

NEBULIZERS for ICP



Glass Expansion

U-Series Glass Concentric Nebulizer



including UniFit sample connector which slides easily over the sample arm and EzyLok gas quick connector or direct connection line for Argon supply

Benefits of the U-Series nebulizer:

- :: **Resists blockage:** The sample channel is uniform from the entry point to the tip, therefore there are no obstacles where particulates are trapped.
- :: **Fast washout:** No dead volumes where sample could be trapped, therefore fast washout and high sample throughput is achieved.
- :: **Simple to use:** Our proprietary UniFit connector slides easily over the sample arm and creates an excellent seal.
- :: **Easy cleaning:** Use the Eluo cleaning tool for easily, safe and fast unclogging of your nebulizer

Benefits of direct connection for Argon line

- Inert, metal-free argon connection made of PEEK
- Leak free ratchet fitting
- Easy to connect, instrument specific argon line
- Separately replaceable ferrules, fittings, connector and gas line

All concentric glass nebulizers made at Glass Expansion use the unique VitriCone construction; the sample channel is made of a heavy glass capillary (borosilicate glass) which is machined to very tight tolerances.

- The sample channel is guaranteed uniform and thus resistant to clogging.
- The robust precision machined capillary resists vibration and delivers the best possible precision.
- The industry's tightest tolerances ensure that each nebulizer will perform to the same high standards as the previous one.

AR xx - yy - ZZ nnn E X

AR ...

ARG - ... - ...

... XX ...

- yy ...

nnn ...

E

- ZZ ...

UC =

UM =

US =

USS =

CV =

DM =

CP =

PFA =

... - ... - ... X

L =

T =

Q =

X =

Understanding Nebulizer Part Numbers

Argon gas operated nebulizer

Argon gas rate at 30psig (2,1bar)

(NL = norm liter at 1013mbar)

nominal Argon pressure in psig (30, 35, 40...)

Argon flow (NL/min) at nominal pressure (1013mbar)

aspirated uptake at nominal pressure, in mL/min

with EzyLok gas connector (Standard with ARG style)

Nebulizer model type:

Conikal nebulizer fitted with UniFit

MicroMist nebulizer fitted with UniFit

Slurry nebulizer fitted with UniFit

SeaSpray nebulizer fitted with UniFit

VeeSpray V-groove nebulizer made of ceramics

DuraMist concentric PEEK nebulizer

PolyCon concentric Polyimide nebulizer

OpalMist concentric PFA nebulizer

non standard sample tube size

L = 0.25mm ID x 1.3mm OD x 700mm long (formerly designated N)

T = 0.75mm ID x 1.3mm OD x 2000mm long

Q = 0.25mm ID x 1.6mm OD x 700mm long





X = 0.50mm ID x 1.6mm OD x 700mm long

NEBULIZERS concentric

Product List 2016







U-Series glass concentric nebulizer
uniform sample channel with tight tolerances
highly accurate borosilicate glass construction

		sample uptake (2,1bar)	GE ID- no.	Part no.
Conikal for routine aqueous and organic applications				
 <p>:: TDS tolerance up to 5% :: particulates tolerance up to 75µm</p>	■ low RSD's due to highly accurate manufacturing			
	UniFit with 0,7m capillary 0,50 x 1,3mm	1mL/min	ARG-07-UC1	504 - 77
	UniFit with 0,7m capillary 0,50 x 1,3mm	1mL/min	ARG-1-UC1	504 - 72
	UniFit with 0,7m capillary 0,25 x 1,3mm	1mL/min	ARG-1-UC1L	504 - 724
	UniFit with 2 m capillary 0,75 x 1,3mm	1mL/min	ARG-1-UC1T	504 - 727
	UniFit with 0,7m capillary 0,75 x 1,3mm	2mL/min	ARG-07-UC2	504 - 80
	UniFit with 0,7m capillary 0,75 x 1,3mm	2mL/min	ARG-1-UC2	504 - 78
MicroMist for limited sample volume				
 <p>:: TDS tolerance up to 1% :: Low RSD's due to highly accurate construction</p>	■ high performance for limited sample volumes			
	UniFit with 0,25 x 1,3mm capillary	50µL/min	ARG-07-UM005	504 - 50
	UniFit with 0,25 x 1,3mm capillary	50µL/min	ARG-1-UM005	504 - 60
	UniFit with 0,25 x 1,3mm capillary	100µL/min	ARG-07-UM01	504 - 53
	UniFit with 0,25 x 1,3mm capillary	100µL/min	ARG-1-UM01	504 - 61
	UniFit with 0,50 x 1,3mm capillary	200µL/min	ARG-07-UM02	504 - 52
	UniFit with 0,50 x 1,3mm capillary	200µL/min	ARG-1-UM02	504 - 62
	UniFit with 0,50 x 1,3mm capillary	400µL/min	ARG-1-UM04	504 - 64
	UniFit with 0,50 x 1,6mm capillary	400µL/min	ARG-1-UM04X	504 - 66
	UniFit with 0,50 x 1,3mm capillary	600µL/min	ARG-07-UM06	504 - 56
SeaSpray for samples with very high total dissolved solids				
 <p>:: TDS tolerance up to ~20% :: particulates tolerance up to 75µm</p>	■ significant sensitivity improvements and high tolerance to salts and particulates combined with low RSD's			
	UniFit with 0,25 x 1,6mm capillary	0,1mL/min	ARG-1-USS01Q	504 - 31
	UniFit with 0,25 x 1,3mm capillary	0,1mL/min	ARG-1-USS01	504 - 41
	UniFit with 0,50 x 1,3mm capillary	0,2mL/min	ARG-07-USS02	504 - 36
	UniFit with 0,50 x 1,3mm capillary	0,4mL/min	ARG-07-USS04	504 - 39
	UniFit with 0,50 x 1,6mm capillary	0,4mL/min	ARG-1-USS04	504 - 42
	UniFit with 0,50 x 1,3mm capillary	1mL/min	ARG-1-USS1	504 - 45
	UniFit with 0,75 x 1,3mm capillary	2mL/min	ARG-07-USS2	504 - 40
	UniFit with 0,75 x 1,3mm capillary	2mL/min	ARG-1-USS2	504 - 46
	UniFit 0,75 x 1,3mm x 1500mm capil.	2mL/min	ARG-1-USS2S	504 - 47
Slurry for slurries or suspensions				
 <p>:: TDS tolerance up to ~1% :: particulates tolerance up to 150µm</p>	■ for applications requiring the aspiration of slurries or suspensions			
	■ wider capillary bore reduces the possibility of particle blockage			
	■ natural liquid uptake of 4mL/min but operates best 1,5...2,5mL/min			
	UniFit with 0,75 x 1,3mm capillary	4mL/min	ARG-07-US6	504 - 26
	UniFit with 0,75 x 1,3mm capillary	4mL/min	ARG-1-US6	504 - 28
	UniFit with 0,50 x 1,6mm capillary	4mL/min	ARG-1-US6X	504 - 282

Nebulizers with special gas rate, sample uptake, gas port or capillary dimension

on request

	sample uptake at 30 psig (2,1bar)	sample tubing OD 1,27 x ID	GE ID- no.	Part no.
PolyCon for limited sample volumina and ultra pure solutions				
 :: Physical reproducibility ~ 2% :: Particulates tolerance up to 75µm depending on uptake :: TDS tolerance ~5% :: Low RSD's due to concentric design	■ for high precision analysis involving samples digested in HF ■ favourite in the semi conductor industry ■ enables analysts to produce accurate calibration curves (r = 0.9998) for low-ppt levels of Na, K, Fe and Ca in 30% hydrogen peroxide			
	0,05 mL/min	0,25mm	ARG-1-CP005	505 - 50
	0,1 mL/min	0,25mm	ARG-1-CP01	505 - 51
	0,2 mL/min	0,50mm	ARG-1-CP02	505 - 52
	0,4 mL/min	0,50mm	ARG-1-CP04	505 - 64
 :: Strong and consistent self-aspiration :: High tolerance to particulates, up to 75µm depending on uptake :: TDS tolerance typically up to 30% :: Low RSD's due to concentric design	1 mL/min	0,75mm	ARG-1-CP1S	505 - 70
	2 mL/min	0,75mm	ARG-1-CP2	505 - 71
	0,1 mL/min	0,25mm	ARG-07-PFA01	506 - 51
	0,1 mL/min	0,25mm	ARG-1-PFA01	506 - 61
	0,2 mL/min	0,50mm	ARG-07-PFA02	506 - 52
 :: Strong and consistent self-aspiration :: High tolerance to particulates up to 75µm :: TDS tolerance typically up to 30% :: Low RSD's due to concentric design	0,4 mL/min	0,50mm	ARG-07-PFA04	506 - 54
	0,6 mL/min	0,75mm	ARG-07-PFA06	506 - 78
	1 mL/min	0,75mm	ARG-1-PFA1S	506 - 70
	2 mL/min	0,75mm	ARG-07-PFA2	506 - 80
	0,4 mL/min	0,50mm	ARG-1-DM04	505 - 24
 :: must be pumped (no self aspiration) :: particulates tolerance up to 300µm :: TDS tolerance up to 30%	0,4 mL/min	0,50mm	ARG-07-DM04	505 - 25
	1 mL/min	0,50mm	ARG-1-DM1	505 - 26
	1 mL/min	0,50mm	ARG-07-DM1	505 - 27
	pump delivery 1,5 ... 3 mL/min	0,75mm	ARG-07-CV6	516 - 30
	pump delivery 1,5 ... 3 mL/min	0,75mm	ARG-1-CV6	516 - 31
Ceramic VeeSpray for samples with highest particle and TDS loads				
■ ideal for HF analyses ■ most robust and abrasion resistant nebulizer ■ the same 6mm diameter as the concentric nebulizers				

Complete product line and prices are listed on our website www.ahf.de

	Description	GE ID- no.	Part no.
Tubings			
Sample capillaries (pack of 10m)			
	1,27mm x 0,25mm PTFE	STT-025	527 - 02
	1,27mm x 0,50mm PTFE	STT-050	527 - 05
	1,27mm x 0,75mm PTFE	STT-075	527 - 07
	1/16"(1,55mm) x 0,25mm PTFE	STT-16-25	526 - 02
	1/16"(1,55mm) x 0,50mm PTFE	STT-16-50	526 - 05
	1/16"(1,55mm) x 0,75mm PTFE	STT-16-75	526 - 07
	1/16"(1,55mm) x 0,18mm PFA	PFA-16-18	526 - 61
UniFit			
Sample tube connectors for U-Series (pack of 10pcs.)			
	■ reduce washout times		
	■ eliminate dead volume		
	1,3mm x 0,25mm x 700mm	NFT-025	531 - 13
	1,3mm x 0,50mm x 700mm	NFT-050	531 - 14
	1,3mm x 0,75mm x 700mm	NFT-075	531 - 15
	1/16"(1,55mm) x 0,18mm x 700mm	NFT-16-18	531 - 11
	1/16"(1,55mm) x 0,25mm x 1500mm	NFTS-16-25	531 - 26
	1/16"(1,55mm) x 0,25mm x 700mm	NFT-16-25	531 - 16
	1/16"(1,55mm) x 0,50mm x 700mm	NFT-16-50	531 - 17
	special ID and length of capillary		on request
EzyLok			
Argon gas connector			
	■ eliminates bonding of argon supply tube to nebulizer side arm		
	■ can be used with 4mm nylon tubing or standard 6mm soft tubing		
	EzyLok kit - for CGN's with EzyLok side arms	EL-1	522 - 11
	EzyLok connector for 4mm tubing	QSM-4	522 - 14
	EzyLok 6mm hose adaptor (per pc.)	70-808-0735	522 - 16
DC			
Argon gas direct connection			
	■ Inert metal-free argon connector with instrument specific argon line		
	■ Use type number as prefix to order nebulizer with DC connector		
	Direct connection for Varian Vista/700-ES; MP-AES und Leeman	Type A11	522 - 611
	Direct connection for Agilent 77/78/79/8800	Type A13	522 - 613
	Direct connection for Agilent 5100 and Elegra	Type A14	522 - 614
	Direct connection for all Spectro ICP and PE Optima	Type A21	522 - 621
	Direct connection for Thermo iCAP 6000/7000/Q & X-Series	Type A31	522 - 631
	Fittings for DC ratchet		522 - 60
	further instrument-specific connections and spare parts available		
ELUO			
Nebulizer cleaning tool			
	■ maintain nebulizer and prolong lifetime		
	■ restore nebulizer to optimum performance		
	■ safe, efficient and convenient cleaning		
	■ unblock of annoying particles and contaminants		
	ELUO for glass nebulizer	70-ELUO	539 - 56
	ELUO for old HF nebulizer (<2010)	70-ELUO-OP	539 - 57
	ELUO for new HF nebulizer (>2011)	70-ELUO-OPD	539 - 58