

# AMICA-PROBE

MICROWAVE APPLICATORS  
FOR THERMOABLATION



*FAST, SAFE,  
REPRODUCIBLE,  
TAILORED ABLATION*

*...and much more!*

## DESCRIZIONE DEL PRODOTTO

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**AMICA-PROBE** è un applicatore monouso per termoablazione a microonde.

- corpo in acciaio medicale con rivestimento anti-aderente, centimetraglia e indicatore di profondità scorrevole
- possibilità di introduzione diretta nei tessuti (accesso percutaneo) grazie alla punta metallica ad affilatura piramidale
- mini-choke (sistema brevettato dal Consiglio Nazionale delle Ricerche e in licenza esclusiva a H.S. HOSPITAL SERVICE S.p.A.) per il controllo delle microonde riflesse e della forma e delle dimensioni della figura di necrosi coagulativa indotta nei tessuti
- impugnatura ergonomica a "L" o dritta
- circuito idraulico e cablaggi integrati e pre-assemblati, completamente monouso
- termocoppia interna per la verifica del corretto funzionamento del circuito idraulico di raffreddamento
- memoria digitale per l'identificazione, la verifica d'integrità e l'auto-impostazione di opportuni parametri di lavoro e limiti di sicurezza
- disponibili modelli standard con cavi di lunghezza 2.5m, oppure con cavi staccabili (per la disconnessione temporanea del cavo di alimentazione dell'antenna e del circuito idraulico allo scopo di facilitarne le operazioni di posizionamento dell'applicatore, ad esempio nell'utilizzo sotto guida TAC)
- ottima visibilità della parte attiva sotto guida TAC o ultrasonografica
- possibilità di variare la performance coagulativa semplicemente variando la modalità di erogazione (manuale o pulsata), la potenza erogata e la durata del trattamento
- ablazioni fino a circa 5cm di diametro in 10 minuti con un singolo ago
- sfericità dell'ablazione (definita come rapporto tra gli assi corto e lungo dell'ablazione) pari in media a 0.7 in modalità continua e circa pari a 0.8 in modalità pulsata con un singolo ago
- possibilità di misurare la temperatura in un bersaglio profondo durante un trattamento con sensore ITC e lettore di temperatura.

## **PRODUCT DESCRIPTION**

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**AMICA-PROBE** is a disposable applicator for microwave thermoablation.

- *medical grade stainless steel cannula, with anti-sticking coating and a sliding depth stop*
- *pyramidal metallic tip to facilitate percutaneous access*
- *mini-choke (patented by the Italian National Research Council (CNR), exclusively licensed to H.S. HOSPITAL SERVICE S.p.A.) for reflected microwaves entrapment and elimination of back heating effects. Enhanced control over the coagulation pattern and size, enhanced treatment safety and repeatability*
- *ergonomic "L" shaped or straight handle*
- *totally disposable and pre-assembled hydraulic circuit and cables*
- *built-in thermocouple for cooling control*
- *embedded memory chip for probe identification, verification and self-setting of appropriate working parameters and safety limits*
- *different cabling solutions available: integrated 2.5m cables or detachable cables (for easier probe positioning during ct-guided procedures)*
- *excellent tip visibility under CT and US scanning*
- *adaptable coagulative performance through appropriate setting of the energy delivery mode (either manual or pulsed), treatment power and treatment duration*
- *up to 5cm ablation diameter in 10 minutes with a single probe*
- *average ablation sphericity (i.e. short to long ablation axis ratio) approximately equal to 0.7 in manual mode and about 0.8 in pulsed mode with a single probe*
- *optional temperature monitoring of the ablation site trough ITC sensor interconnected with a temperature meter.*

# AMICA-PROBE

Code*	Description	
APK14150T19V5	14G x 150mm	
APK14150T19V5-DC	11G x 150mm - detachable cable	
APK14200T19V5	14G x 200mm	
APK14200T19V5-DC	14G x 200mm - detachable cable	
APK14270T19V5	14G x 270mm	
APK14270T19V5-DC	14G x 270mm - detachable cable	
APK16150T19V5	16G x 150mm	
APK16150T19V5-DC	16G x 150mm - detachable cable	
APK16200T19V5	16G x 200mm	
APK16200T19V5-DC	16G x 200mm - detachable cable	
APK16270T19V5	16G x 270mm	
APK16270T19V5-DC	16G x 270mm - detachable cable	
APK17070T19V6	17G x 70mm – straight handle	
APK17100T19V6	17G x 100mm – straight handle	
APK17150T19V6	17G x 150mm – straight handle	
APK14200T19V6	14G x 200mm – straight handle	
APK14270T19V6	14G x 270mm – straight handle	
APK14400T15V6	14G x 400mm - straight handle	
APK16200T19V6	16G x 200mm – straight handle	
APK16270T19V6	16G x 270mm – straight handle	
APK16320T19V6	16G x 320mm – straight handle	



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**AMICA® PROBE COAGULATIVE PERFORMANCE  
IN EX-VIVO BOVINE LIVER AT ROOM TEMPERATURE:  
CONTINUOUS MW ENERGY DELIVERY MODE**

Ablation size (LxDxA)		TIME			
		3 min	5 min	10 min	
Power <sup>2</sup>	20 W	24x16x3 mm	27x20x5 mm	31x27x6 mm	
	40 W	29x20x4 mm	36x27x7 mm	48x36x9 mm	
	60 W	37x26x4 mm	46x33x7 mm	53x40x9 mm	
	80 W	47x32x8 mm	48x35x8 mm	63x44x9 mm	
		73x58x12 mm		73x58x12 mm	

Size of necrosis obtained on ex-vivo adult bovine liver, initially at room temperature (~20°C); all sizes were obtained using a single applicator in a single insertion. The actual coagulation performance in the clinical scenario may vary with respect to this ex-vivo chart due to a number of factors (e.g. blood perfusion, biological or physical peculiarities of the target tissues, prior or concurring local treatments, boundary conditions, etc.). Do not rely on the ex-vivo model alone for planning a microwave ablation treatment with HS AMICA. Real-time intra-operative monitoring of treatment progression through appropriate imaging techniques is mandatory.

<sup>1</sup>Manual.  
<sup>2</sup>Net power at probe end.



<b>20 Watt / 3 min</b>	<b>20 Watt / 5 min</b>  $\frac{L}{27\text{mm}} \frac{D}{20\text{mm}} \frac{A}{5\text{mm}}$	<b>20 Watt / 10 min</b>  $\frac{L}{31\text{mm}} \frac{D}{27\text{mm}} \frac{A}{6\text{mm}}$	<b>20 Watt / 15 min</b>  $\frac{L}{38\text{mm}} \frac{D}{33\text{mm}} \frac{A}{8\text{mm}}$
<b>40 Watt / 3 min</b>	<b>40 Watt / 5 min</b>  $\frac{L}{36\text{mm}} \frac{D}{27\text{mm}} \frac{A}{7\text{mm}}$	<b>40 Watt / 10 min</b>  $\frac{L}{48\text{mm}} \frac{D}{36\text{mm}} \frac{A}{9\text{mm}}$	<b>40 Watt / 15 min</b>  $\frac{L}{50\text{mm}} \frac{D}{42\text{mm}} \frac{A}{9\text{mm}}$
<b>60 Watt / 3 min</b>	<b>60 Watt / 5 min</b>  $\frac{L}{46\text{mm}} \frac{D}{33\text{mm}} \frac{A}{7\text{mm}}$	<b>60 Watt / 10 min</b>  $\frac{L}{53\text{mm}} \frac{D}{40\text{mm}} \frac{A}{9\text{mm}}$	<b>60 Watt / 15 min</b>  $\frac{L}{67\text{mm}} \frac{D}{48\text{mm}} \frac{A}{12\text{mm}}$
<b>80 Watt / 3 min</b>	<b>80 Watt / 5 min</b>  $\frac{L}{48\text{mm}} \frac{D}{35\text{mm}} \frac{A}{8\text{mm}}$	<b>80 Watt / 10 min</b>  $\frac{L}{63\text{mm}} \frac{D}{44\text{mm}} \frac{A}{9\text{mm}}$	<b>80 Watt / 15 min</b>  $\frac{L}{73\text{mm}} \frac{D}{58\text{mm}} \frac{A}{12\text{mm}}$



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# AMICA® PROBE COAGULATIVE PERFORMANCE IN EX-VIVO BOVINE LIVER AT ROOM TEMPERATURE: **PULSED MW ENERGY DELIVERY MODE**

Ablation size (LxDxA)	TIME		
	3 min	5 min	10 min
Power <sup>1</sup>	60 W	28x21x4 mm	29x24x5 mm
	100 W	35x27x4 mm	39x31x5 mm
	140 W <sup>2</sup>	39x29x6 mm	45x34x6 mm
	180 W <sup>3</sup>	46x30x6 mm	53x40x9 mm
			66x47x11 mm

Performance chart applicable to 14G AMICA-PROBE models only, cooled using pre-refrigerated saline solution ( $\leq 5^{\circ}\text{C}$ ) flowing at approximately 100ml/min. Size of necrosis obtained on ex-vivo adult bovine liver, initially at room temperature ( $\sim 20^{\circ}\text{C}$ ); all sizes were obtained using a single applicator in a single insertion. The actual coagulation performance in the clinical scenario may vary with respect to this ex-vivo chart due to a number of factors (e.g. blood perfusion, biological or physical peculiarities of the target tissues, prior or concurring local treatments, boundary conditions, etc.). Do not rely on the ex-vivo model alone for planning a microwave ablation treatment with HS AMICA. Real-time intra-operative monitoring of treatment progression through appropriate imaging techniques is mandatory.

<sup>1</sup>Net power at the probe end.

<sup>2</sup>Only using AMICA-GEN models AMH-1.2 and AMH-3.2.

<sup>3</sup>Only using AMICA-GEN models AMH-1.3 and AMH-3.3

L = Necrosis length in the probe axis direction  
D = Necrosis diameter perpendicular to the probe  
A = Necrosis extension beyond the probe tip

<b>60 Watt / 3 min</b>	<b>60 Watt / 5 min</b>	<b>60 Watt / 10 min</b>
 <b>L D A</b> 28mm 21mm 4mm	 <b>L D A</b> 29mm 24mm 5mm	 <b>L D A</b> 35mm 29mm 6mm
<b>100 Watt / 3 min</b>	<b>100 Watt / 5 min</b>	<b>100 Watt / 10 min</b>
 <b>L D A</b> 35mm 27mm 4mm	 <b>L D A</b> 39mm 31mm 5mm	 <b>L D A</b> 44mm 38mm 6mm
<b>140 Watt / 3 min</b>	<b>140 Watt / 5 min</b>	<b>140 Watt / 10 min</b>
 <b>L D A</b> 39mm 29mm 6mm	 <b>L D A</b> 45mm 34mm 6mm	 <b>L D A</b> 53mm 43mm 6mm
<b>180 Watt / 3 min</b>	<b>180 Watt / 5 min</b>	<b>180 Watt / 10 min</b>
 <b>L D A</b> 46mm 30mm 6mm	 <b>L D A</b> 53mm 40mm 9mm	 <b>L D A</b> 66mm 47mm 11mm