 36  | 34   | 32  | 31   | 30   | 28  |  |  |
| 10                     |  | 36   | 35  | 34  | 32   | 31  | 29   | 28   | 27  |  |  |
| 11                     |  | 34   | 34  | 32  | 30   | 29  | 28   | 27   | 26  |  |  |
| 12                     |  | 33   | 32  | 31  | 29   | 28  | 27   | 26   | 25  |  |  |
| 13                     |  | 32   | 31  | 30  | 28   | 27  | 26   | 25   | 24  |  |  |
| 14                     |  | 30   | 30  | 29  | 27   | 26  | 25   | 24   | 23  |  |  |
| 15                     |  | 29   | 29  | 28  | 26   | 25  | 24   | 23   | 22  |  |  |
| 16                     |  | 28   | 28  | 27  | 25   | 24  | 23   | 22   | 21  |  |  |
| 17                     |  | 28   | 27  | 26  | 24   | 23  | 22   | 22   | 21  |  |  |
| 18                     |  | 27   | 26  | 25  | 24   | 23  | 22   | 21   | 20  |  |  |
| 19                     |  | 26   | 26  | 25  | 23   | 22  | 21   | 21   | 20  |  |  |
| 20                     |  | 25   | 25  | 24  | 22   | 22  | 21   | 20   | 19  |  |  |

S = Fläche der gehobenen Last in m<sup>2</sup>





**2. 2. 2. 9. Ausleger 35 m – 2,5 t**

| Ausladungen            | 24,4   | 25   | 27   | 30 | 32   | 35   |  |  |  |  |
|------------------------|--|------|------|----|------|------|--|--|--|--|
| Lastkurve (in t)       | 2,5  | 2,45 | 2,25 | 2  | 1,85 | 1,65 |  |  |  |  |
| S (in m <sup>2</sup> ) | Zulässige Windhöchstgeschwindigkeit in Betrieb (in km/h) |      |      |    |      |      |  |  |  |  |
| 1                      | 72   | 72   | 72   | 72 | 72   | 72   |  |  |  |  |
| 2                      | 72   | 72   | 72   | 72 | 69   | 65   |  |  |  |  |
| 3                      | 66   | 65   | 62   | 59 | 57   | 53   |  |  |  |  |
| 4                      | 57   | 56   | 54   | 51 | 49   | 46   |  |  |  |  |
| 5                      | 51   | 50   | 48   | 46 | 44   | 41   |  |  |  |  |
| 6                      | 46   | 46   | 44   | 42 | 40   | 38   |  |  |  |  |
| 7                      | 43   | 43   | 41   | 38 | 37   | 35   |  |  |  |  |
| 8                      | 40   | 40   | 38   | 36 | 35   | 33   |  |  |  |  |
| 9                      | 38   | 38   | 36   | 34 | 33   | 31   |  |  |  |  |
| 10                     | 36   | 36   | 34   | 32 | 31   | 29   |  |  |  |  |
| 11                     | 34   | 34   | 33   | 31 | 30   | 28   |  |  |  |  |
| 12                     | 33   | 33   | 31   | 29 | 28   | 27   |  |  |  |  |
| 13                     | 32   | 31   | 30   | 28 | 27   | 26   |  |  |  |  |
| 14                     | 30   | 30   | 29   | 27 | 26   | 25   |  |  |  |  |
| 15                     | 29   | 29   | 28   | 26 | 25   | 24   |  |  |  |  |
| 16                     | 28   | 28   | 27   | 25 | 24   | 23   |  |  |  |  |
| 17                     | 28   | 27   | 26   | 25 | 24   | 22   |  |  |  |  |
| 18                     | 27   | 27   | 25   | 24 | 23   | 22   |  |  |  |  |
| 19                     | 26   | 26   | 25   | 23 | 22   | 21   |  |  |  |  |
| 20                     | 25   | 25   | 24   | 23 | 22   | 21   |  |  |  |  |

S = Fläche der gehobenen Last in m<sup>2</sup>



**2. 2. 2. 10. Ausleger 30 m – 2,5 t**

| Ausladungen            |  | 24,7 | 25   | 27   | 30 |  |  |  |  |  |  |
|------------------------|--|------|------|------|----|--|--|--|--|--|--|
| Lastkurve (in t)       |  | 2,5  | 2,45 | 2,25 | 2  |  |  |  |  |  |  |
| S (in m <sup>2</sup> ) | Zulässige Windhöchstgeschwindigkeit in Betrieb (in km/h) |      |      |      |    |  |  |  |  |  |  |
| 1                      | 72   | 72   | 72   | 72   |    |  |  |  |  |  |  |
| 2                      | 72   | 72   | 72   | 72   |    |  |  |  |  |  |  |
| 3                      | 66   | 65   | 62   | 59   |    |  |  |  |  |  |  |
| 4                      | 57   | 56   | 54   | 51   |    |  |  |  |  |  |  |
| 5                      | 51   | 50   | 48   | 46   |    |  |  |  |  |  |  |
| 6                      | 46   | 46   | 44   | 42   |    |  |  |  |  |  |  |
| 7                      | 43   | 43   | 41   | 38   |    |  |  |  |  |  |  |
| 8                      | 40   | 40   | 38   | 36   |    |  |  |  |  |  |  |
| 9                      | 38   | 38   | 36   | 34   |    |  |  |  |  |  |  |
| 10                     | 36   | 36   | 34   | 32   |    |  |  |  |  |  |  |
| 11                     | 34   | 34   | 33   | 31   |    |  |  |  |  |  |  |
| 12                     | 33   | 33   | 31   | 29   |    |  |  |  |  |  |  |
| 13                     | 32   | 31   | 30   | 28   |    |  |  |  |  |  |  |
| 14                     | 30   | 30   | 29   | 27   |    |  |  |  |  |  |  |
| 15                     | 29   | 29   | 28   | 26   |    |  |  |  |  |  |  |
| 16                     | 28   | 28   | 27   | 25   |    |  |  |  |  |  |  |
| 17                     | 28   | 27   | 26   | 25   |    |  |  |  |  |  |  |
| 18                     | 27   | 27   | 25   | 24   |    |  |  |  |  |  |  |
| 19                     | 26   | 26   | 25   | 23   |    |  |  |  |  |  |  |
| 20                     | 25   | 25   | 24   | 23   |    |  |  |  |  |  |  |

S = Fläche der gehobenen Last in m<sup>2</sup>



**2. 2. 2. 11. Ausleger 25 m – 2,5 t**

| Ausladungen            | 24,7   | 25   |  |  |  |  |  |  |  |  |  |
|------------------------|--|------|--|--|--|--|--|--|--|--|--|
| Lastkurve (in t)       | 2,5  | 2,45 |  |  |  |  |  |  |  |  |  |
| S (in m <sup>2</sup> ) | Zulässige Windhöchstgeschwindigkeit in Betrieb (in km/h) |      |  |  |  |  |  |  |  |  |  |
| 1                      | 72   | 72   |  |  |  |  |  |  |  |  |  |
| 2                      | 72   | 72   |  |  |  |  |  |  |  |  |  |
| 3                      | 66   | 65   |  |  |  |  |  |  |  |  |  |
| 4                      | 57   | 56   |  |  |  |  |  |  |  |  |  |
| 5                      | 51   | 50   |  |  |  |  |  |  |  |  |  |
| 6                      | 46   | 46   |  |  |  |  |  |  |  |  |  |
| 7                      | 43   | 43   |  |  |  |  |  |  |  |  |  |
| 8                      | 40   | 40   |  |  |  |  |  |  |  |  |  |
| 9                      | 38   | 38   |  |  |  |  |  |  |  |  |  |
| 10                     | 36   | 36   |  |  |  |  |  |  |  |  |  |
| 11                     | 34   | 34   |  |  |  |  |  |  |  |  |  |
| 12                     | 33   | 33   |  |  |  |  |  |  |  |  |  |
| 13                     | 32   | 31   |  |  |  |  |  |  |  |  |  |
| 14                     | 30   | 30   |  |  |  |  |  |  |  |  |  |
| 15                     | 29   | 29   |  |  |  |  |  |  |  |  |  |
| 16                     | 28   | 28   |  |  |  |  |  |  |  |  |  |
| 17                     | 28   | 27   |  |  |  |  |  |  |  |  |  |
| 18                     | 27   | 27   |  |  |  |  |  |  |  |  |  |
| 19                     | 26   | 26   |  |  |  |  |  |  |  |  |  |
| 20                     | 25   | 25   |  |  |  |  |  |  |  |  |  |

**S = Fläche der gehobenen Last in m<sup>2</sup>**



### 2. 2. 2. 12. Ausleger 20 m – 2,5 t

|   |   |            |  |  |  |  |  |  |  |  |  |  |  |
|---|---|------------|--|--|--|--|--|--|--|--|--|--|--|
| <b>Ausladungen</b>                                    |   | <b>20</b>  |  |  |  |  |  |  |  |  |  |  |  |
| <b>Lastkurve (in t)</b>                               |   | <b>2,5</b> |  |  |  |  |  |  |  |  |  |  |  |
| <b>S (in m<sup>2</sup>)</b>                           | <b>Zulässige Windhöchstgeschwindigkeit in Betrieb (in km/h)</b> |            |  |  |  |  |  |  |  |  |  |  |  |
| 1   |   | 72         |  |  |  |  |  |  |  |  |  |  |  |
| 2   |   | 72         |  |  |  |  |  |  |  |  |  |  |  |
| 3   |   | 66         |  |  |  |  |  |  |  |  |  |  |  |
| 4   |   | 57         |  |  |  |  |  |  |  |  |  |  |  |
| 5   |   | 51         |  |  |  |  |  |  |  |  |  |  |  |
| 6   |   | 46         |  |  |  |  |  |  |  |  |  |  |  |
| 7   |   | 43         |  |  |  |  |  |  |  |  |  |  |  |
| 8   |   | 40         |  |  |  |  |  |  |  |  |  |  |  |
| 9   |   | 38         |  |  |  |  |  |  |  |  |  |  |  |
| 10  |   | 36         |  |  |  |  |  |  |  |  |  |  |  |
| 11  |   | 34         |  |  |  |  |  |  |  |  |  |  |  |
| 12  |   | 33         |  |  |  |  |  |  |  |  |  |  |  |
| 13  |   | 32         |  |  |  |  |  |  |  |  |  |  |  |
| 14  |   | 30         |  |  |  |  |  |  |  |  |  |  |  |
| 15  |   | 29         |  |  |  |  |  |  |  |  |  |  |  |
| 16  |   | 28         |  |  |  |  |  |  |  |  |  |  |  |
| 17  |   | 28         |  |  |  |  |  |  |  |  |  |  |  |
| 18  |   | 27         |  |  |  |  |  |  |  |  |  |  |  |
| 19  |   | 26         |  |  |  |  |  |  |  |  |  |  |  |
| 20  |   | 25         |  |  |  |  |  |  |  |  |  |  |  |
| <b>S = Fläche der gehobenen Last in m<sup>2</sup></b> |   |            |  |  |  |  |  |  |  |  |  |  |  |