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Injectors for Contrast Media



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MALLINCKRODT

LF®

Angiomat⁽⁺⁾ ILLUMENA⁽⁺⁾

High pressure injector for cardiology, angiography and CT contrast delivery

► **Fill-Control Bar**

allows easy, single-handed operation to smoothly and directly drive the plunger for syringe filling and air expulsion.

► **Powerhead Display**

The powerhead LED display electronically "flips" the volume and injection parameters data to the correct orientation.

► **Powerhead Extension**

for easier patient access.
20 cm were added to the powerhead extension arm.

► **Syringes**

The Angiomat⁽⁺⁾ ILLUMENA⁽⁺⁾ is the only angiographic injector that uses transparent syringes and prefilled syringes.

► **Air Detection Device**

The optional air detection device (ADAWS) serves as an aid in identifying empty syringes and air bolus.

► **Touchscreen**

The pressure sensitive touchscreen display and intuitive software make the process to injection direct and easy.

► **Steady Base with Wheels**

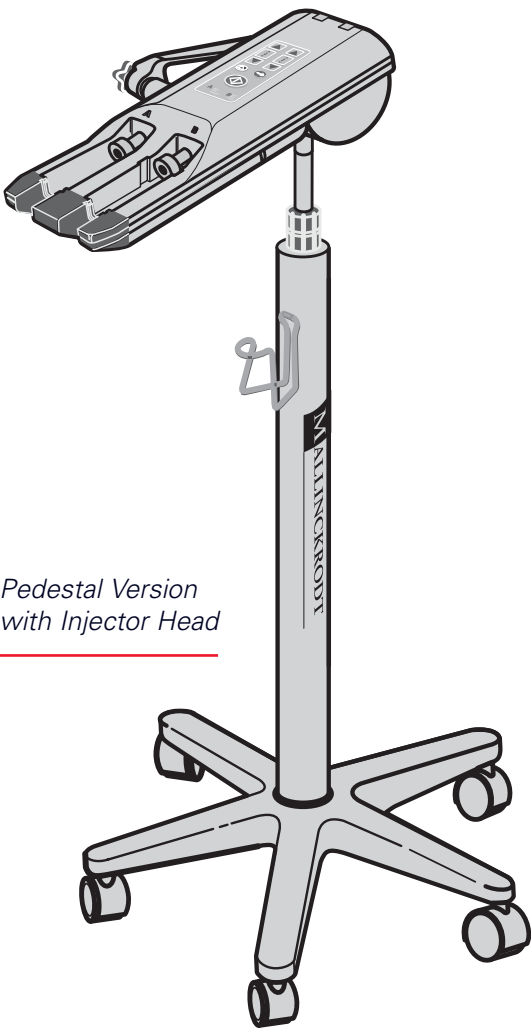
Larger wheels provide smooth maneuverability even over cables or other obstructions. Wheels lock to hold unit securely in place.



Technical Specifications

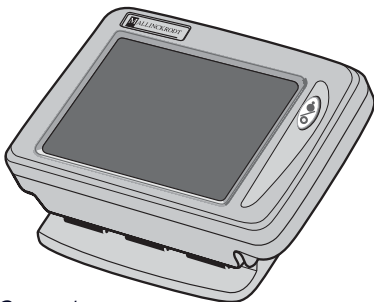
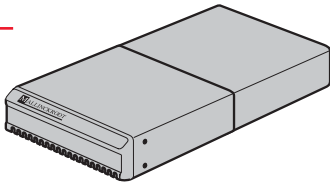
Flow Rate
A Side
60 ml syringe: 0.1 - 10.0 ml/sec
10/15/20/30 ml syringe: 0.1 - 8.0 ml/sec
B Side
60 ml syringe: 0.1 - 8.0 ml/sec
Pressure Limit
A Side
60 ml syringe: 20 - 150 psi
10/15/20/30 ml syringe: 20 - 200 psi
B Side
60 ml syringe: fixed at 86 psi
Syringe Sizes
60 ml empty syringes
10/15/20/30 ml prefilled syringes
Programmable Volume
1 ml to installed syringe size
Scan Delay
0 to 60 seconds
Number of Phases
2
Stored Protocols
20 protocols

System Configuration



Pedestal Version
with Injector Head

Electronic Box



Console

CT 9000⁽⁺⁾ ADV

Advanced contrast delivery in computed tomography

► **LED Volume Display**

The powerhead LED display provides a highly visible indication of remaining volume.

► **Syringes**

The system accommodates both front loading 200 ml disposable and prefilled syringes.

► **Programmable Auto-Fill**

This Auto-Fill function automatically moves the syringe plunger to the selected volume.

► **Achieved Values**

Achieved values are automatically displayed after an injection. An optional line printer provides a hard copy for documentation.



► **Double-Head Injector**

The System can be upgraded to a double-head injector when interfaced with the unique OptiStat⁽⁺⁾ Power Injector.

► **On Screen Display**

of all pre-stored protocols gives you a quick reference and easy recall of any injection program. The status board area displays the available syringe volume, the volume requested, the pressure setting and the scan delay time. At the touch of a button, the CT 9000⁽⁺⁾ ADV can display one of numerous resident languages.

► **Duration Mode**

As protocols, flow rates, or volumes are modified, the display automatically calculates injection duration, prior to injection and displays the time since the beginning of the injection for up to 10 minutes after the end of the injection.

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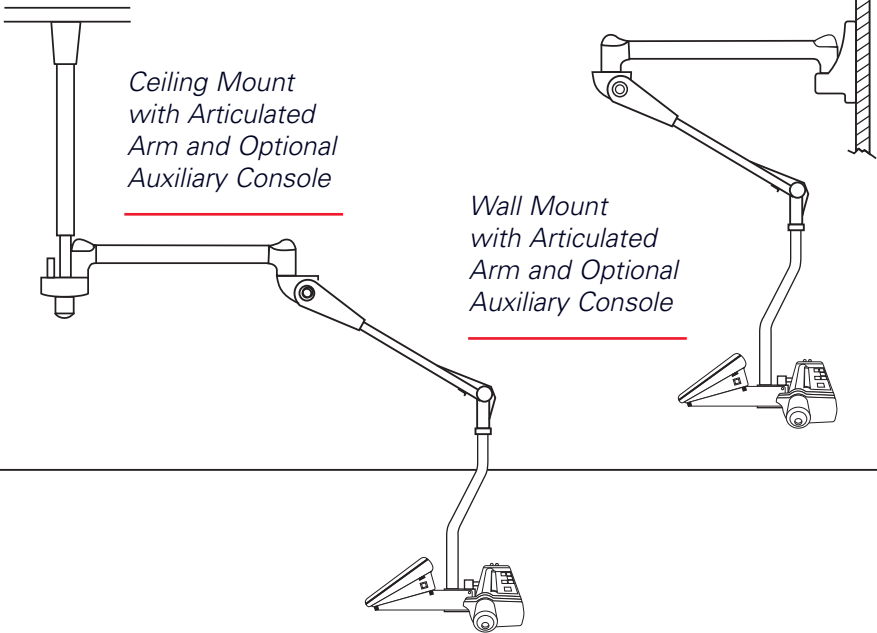
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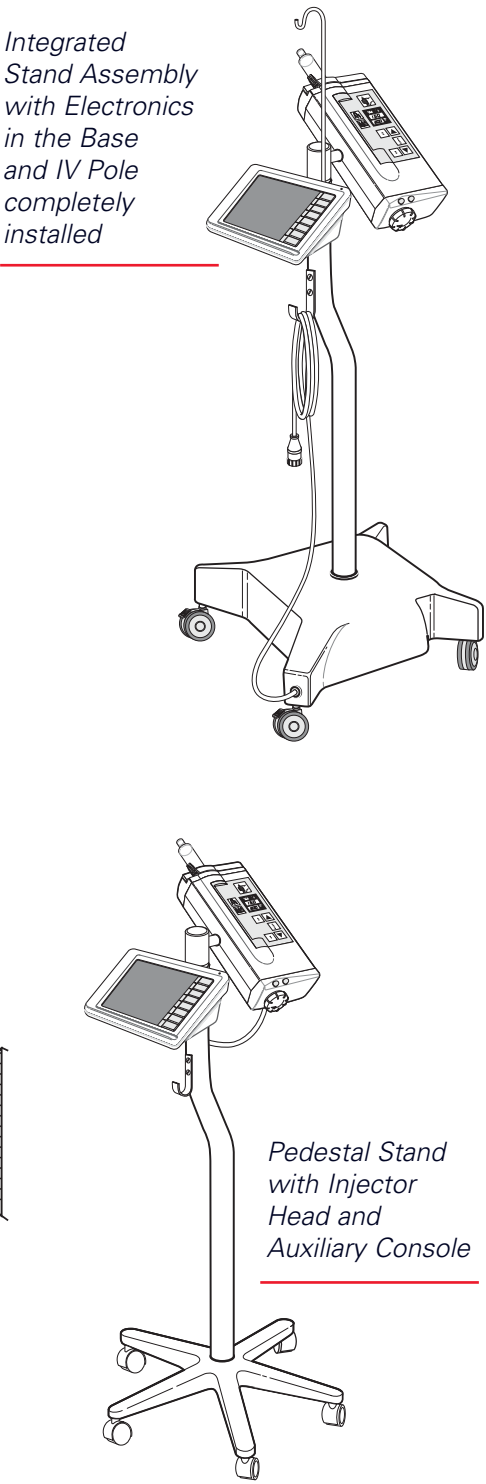
LF[®]

Technical Specifications

Flow Rate 125 ml/200 ml syringe: 0.1 - 9.9 ml/sec 30 ml/50 ml syringe: 0.1 - 7.0 ml/sec
Pressure Limit 300 psi/21 bar
Syringe Sizes 200 ml empty syringe 50/100/125 ml high pressure prefilled syringe 30 ml/50 ml handheld prefilled syringe
Fill Rate Forward or Reverse: 2 - 7 ml/sec
Syringe Heater 37° C (98° F) nominal. Minimizes the loss of heat from preheated contrast
Volume 0.1 ml to volume in syringe
Scan Delay 0 to 99 seconds
Injection Delay 0 to 255 seconds
Number of Phases 4
Memory Capacity 12 protocols



System Configurations



OPTISTAR^(*) LE

Dual syringe injector for magnetic resonance tomography

► **Dual Syringe Powerhead**

Independent dual syringe powerhead allows timed contrast delivery followed by saline flush. The OPTISTAR^(*) LE can perform single bolus or dual phase injections.

► **Easy Drop-In Syringe Loading**

results in faster procedures. Syringe filling can be performed in either the control room or the scan room. Powerhead is designed to accept prefilled syringes.

► **Direct AC Powered**

No battery maintenance and failures. Improved uptime reliability and significantly reduced staff time requirements for maintenance.

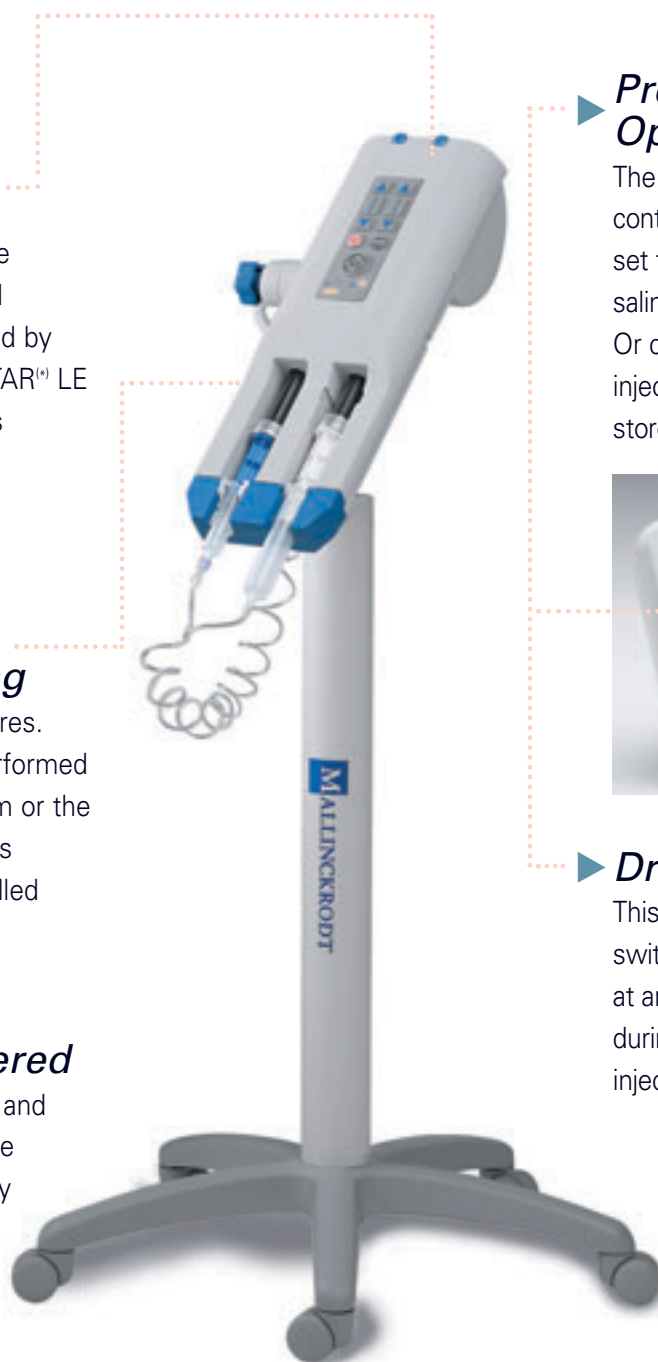
► **Preprogrammed Operation**

The responsive touchscreen control allows the user to quickly set the amount of contrast or saline and the rate of injection. Or choose from 20 preset injection programs already stored in the system.



► **Drip Mode**

This feature allows the user to switch from injection to drip mode at any time to keep the vein open during setup and between injections of contrast.



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Technical Specifications

Flow Rate

Angio-Cardiac and Angio-Peripheral Modes
0.1 to 40.0 ml/sec, 0.1 to 999 ml/min

CT Mode

0.1 to 10.0 ml/sec, 0.1 to 600 ml/min

Pressure Limit

Angio-Cardiac and Angio-Peripheral Modes
75 to 1200 psi, 517 to 8273 kPa

CT Mode

75 to 300 psi, 517 to 2068 kPa

Syringe Sizes

150 ml/200 ml empty syringe
125, 100, 50 ml prefilled syringes

Fill Rate

Forward or Reverse: 0.2-25 ml/sec

Syringe Heater

37° C (98° F) nominal. Minimizes the loss of heat from preheated contrast.

Injection Delay

0 to 300 seconds

X-ray Delay

0 to 300 seconds

Scan Delay

0 to 300 seconds

Rate Rise

0 to 10 seconds

Duration (Angio Mode w/ Duration Selection)

1 to 999 seconds

Phase Delay

0 to 300 seconds

Number of Phases

1, 2 or 3-4 (available in all modes except Auto-Repeat and ECG)

Memory Capacity

Angiographic and CT modes each store up to 45 protocols

System Configurations

