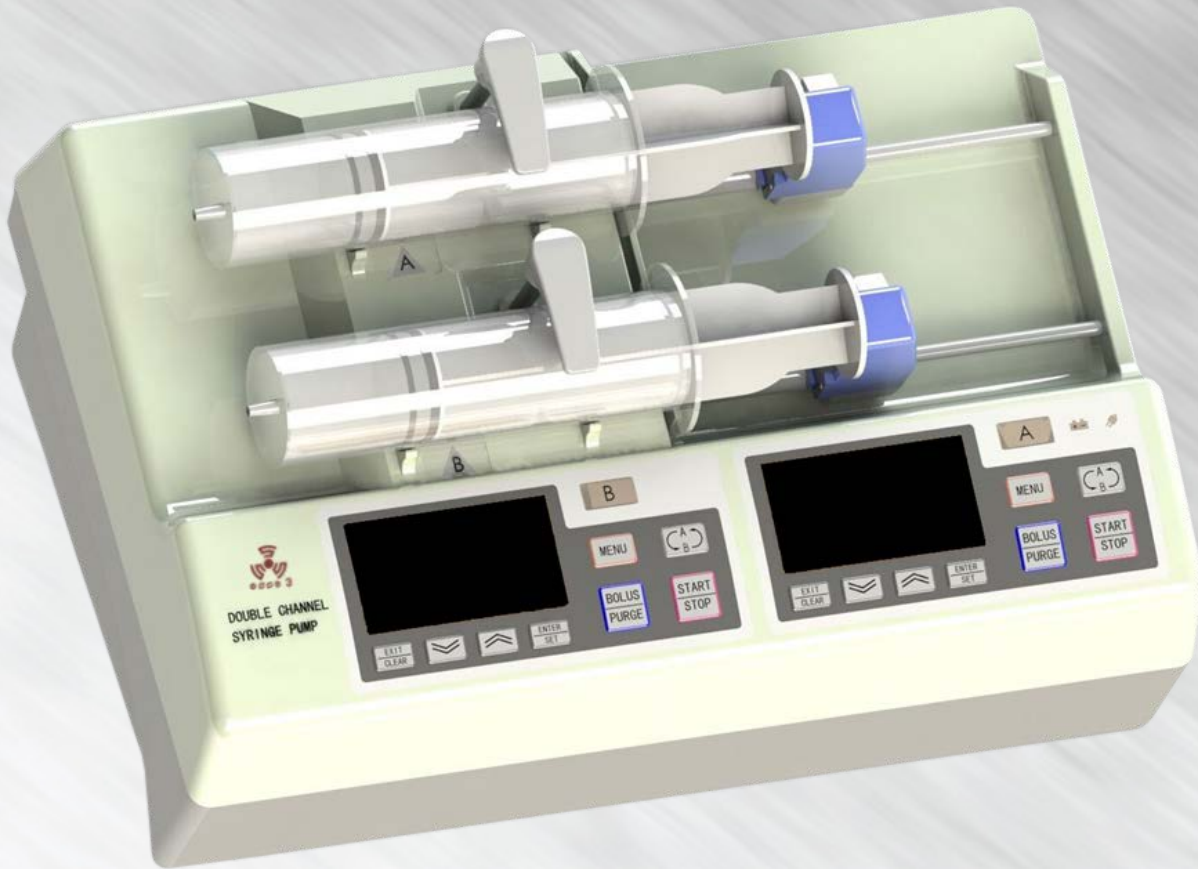




ESP-480D

Two independent channels syringe pump



INFUSION LINE

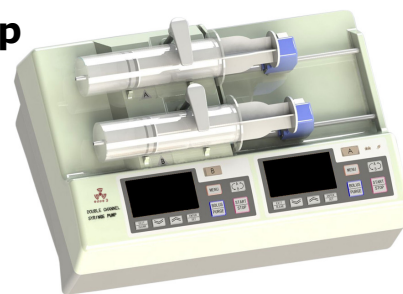


ESP-480D

Two independent ch. syringe pump

- It accepts and automatically senses the size of syringes from the major manufacturers.
- Automatic syringe calibration.
- Continuous loop function between two channels with independent programming on each channel.
- Wide-ranging flow rates and the capacity to infuse at low rates with larger syringes.
- Event log with 1000 history records.

Cod. **ESP-480D**



Number of channels	2
Syringes	1ml, 3ml, 5ml, 10ml, 20/30ml, 50/60ml, 100ml, of calibrated syringes
Display Range of Volume Infused	1 - 999ml
Increments	0.1ml or 1ml

Syringe Size	Flow Rate	Increment
1ml syringe	0.1ml/h-35ml/h	0.1ml/h
3ml syringe	0.1ml/h-100ml/h	0.1ml/h
5ml syringe	0.1ml/h-200ml/h	0.1 - 100ml/h, increment: 0.1ml/h -- 101 - 200ml/h, increment: 1ml/h
10ml syringe	0.1ml/h-300ml/h	0.1 - 100ml/h, increment: 0.1ml/h -- 101 - 300ml/h, increment: 1ml/h
20/30ml syringe	0.1ml/h-500ml/h	0.1 - 100ml/h, increment: 0.1ml/h -- 101 - 500ml/h, increment: 1ml/h
50/60ml syringe	0.1ml/h-1200ml/h	0.1 - 100ml/h, increment: 0.1ml/h -- 101 - 1200ml/h, increment: 1ml/h
100ml syringe	0.1ml/h-1500ml/h	0.1 - 100ml/h, increment: 0.1ml/h -- 101 - 1500ml/h, increment: 1ml/h

Volume Limit Range (Volume to be infused)	1 - 999ml
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Increments	1ml
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Syringe Size	Purge Rate
1ml syringe	28ml/h
3ml syringe	80ml/h
5ml syringe	160ml/h
10ml syringe	240ml/h
20/30ml syringe	400ml/h
50/60ml syringe	960ml/h
100ml syringe	1200ml/h

Bolus Rate Programmable from	0.1 to 1500ml/h based on syringe size
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Bolus Volume	1 to 999ml; Increment: 1ml
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Keep Vein Open (KVO) Rate	0.1 to 3ml, automatic adjusted
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Infusion Accuracy	Mechanical accuracy: $\pm 2\%$ Syringe accuracy: 2-3% depends on syringe brands The accuracy is not accessible when the flow rate is $\leq 1\text{ml/h}$
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Alarms	Syringe not loaded, Battery low, Start reminder, Battery depleted, Near empty, Mechanism error, Infusion completed, Syringe disengaged
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Alarm Volume	High, Medium, Low
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Display Type	2 separate OLED screens
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Communication Interfaces	RS232
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Operation Power	AC power: 100-240AC, 50/60Hz, 50VA DC power: 12VDC, 1.6A
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Power Consumption	$\leq 28\text{VA}$
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Battery Type	Built-in rechargeable sealed Ni-MH; 12VDC 2000mA
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Battery Life	Minimum 3 hours at 5 ml/h fully charged
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Operation Conditions	Ambient Temperature: 5 ~ 40°C
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Relative Humidity	$\leq 90\%$
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Atmospheric Pressure	700hPa - 1060hPa
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Net Weight	$\leq 3.6\text{ Kg}$
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Dimensions	l x b x h (mm) 335 x 230 x 160
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Waterproof Level	IPX1
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Type of Protection Against Electric Shock	Type CF
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Maximum Delivery Pressure	$>0.07\text{ Mpa} / 10.15\text{ psi}$ (with 50ml syringe)
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Occlusion Pressure	0.03 to 0.07 Mpa / 4.35 to 10.15 psi (with 50ml syringe)
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Occlusion Pressure Adjustment	Low, Medium, High -- Occlusion Alarm Trigger Time And Dose Infused (With 50ml syringe)
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Infusion Rate	Occlusion Alarm Pressure	Response Time	Bolus Rate
Min. 1 ml/h	Low (0.03 \pm 0.02 Mpa)	1h 45min	0.77ml
	Mid (0.05 \pm 0.02 Mpa)	3h 5min	0.62ml
	High (0.07 \pm 0.02 Mpa)	4h10min	0.50ml
Min. 5 ml/h	Low (0.03 \pm 0.02 Mpa)	18min	0.70ml
	Mid (0.05 \pm 0.02 Mpa)	31min	0.61ml
	High (0.07 \pm 0.02 Mpa)	41min	0.63ml



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