

Unique Novel C30 HPLC Columns

Develosil

RPAQUEOUS (pH3 - pH8)

RPAQUEOUS-AR (pH2 - pH7)

USP: L62 (All Develosil C30 phases are listed in L62.)

(Except for Develosil RPFULLERENE.)

Develosil C30-UG, RPAQUEOUS, Combi-RP, RPFULLERENE, RPAQUEOUS-AR

Develosil C30 phases are suitable not only for polar compounds such as sugars and nucleotides, but also for fat-soluble compounds such as tocopherols and carotenoids.

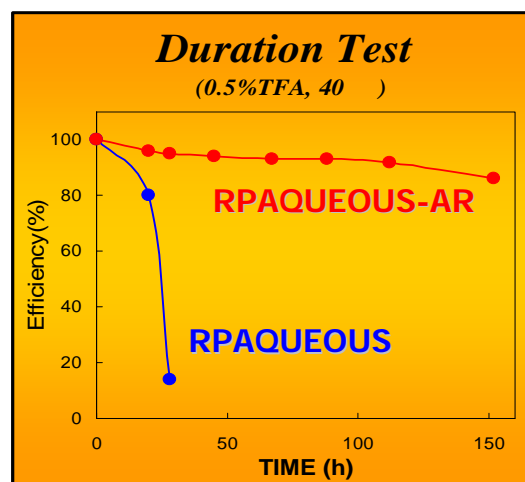
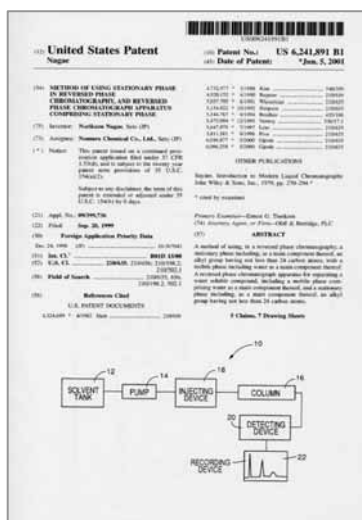
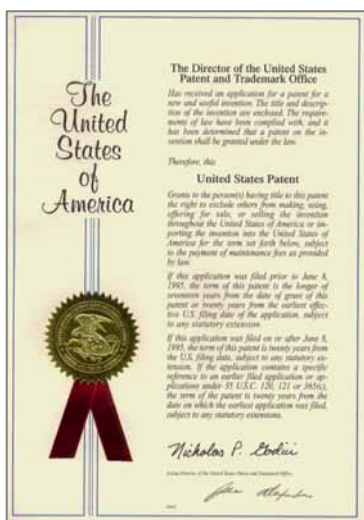
Characteristic of Develosil C30 phases

	Particle size	Ligand	End-capping (TMS)	Carbon content (%)	Silica		
					Surface area (m ² /g)	Pore volume (mL/g)	Pore diameter (nm)
C30-UG	3 μm, 5 μm	- Si (CH ₃) ₂ C ₃₀ H ₆₁	Double	18	300	1.15	14
RPAQUEOUS	5 μm	- Si (CH ₃) ₂ C ₃₀ H ₆₁	Double	18	300	1.15	14
RPAQUEOUS-AR	3 μm, 5 μm	≡ Si C ₃₀ H ₆₁	Double	18	300	1.15	14
Combi-RP	3 μm, 5 μm	- Si (CH ₃) ₂ C ₃₀ H ₆₁	Double	18	300	1.15	14

C30-UG, RPAQUEOUS and Combi-RP are completely the same materials. Only names are different each other.

RPAQUEOUS-AR is more stable than the other C30 phases under acidic conditions because of trifunctional bonded phase.

United states Patent No. 6,241,891

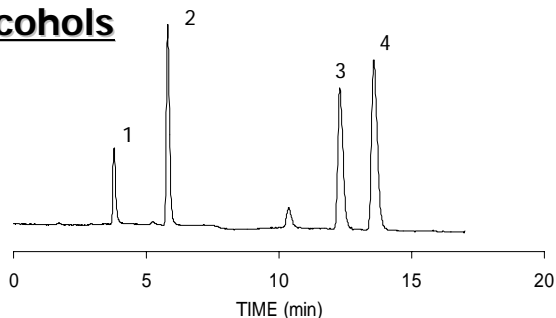


This patent belongs to Nomura Chemical Co., Ltd..

Nomura Chemical Co., Ltd.

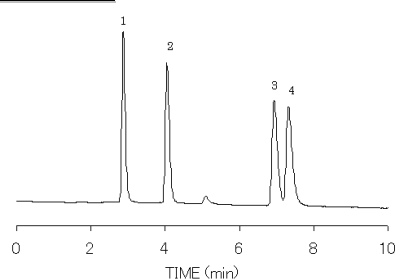
Applications

Alcohols



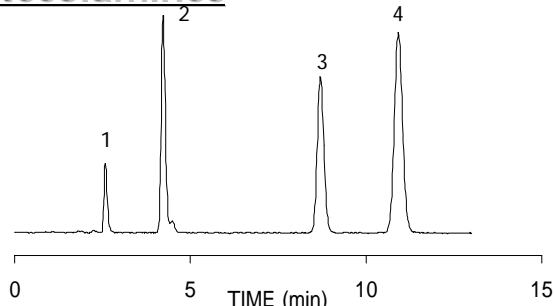
Column: **Develosil RPAQUEOUS** (C30-UG-5) 250 x 4.6 mm
 Mobile phase: Water
 Flow rate: 1.0 mL/min
 Temperature: 40 °C
 Detection: RI
 Sample: 1 = Methanol, 2 = Ethanol 1%, 3 = 1-Propanol 1%, 4 = 2-Propanol 1%

Amino acids



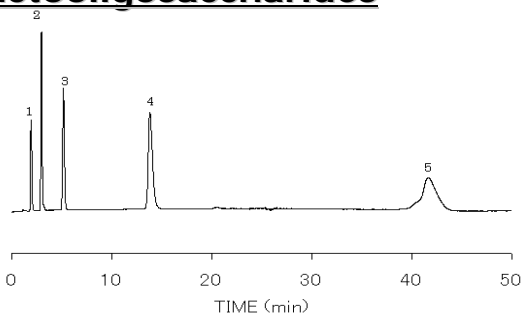
Column: **Develosil RPAQUEOUS** (C30-UG-5) 250 x 4.6 mm
 Mobile phase: Water
 Flow rate: 1.0 mL/min
 Temperature: 40 °C
 Detection: RI
 Sample: 1 = alanine 0.2%, 2 = valine 0.2%, 3 = isoleucine 0.2%, 4 = leucine 0.2%

Catecholamines



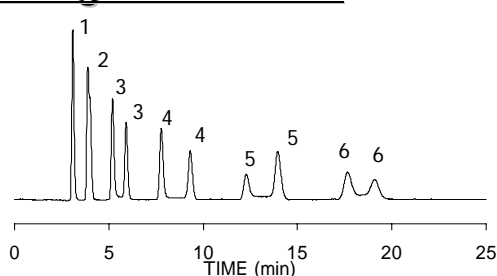
Column: **Develosil RPAQUEOUS** (C30-UG-5) 150 x 4.6 mm
 Mobile phase: 0.1M KH₂PO₄, (pH2.6) with H₃PO₄
 Flow rate: 1.0 mL/min
 Temperature: 30 °C
 Detection: UV at 210nm
 Sample: 1 = Norepinephrine, 2 = Epinephrine, 3 = Dopamine, 4 = L - DOPA

Fructooligosaccharides



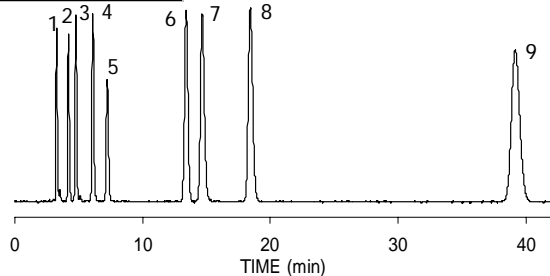
Column: **Develosil RPAQUEOUS** (C30-UG-5) 250 x 4.6 mm
 Mobile phase: Water
 Flow rate: 1.0 mL/min
 Temperature: 30 °C
 Detection: RI
 Sample: 1 = Glucose 0.04%, 2 = Saccharose 0.1%, 3 = 1-Kestose 0.1%, 4 = nystose 0.2%, 5 = 1F-Fructofuranosylnystose 0.4%

Maltooligosaccharides



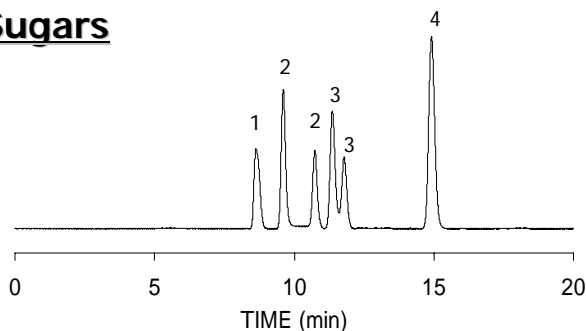
Column: **Develosil RPAQUEOUS** (C30-UG-5) 250 x 4.6 mm
 Mobile phase: Water
 Flow rate: 1.0 mL/min
 Temperature: 30 °C
 Detection: RI
 Sample: 1 = Glucose 0.07%, 2 = Maltose 0.1%, 3 = Maltotriose 0.1%, 4 = Maltotetraose 0.1%, 5 = Maltopentaose 0.1%, 6 = Maltohexaose 0.1%

Nucleotides



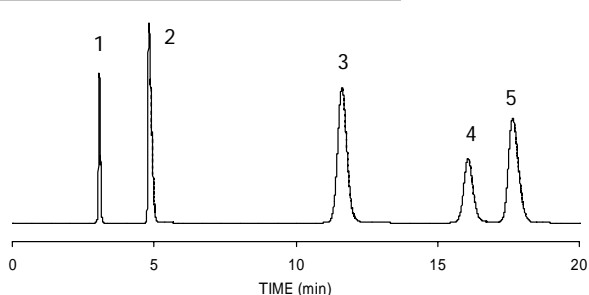
Column: **Develosil RPAQUEOUS** (C30-UG-5) 250 x 4.6 mm
 Mobile phase: 0.1M K₂HPO₄ with KOH, (pH6.0)
 Flow rate: 1.0 mL/min
 Temperature: 30 °C
 Detection: UV at 260nm
 Sample: 1 = 5'-CTP, 2 = 5'-CDP, 3 = 5'-CMP, 4 = 5'-GTP, 5 = 5'-GDP, 6 = 5'-GMP, 7 = 5'-ATP, 8 = 5'-ADP, 9 = 5'-AMP

Sugars



Column: **Develosil RPAQUEOUS** (C30-UG-5) 250 x 4.6 mm + 250 x 4.6 mm
 Mobile phase: water
 Flow rate: 0.7 mL/min
 Temperature: 25 °C
 Detection: RI
 Sample: 1 = Glucose, 2 = Lactose, 3 = Maltose, 4 = Saccharose

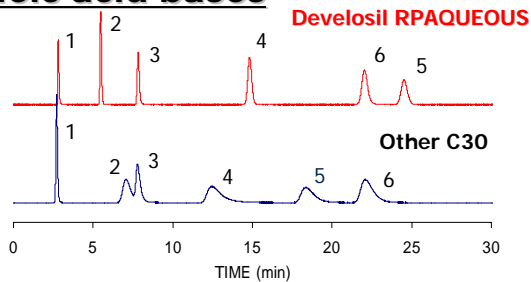
Water-soluble vitamins



Column: **Develosil RPAQUEOUS** (C30-UG-5) 150 x 4.6 mm
 Mobile phase: 50 mM sodium phosphate (pH6.9)
 Flow rate: 1.0 mL/min
 Temperature: 30 °C
 Detection: UV at 254 nm
 Sample: 1 = Orotic acid, 2 = Nicotinic acid, 3 = Pyridoxal HCl, 4 = Pyridoxine HCl, 5 = Nicotinamide

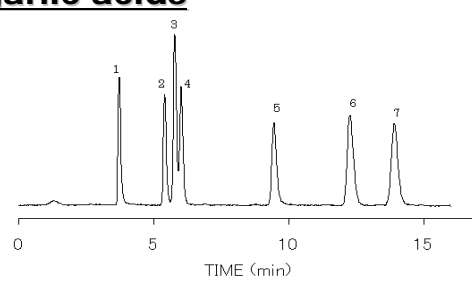
Applications

Nucleic acid bases



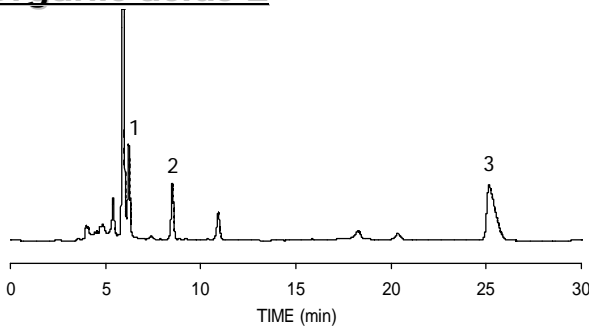
Column: **Develosil RPAQUEOS** (C30-UG-5) 250 x 4.6 mm and other C30 phase 250 x 4.6 mm
 Mobile phase: 10 mM NaH_2PO_4 with H_3PO_4 (pH7.0)
 Flow rate: 1.0 mL/min
 Temperature: 30 °C
 Detection: UV at 254 nm
 Sample: 1 = Sodium Nitrite, 2 = Cytosine, 3 = Uracil, 4 = Cytidine, 5 = Uridine, 6 = Thymine

Organic acids



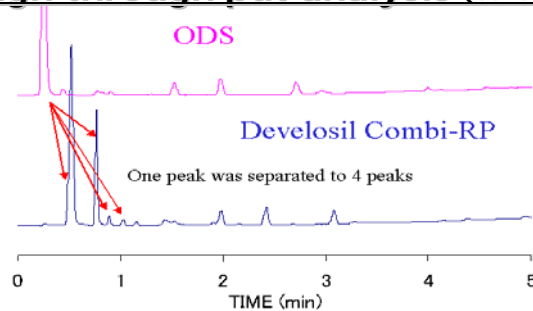
Column: **Develosil RPAQUEOUS** (C30-UG-5) 250 x 4.6 mm
 Mobile phase: 0.05M $\text{NH}_4\text{H}_2\text{PO}_4$ with H_3PO_4 (pH2.4)
 Flow rate: 1.0 mL/min
 Temperature: 30 °C
 Detection: UV at 210 nm
 Sample: 1 = Fomic acid, 2 = Malonic acid, 3 = Lactic acid, 4 = Acetic acid
 5 = Maleic acid, 6 = Citric acid, 7 = Fumaric acid

Organic acids 2



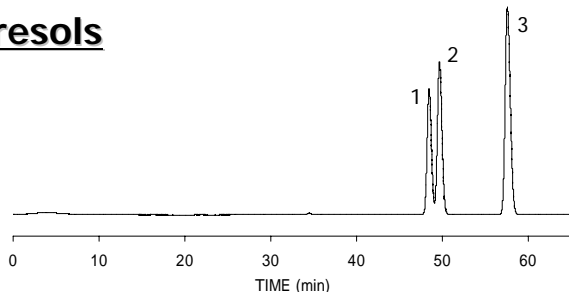
Column: **Develosil RPAQUEOUS-AR-3** 250 x 4.6 mm
 Mobile phase: 0.1% H_3PO_4
 Flow rate: 0.6 mL/min
 Temperature: 20 °C
 Detection: UV at 210 nm
 Sample: Organic acids extracted from Kiwi fruit
 1 = Quinic acid, 2 = Malic acid, 3 = Citric acid

High through put analysis (beverage)



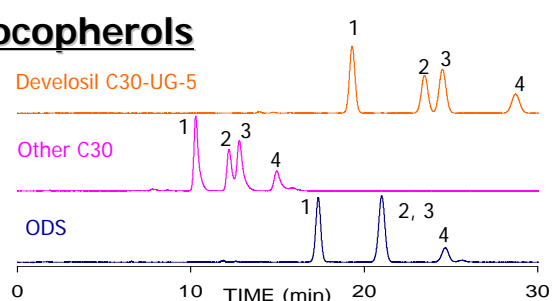
Column: **Develosil Combi-RP-5** 50 x 4.6 mm, ODS 50 x 4.6 mm
 Mobile phase: A) 0.1% TFA in water, B) Acetonitrile
 Combi-RP: %B 0 to 100% in 5min
 ODS: %B 10% to 100% in 5min
 Flow rate: 3.0 mL/min
 Temperature: 30 °C
 Detection: UV at 254nm

Cresols



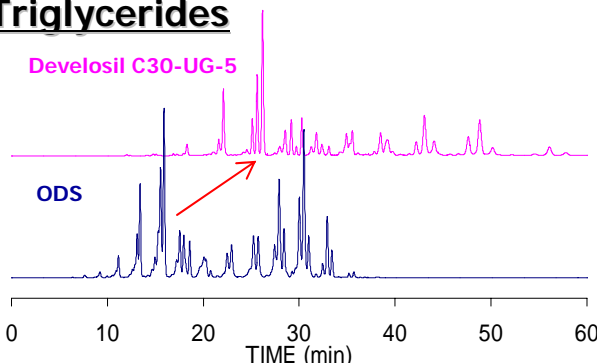
Column: **Develosil RPAQUEOUS** (C30-UG-5) 250 x 4.6 mm x 2
 Mobile phase: THF / Methanol / Water = 10 / 45 / 45
 Flow rate: 0.4 mL/min
 Pressure: 20 MPa
 Temperature: 15 °C
 Detection: UV at 254 nm
 Sample: 1 = *p*-Cresol, 2 = *m*-Cresol, 3 = *o*-Cresol

Tocopherols



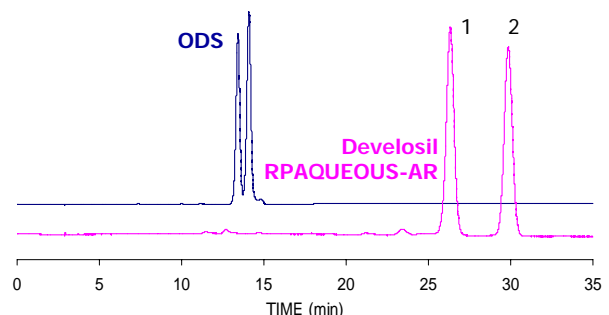
Column: **Develosil RPAQUEOUS** (C30-UG-5) 250 x 4.6 mm, other C30 250 x 4.6 mm, ODS 250 x 4.6 mm
 Mobile phase: Methanol / Water = 97 / 3
 Flow rate: 1.0 mL/min
 Temperature: 30 °C
 Detection: UV at 295 nm
 Sample: Tocopherols, 1 = Delta, 2 = Gamma, 3 = Beta, 4 = Alpha

Triglycerides



Column: **Develosil RPAQUEOUS** (C30-UG-5) 250 x 4.6 mm, ODS 250 x 4.6 mm
 Mobile phase: A) Acetonitrile, B) Acetone
 %B 30% to 70% in 60 min
 Flow rate: 1.0 mL/min
 Temperature: 40 °C
 Detection: ELSD
 Sample: Milk

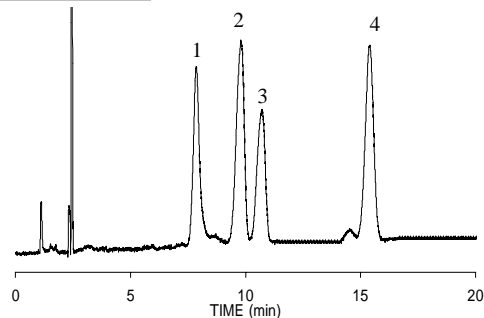
α -Carotene and β -Carotene



Column: **Develosil RPAQUEOUS-AR-5** 250 x 4.6 mm, ODS 250 x 4.6 mm
 Mobile phase: Acetonitrile / Chloroform = 8 / 2
 Flow rate: 1.0 mL/min
 Temperature: 30 °C
 Detection: UV at 450 nm
 Sample: 1 = α -carotene, 2 = β -carotene

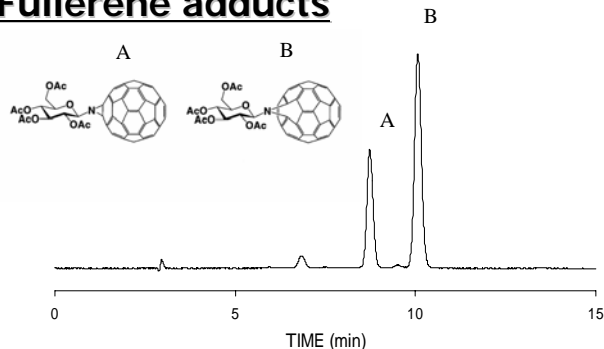
Applications

Carotenoids



Column: **Develosil RPAQUEOUS** (C30-UG-5) 250 x 4.6 mm
 Mobile phase: Methanol / Acetonitrile = 50 / 50 + 0.05% Triethylamine
 Flow rate: 1.2 mL/min
 Temperature: 30 °C
 Detection: VIS at 480 nm
 Sample: 1 = Astaxanthin, 2 = Lutein, 3 = Zeaxanthin, 4 = Canthaxanthin

Fullerene adducts



Column: **Develosil RPFULLERNE** (C30-UG-5) 250 x 4.6 mm
 Mobile phase: Toluene / Acetonitrile = 4 / 6
 Flow rate: 1.0 mL/min
 Temperature: 30 °C
 Detection: UV at 335 nm
 Sample: Cycloadduct of Per-o-Acetyl Glycosyl Azides to (60)Fullerene

Fullerene adducts (which can't be separated by an exclusive column for fullerene separation) can be separated by Develosil C30 phase.

Ordering information

Dimension of Develosil column, length: 10 mm to 250 mm, inner diameter: 1.0 mm to 28 mm

Dimension	Part Number						
	RPAQUEOUS	RPAQUEOUS-AR		C30-UG		Combi-RP	
	5 um	3 um	5 um	3 um	5 um	3 um	5 um
150 x 1.0 mm	RPAQ510150W	RPAP310150W	RPAP510150W	UG17310150W	UG17510150W		
150 x 1.5 mm	RPAQ515150W	RPAP315150W	RPAP515150W	UG17315150W	UG17515150W		
10 x 1.5 mm (guard)	RPAQ515010W				UG17515010W		
35 x 2.0 mm	RPAQ520035W	RPAP320035W	RPAP520035W	UG17320035W	UG17520035W	COMB320035W	COMB520035W
50 x 2.0 mm	RPAQ520050W	RPAP320050W	RPAP520050W	UG17320050W	UG17520050W	COMB320050W	COMB520050W
100 x 2.0 mm	RPAQ520100W	RPAP320100W	RPAP520100W	UG17320100W	UG17520100W		
150 x 2.0 mm	RPAQ520150W	RPAP320150W	RPAP520150W	UG17320150W	UG17520150W		
250 x 2.0 mm	RPAQ520250W		RPAP520250W	UG17320250W	UG17520250W		
10 x 4.0 mm (guard)	RPAQ540010W				UG17540010W		
35 x 4.6 mm	RPAQ546035W	RPAP346035W	RPAP546035W	UG17346035W	UG17546035W	COMB346035W	COMB546035W
50 x 4.6 mm	RPAQ546050W	RPAP346050W	RPAP546050W	UG17346050W	UG17546050W	COMB346050W	COMB546050W
100 x 4.6 mm	RPAQ546100W	RPAP346100W	RPAP546100W	UG17346100W	UG17546100W		
150 x 4.6 mm	RPAQ546150W	RPAP346150W	RPAP546150W	UG17346150W	UG17546150W		
250 x 4.6 mm	RPAQ546250W		RPAP546250W	UG17346250W	UG17546250W		
100 x 6.0 mm	RPAQ560100W	RPAP360100W	RPAP560100W	UG17360100W	UG17560100W		
150 x 6.0 mm	RPAQ560150W	RPAP360150W	RPAP560150W	UG17360150W	UG17560150W		
250 x 6.0 mm	RPAQ560250W		RPAP560250W		UG17560250W		
10 x 8.0 mm (guard)	RPAQ580010W		RPAP580010W		UG17580010W		
250 x 8.0 mm	RPAQ580250W		RPAP580250W		UG17580250W		
250 x 10.0 mm	RPAQ5P1250W		RPAP5P1250W		UG175P1250W		
50 x 20 mm	RPAQ5P2050W		RPAP5P2050W		UG175P2050W		COMB5P2050W
100 x 20 mm	RPAQ5P2100W		RPAP5P2100W		UG175P2100W		COMB5P2100W
150 x 20 mm	RPAQ5P2150W		RPAP5P2150W		UG175P2150W		COMB5P2150W
250 x 20 mm	RPAQ5P2250W		RPAP5P2250W		UG175P2250W		COMB5P2250W
100 x 28 mm							COMB5P3100W
150 x 28 mm							COMB5P3150W
250 x 28 mm	RPAQ5P3250W		RPAP5P3250W		UG175P3250W		

Please contact us directly if the column you require is not listed in the above table.

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