

## Dual Shield 7100 LC

Dual Shield 7100 LC provides outstanding operator appeal with its easily controlled arc, improved operation at lower current levels, minimal spatter and easily removed slag. Dual Shield 7100 LC can be used with CO<sub>2</sub> or 75% Ar/25% CO<sub>2</sub> shielding, however pure CO<sub>2</sub> is recommended in applications where restraint is high.

### Specifications

|                        |                                                                                                                                                      |
|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Classifications</b> | ASME SFA 5.36<br>ASME SFA 5.20<br>AWS A5.36 : E71T1-M21A2-CS1-H8<br>AWS A5.36 : E71T1-C1A4-CS1-DH8<br>AWS A5.20 : E71T-1C-DH8/T-1MH8/T-9C-DH8/T-9MH8 |
| <b>Approvals</b>       | CWB : CSA W48 E491T-9-H8, E491T-9M-H8<br>ABS<br>DNV-GL<br>LR<br>Seismic Certified "D"                                                                |
| <b>Industry</b>        | Mobile Equipment<br>Railcars<br>Ship/Barge Building<br>Bridge Construction<br>Civil Construction<br>Industrial and General Fabrication<br>Process    |

Approvals are based on factory location. Please contact ESAB for more information.

### Typical Tensile Properties

| Condition                          | Yield Strength     | Tensile Strength   | Elongation | Reduction in Area |
|------------------------------------|--------------------|--------------------|------------|-------------------|
| <b>100% CO<sub>2</sub></b>         |                    |                    |            |                   |
| As Welded                          | 565 MPa ( 73 ksi ) | 560 MPa ( 81 ksi ) | 23 %       | 52 %              |
| <b>75% Ar - 25% CO<sub>2</sub></b> |                    |                    |            |                   |
| As Welded                          | 572 MPa ( 83 ksi ) | 621 MPa ( 90 ksi ) | 26 %       | 64 %              |

### Typical Charpy V-Notch Properties

| Condition                          | Testing Temperature | Impact Value      |
|------------------------------------|---------------------|-------------------|
| <b>100% CO<sub>2</sub></b>         |                     |                   |
| As Welded                          | -18 °C ( 0 °F )     | 92 J ( 68 ft-lb ) |
| As Welded                          | -29 °C ( -20 °F )   | 56 J ( 41 ft-lb ) |
| <b>75% Ar - 25% CO<sub>2</sub></b> |                     |                   |
| As Welded                          | -18 °C ( 0 °F )     | 61 J ( 50 ft-lb ) |
| As Welded                          | -29 °C ( -20 °F )   | 42 J ( 31 ft-lb ) |

### Typical Weld Metal Analysis %

| C                                  | Mn  | Si  | S     | P     |
|------------------------------------|-----|-----|-------|-------|
| <b>100% CO<sub>2</sub></b>         |     |     |       |       |
| 0.03                               | 1.2 | 0.5 | 0.010 | 0.010 |
| <b>75% Ar - 25% CO<sub>2</sub></b> |     |     |       |       |
| 0.03                               | 1.4 | 0.6 | 0.010 | 0.010 |

### Deposition Data

| Diameter                   | Current | Voltage | Wire Feed Speed | Deposition Efficiency (%) | Deposition Rate |
|----------------------------|---------|---------|-----------------|---------------------------|-----------------|
| <b>100% CO<sub>2</sub></b> |         |         |                 |                           |                 |

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### Deposition Data

| Diameter               | Current | Voltage | Wire Feed Speed                | Deposition Efficiency (%) | Deposition Rate            |
|------------------------|---------|---------|--------------------------------|---------------------------|----------------------------|
| 1.6 mm<br>( 1/16 in. ) | 345 A   | 30 V    | 889 cm/min<br>( 350 in./min )  | 80.7 %                    | 5.2 kg/h<br>( 11.5 lbs/h ) |
| 1.2 mm<br>( .045 in. ) | 145 A   | 24.5 V  | 508 cm/min<br>( 200 in./min )  | 81.2 %                    | 1.6 kg/h<br>( 3.6 lbs/h )  |
| 1.6 mm<br>( 1/16 in. ) | 320 A   | 28 V    | 762 cm/min<br>( 300 in./min )  | 79.9 %                    | 4.4 kg/h<br>( 9.7 lbs/h )  |
| 1.2 mm<br>( .045 in. ) | 265 A   | 29 V    | 1270 cm/min<br>( 500 in./min ) | 82.8 %                    | 4.2 kg/h<br>( 9.3 lbs/h )  |
| 1.6 mm<br>( 1/16 in. ) | 385 A   | 32 V    | 1016 cm/min<br>( 400 in./min ) | 82.6 %                    | 6.1 kg/h<br>( 13.4 lbs/h ) |
| 1.6 mm<br>( 1/16 in. ) | 445 A   | 32.5 V  | 1270 cm/min<br>( 500 in./min ) | 82.8 %                    | 7.6 kg/h<br>( 16.7 lbs/h ) |
| 1.4 mm<br>( .052 in. ) | 285 A   | 28.5 V  | 1016 cm/min<br>( 400 in./min ) | 81.3 %                    | 4.4 kg/h<br>( 9.8 lbs/h )  |
| 1.4 mm<br>( .052 in. ) | 230 A   | 29.5 V  | 1270 cm/min<br>( 500 in./min ) | 82.3 %                    | 5.5 kg/h<br>( 12.2 lbs/h ) |
| 1.4 mm<br>( .052 in. ) | 370 A   | 30.2 V  | 1524 cm/min<br>( 600 in./min ) | 82.7 %                    | 6.7 kg/h<br>( 14.7 lbs/h ) |
| 1.2 mm<br>( .045 in. ) | 235 A   | 27.5 V  | 1016 cm/min<br>( 400 in./min ) | 82.5 %                    | 3.3 kg/h<br>( 7.3 lbs/h )  |
| 1.2 mm<br>( .045 in. ) | 190 A   | 26 V    | 762 cm/min<br>( 300 in./min )  | 81.4 %                    | 2.5 kg/h<br>( 5.4 lbs/h )  |
| 1.4 mm<br>( .052 in. ) | 145 A   | 25 V    | 381 cm/min<br>( 150 in./min )  | 74.3 %                    | 1.5 kg/h<br>( 3.4 lbs/h )  |
| 1.4 mm<br>( .052 in. ) | 235 A   | 27.5 V  | 762 cm/min<br>( 300 in./min )  | 78.2 %                    | 3.2 kg/h<br>( 7.0 lbs/h )  |
| 1.6 mm<br>( 1/16 in. ) | 195 A   | 24.5 V  | 381 cm/min<br>( 150 in./min )  | 73.7 %                    | 2.0 kg/h<br>( 4.5 lbs/h )  |
| 1.6 mm<br>( 1/16 in. ) | 285 A   | 26 V    | 635 cm/min<br>( 250 in./min )  | 79.4 %                    | 3.7 kg/h<br>( 8.1 lbs/h )  |
| 1.4 mm<br>( .052 in. ) | 180 A   | 25.5 V  | 508 cm/min<br>( 200 in./min )  | 74.6 %                    | 2.0 kg/h<br>( 4.5 lbs/h )  |

### Recommended Welding Parameters

| Wire Diameter              | Current   | TTW Dist.                       | Voltage | Wire Feed Speed                         |
|----------------------------|-----------|---------------------------------|---------|-----------------------------------------|
| <b>100% CO<sub>2</sub></b> |           |                                 |         |                                         |
| 1.6 mm<br>( 1/16 in. )     | 285-400 A | 25.4-31.75 mm<br>( 1-1.25 in. ) | 28-32 V | 813-1168 cm/min<br>( 320-460 in./min )  |
| 1.6 mm<br>( 1/16 in. )     | 250-340 A | 19-25.4 mm<br>( 3/4-1 in. )     | 27-30 V | 610-813 cm/min<br>( 240-320 in./min )   |
| 1.6 mm<br>( 1/16 in. )     | 185-285 A | 16-19 mm<br>( 5/8-3/4 in. )     | 24-28 V | 356-610 cm/min<br>( 140-240 in./min )   |
| 1.4 mm<br>( .052 in. )     | 245-355 A | 19-25.4 mm<br>( 3/4-1 in. )     | 28-32 V | 940-1372 cm/min<br>( 370-540 in./min )  |
| 1.4 mm<br>( .052 in. )     | 225-295 A | 16-19 mm<br>( 5/8-3/4 in. )     | 27-30 V | 686-940 cm/min<br>( 270-370 in./min )   |
| 1.4 mm<br>( .052 in. )     | 135-250 A | 12.7-16 mm<br>( 1/2-5/8 in. )   | 24-28 V | 317.5-686 cm/min<br>( 125-270 in./min ) |
| 1.2 mm<br>( .045 in. )     | 185-265 A | 19-25.4 mm<br>( 3/4-1 in. )     | 27-29 V | 775-1194 cm/min<br>( 305-470 in./min )  |

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| Wire Diameter                      | Current   | TTW Dist.                     | Voltage | Wire Feed Speed                       |
|------------------------------------|-----------|-------------------------------|---------|---------------------------------------|
| 1.2 mm<br>(.045 in.)               | 165-225 A | 12.7-19 mm<br>(1/2-3/4 in.)   | 24-27 V | 610-775 cm/min<br>(240-305 in./min)   |
| 1.2 mm<br>(.045 in.)               | 130-200 A | 9.5-12.7 mm<br>(3/8-1/2 in.)  | 22-26 V | 356-610 cm/min<br>(140-240 in./min)   |
| 1.2 mm<br>(.045 in.)               | 135-205 A | 9.5-12.7 mm<br>(3/8-1/2 in.)  | 23-26 V | 432-737 cm/min<br>(170-290 in./min)   |
| 1.2 mm<br>(.045 in.)               | 175-230 A | 12.7-19 mm<br>(1/2-3/4 in.)   | 25-27 V | 737-889 cm/min<br>(290-350 in./min)   |
| 1.2 mm<br>(.045 in.)               | 180-265 A | 19-25.4 mm<br>(3/4-1 in.)     | 26-30 V | 889-1397 cm/min<br>(350-550 in./min)  |
| 1.4 mm<br>(.052 in.)               | 125-235 A | 12.7-16 mm<br>(1/2-5/8 in.)   | 23-26 V | 330-711 cm/min<br>(130-280 in./min)   |
| 1.4 mm<br>(.052 in.)               | 215-290 A | 16-19 mm<br>(5/8-3/4 in.)     | 25-29 V | 711-1016 cm/min<br>(280-400 in./min)  |
| 1.4 mm<br>(.052 in.)               | 250-350 A | 19-25.4 mm<br>(3/4-1 in.)     | 29-31 V | 1016-1524 cm/min<br>(400-600 in./min) |
| 1.6 mm<br>(1/16 in.)               | 165-270 A | 16-19 mm<br>(5/8-3/4 in.)     | 25-28 V | 343-673 cm/min<br>(135-265 in./min)   |
| 1.6 mm<br>(1/16 in.)               | 245-345 A | 19-25.4 mm<br>(3/4-1 in.)     | 27-30 V | 673-1016 cm/min<br>(265-400 in./min)  |
| 1.6 mm<br>(1/16 in.)               | 290-415 A | 25.4-31.75 mm<br>(1-1.25 in.) | 28-32 V | 1016-1270 cm/min<br>(400-500 in./min) |
| <b>75% Ar - 25% CO<sub>2</sub></b> |           |                               |         |                                       |
| 1.6 mm<br>(1/16 in.)               | 285-400 A | 25.4-31.75 mm<br>(1-1.25 in.) | 28-32 V | 813-1168 cm/min<br>(320-460 in./min)  |
| 1.6 mm<br>(1/16 in.)               | 250-340 A | 19-25.4 mm<br>(3/4-1 in.)     | 27-30 V | 610-813 cm/min<br>(240-320 in./min)   |
| 1.6 mm<br>(1/16 in.)               | 185-285 A | 16-19 mm<br>(5/8-3/4 in.)     | 24-28 V | 356-610 cm/min<br>(140-240 in./min)   |
| 1.4 mm<br>(.052 in.)               | 245-355 A | 19-25.4 mm<br>(3/4-1 in.)     | 28-32 V | 940-1372 cm/min<br>(370-540 in./min)  |
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| 1.2 mm<br>(.045 in.)               | 185-265 A | 19-25.4 mm<br>(3/4-1 in.)     | 27-29 V | 775-1194 cm/min<br>(305-470 in./min)  |
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| 1.4 mm<br>(.052 in.)               | 125-235 A | 12.7-16 mm<br>(1/2-5/8 in.)   | 23-26 V | 330-711 cm/min<br>(130-280 in./min)   |
| 1.4 mm<br>(.052 in.)               | 215-290 A | 16-19 mm<br>(5/8-3/4 in.)     | 25-29 V | 711-1016 cm/min<br>(280-400 in./min)  |

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| 1.6 mm<br>( 1/16 in. ) | 165-270 A | 16-19 mm<br>( 5/8-3/4 in. )     | 25-28 V | 343-673 cm/min<br>( 135-265 in./min )   |
| 1.6 mm<br>( 1/16 in. ) | 245-345 A | 19-25.4 mm<br>( 3/4-1 in. )     | 27-30 V | 673-1016 cm/min<br>( 265-400 in./min )  |
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