

# Rack Manifold Catalog

## ❖ Overview 概述

The manifold is installed inside liquid-cooled server racks. It distributes cooling fluid to each individual server and serves as a critical core component of liquid cooling rack systems. (分液单元安装在液冷机柜内，将冷却液分配至每一台服务器，是液冷机柜中的关键部件。)

Rack designs vary widely across different customers, with unique requirements spanning overall dimensions, port counts, hose specifications, quick-disconnect fittings, material construction and more. This demands an extremely flexible rack manifold solution. 不同客户的机柜设计也不尽相同，比如外形尺寸、接口数量、软管规格、快插规格、材质等多个方面有着不同的要求，这就需要分液单元具备高度的灵活性。

**JR cooling Tec.** DLM Rack Manifold delivers highly customizable adaptability, offering a broad range of configurable options across multiple parameters, alongside rapid design and prototype sampling capabilities. 晶锐 DLM 分液单元具备高度灵活的定制化能力，可以在多个维度提供多种选项，并具备快速设计及打样的能力。

Some customers request performance data on manifold flow impedance and fluid distribution uniformity. We can provide simulation analysis reports tailored to your full set of manifold configuration selections. 有些客户希望了解分液单元的流动阻力和分配均匀度，我们可以根据配置来提供仿真计算结果。

## ❖ Main Features 特点

### ● Clean 清洁

Inert gas shielded welding, full pickling and passivation, and ultrasonic cleaning are adopted to guarantee the internal cleanliness of the manifold. 采用惰性气体保护焊接，整体酸洗钝化处理，超声波清洗等措施保证分液单元内部清洁度。

### ● Reliable 可靠

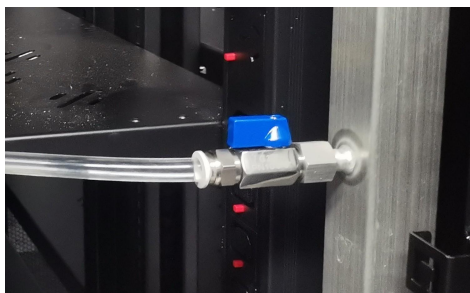
The main body is made of stainless steel for sturdy and durable performance. X-ray or borescope inspection is available to verify welding quality, and overall pressure testing ensures sealing performance. 本体采用不锈钢金属材料坚固耐用，X射线或内窥镜检查保证焊接质量，整体耐压测试保证密封性。

### ● Flexible 灵活

Multiple configuration combinations are offered with flexible supply scopes. Compatible with hoses, quick-disconnect fittings, interlock valves, air bleed valves and other components from various brands. Top and bottom inlet connections are supported, as well as PG25 and EG25 coolant fluids. 多种配置组合，支持不同的供货范围，支持不同品牌的软管、快插、互锁阀、排气阀等零部件，支持上下接管。支持 PG25、EG25 冷却液。

### ● Fast Installation 安装快捷

Keyhole hangers and mounting plates are provided for fast manifold fixation. Double-seal quick disconnects enable easy connection to servers, and interlock valves or sanitary ball valves allow quick connection to the secondary fluid loop. 配置挂钉、安装板可快速固定分液单元。双密封快速插头可以方便的与服务器对接，互锁阀或卫生级球阀可以与二次侧环网快速对接。



### ● Simple Operation & Maintenance 运维简便

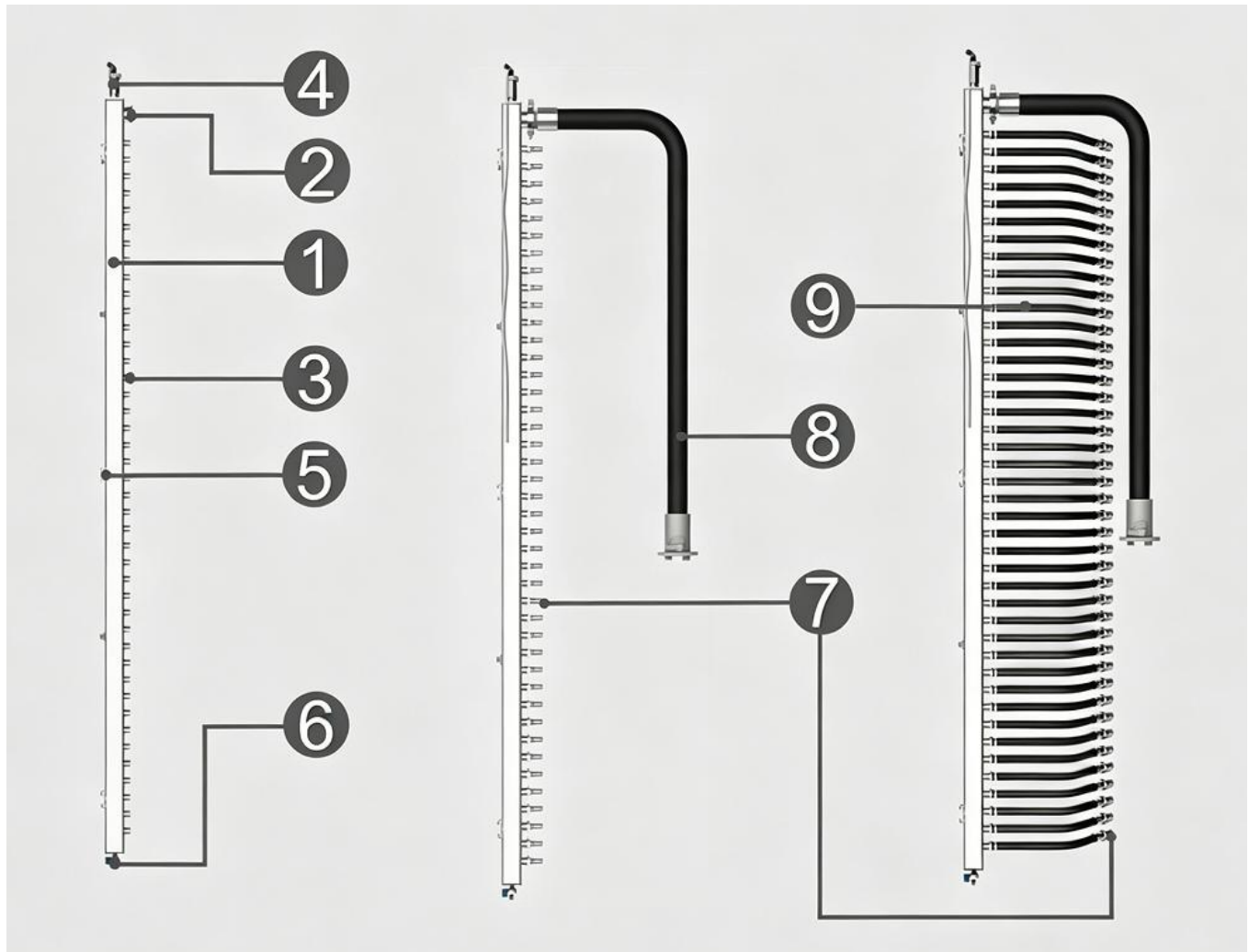
Built-in automatic air bleed valves quickly vent air trapped at the highest points. Optional diversion tubes prevent splashing of foamy coolant under abnormal conditions, and optional drain valves allow easy draining of internal fluid. 配置自动排气阀可快速排除最高点气体，导流管(选配)可防止特殊情况下的带液泡沫飞溅。排水阀(选配)可方便的排除内部液体。



## ❖ Scope of Supply 供货形式

The table below shows three typical supply configurations of the DLM manifold. You may confirm most specifications of your target manifold by referencing the component configuration table on the next page. 下表是 DLM 三种典型的不同的供货形式，再根据下页的分项配置表即可确认您想要的分液单元的绝大部分参数。

| Type            | Basic Type | Assembly Type A | Assembly Type B |
|-----------------|------------|-----------------|-----------------|
| Scope of Supply | ①~⑤        | ①~⑧             | ①~⑨             |



Basic Type

Assembly Type A

Assembly Type B

| No. | Part                         | No. | Part                     | No. | Part                          |
|-----|------------------------------|-----|--------------------------|-----|-------------------------------|
| ①   | Body 本体                      | ②   | External Rack Port 柜外接口  | ③   | Internal Rack Port 柜内接口       |
| ④   | Air Bleeder 排气阀              | ⑤   | Mounting Bracket 安装板     | ⑥   | Drain Valve 排水阀               |
| ⑦   | Quick Disconnect Socket 快插接头 | ⑧   | External Rack Hoses 柜外软管 | ⑨   | Internal Rack Port Hoses 柜内软管 |

## ❖ Configuration Selection Table 配置选型表

You may select options based on your requirements, underlined items in the table are recommended. Should you have needs beyond the scope of this table, please let us know, and we will accommodate them to the fullest extent possible. 您可以根据需要选择选项，表中有下划线的选项为推荐选项如果有超出此表范围的需求，敬请告知，我们会尽可能满足。

| No. | Part 部件                        | Item 项目                      | Option 选项                                                                                                                                                       |
|-----|--------------------------------|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | Body 本体                        | Sectional Dimension 截面尺寸     | 1.5*1.5"(40*40mm), <u>2*2"(50*50mm)</u> , 1.5*2.4"(40*60mm), 2*2.7"(50*70mm), $\phi$ 1.5"( $\phi$ 38mm), $\phi$ 1.8"( $\phi$ 45mm), $\phi$ 2.2"( $\phi$ 57mm)   |
|     |                                | Rack Size Compatibility 适配机柜 | 42U, <u>48U</u> , 52U                                                                                                                                           |
|     |                                | Material 材质                  | <u>SUS304, SUS316</u>                                                                                                                                           |
|     |                                | Operating Pressure 工作压力      | <u><math>\leq 116</math>psi(8bar)</u>                                                                                                                           |
| 2   | External Rack Port 柜外接口        | Spec.规格                      | Ferrule adapter OD 卡盘: $\phi$ 50.5mm, <u><math>\phi</math>64mm</u> , $\phi$ 77.5mm<br>Barb Fitting 宝塔: 1", 1.5", <u>2"</u><br>90°Barbed Union 90°宝塔活接: 1.5", 2" |
|     |                                | Qty.数量                       | <u>1 ~ 2pcs</u>                                                                                                                                                 |
|     |                                | Port Location 位置             | <u>Top Ports 顶部, Bottom Ports 底部</u>                                                                                                                            |
| 3   | Internal Rack Port 柜内接口        | Spec.规格                      | G Thd. 螺纹: 1/8", 1/4", 3/8", <u>1/2"</u><br>UNF Thd. 螺纹: 7/16"~20, 9/16"~18, <u>3/4"~16</u> , 7/8"~14<br>Barb Fitting 宝塔接头: 1/4", 3/8", 1/2", 5/8", 3/4", 1"    |
|     |                                | Qty.数量                       | 42U: $\leq 36$ pcs<br>48U: <u><math>\leq 42</math>pcs</u><br>52U: $\leq 48$ pcs                                                                                 |
| 4   | 排气阀(Air Bleeder)               | Cut-off Device 关断装置          | <u>Ball Valve 球阀, Self-close Valve 自闭阀</u>                                                                                                                      |
|     |                                | Diversion Tube 导流管           | Material 材质: <u>Silicone, PU</u><br>Length 长度: 85~150"(2159~3810mm)                                                                                             |
| 5   | Mounting Bracket 安装板           | Qty.数量                       | 1 ~ 4 pcs 1 ~ 4 个                                                                                                                                               |
|     |                                | Spacing 间距                   | Made-to-order 定制                                                                                                                                                |
| 6   | Drain Valve 排水阀                | Valve 阀门                     | Not Equipped 不配置, <u>Ball Valve with OD 8mm Quick Coupling, UQD02 Plug</u>                                                                                      |
|     |                                | Drain Pipe 排水管               | <u>PU Tube</u>                                                                                                                                                  |
| 7   | Quick Disconnect Coupling 快插接头 | Qty.数量                       | Matches the Qty. of ports on body 与本体接口数量一致                                                                                                                     |
|     |                                | Configuration 配置             | Not Equipped 不配置, Plug Only 仅公头, Socket only 仅母头                                                                                                                |
|     |                                | Spec.规格                      | UQD02, UQD04, <u>UQD06</u> , UQD08, Customer Spec.                                                                                                              |
|     |                                | Manufacturer 品牌              | GC, Danfoss, Staubli, Customer Spec.                                                                                                                            |
| 8   | External Rack Hoses 柜外软管       | Hose ID Size 软管规格            | 1", 1.5", <u>2"</u> , 2.5"                                                                                                                                      |
|     |                                | Material 材质                  | <u>EPDM</u>                                                                                                                                                     |
|     |                                | Flame retardant rating 阻燃等级  | <u>UL94V-0</u>                                                                                                                                                  |
|     |                                | Maintenance Valve 检修阀        | <u>Dual Ball Valves 双球阀, FD-83 Coupling 互锁阀, GALA Coupling</u>                                                                                                  |
| 9   | Internal Rack Port Hoses 柜内软管  | Hose ID Size 软管规格            | 1/4", 3/8", <u>1/2"</u> , 5/8", 3/4", 1"                                                                                                                        |

## ❖ Several Typical Models 几款典型型号

These models correspond to various application scenarios for your reference. 这几款型号代表了不同的应用场景，供您参考。

| Model     |                                |                              | DLM40A010                    | DLM50A006                    | DLM50B002                  |
|-----------|--------------------------------|------------------------------|------------------------------|------------------------------|----------------------------|
| Rack Load |                                |                              | 28kW                         | 44kW                         | 200kW                      |
| 1         | Body 本体                        | Sectional Dimension 截面尺寸     | 40*40mm                      | 50*50mm                      | 50*50mm                    |
|           |                                | Rack Size Compatibility 适配机柜 | 42U                          | 42U                          | 42U                        |
|           |                                | Material 材质                  | SUS304                       | SUS316                       | SUS304                     |
|           |                                | Operating Pressure 工作压力      | 116pis(8bar)                 | 116pis(8bar)                 | 116pis(8bar)               |
| 2         | External Rack Port 柜外接口        | Spec.规格                      | Ferrule adapter, $\phi 50.5$ | Ferrule adapter, $\phi 50.5$ | Ferrule adapter, $\phi 64$ |
|           |                                | Qty.数量                       | 1                            | 1                            | 1                          |
|           |                                | Port Location 位置             | Bottom Ports                 | Bottom Ports                 | Bottom Ports               |
| 3         | Internal Rack Port 柜内接口        | Spec.规格                      | G3/8"                        | G3/8"                        | G5/8"                      |
|           |                                | Qty.数量                       | 16                           | 18                           | 20                         |
| 4         | 排气阀(Air Bleeder)               | Cut-off Device 关断装置          | Ball Valve                   | Ball Valve                   | Ball Valve                 |
|           |                                | Diversion Tube 导流管           | Silicone                     | Silicone                     | Not Equipped               |
| 5         | Mounting Bracket 安装板           | Qty.数量                       | 2                            | 2                            | 3                          |
|           |                                | Spacing 间距                   | 67.5"(1714mm)                | 67.5"(1714mm)                | 30"(762mm)                 |
| 6         | Drain Valve 排水阀                | Valve 阀门                     | Not Equipped                 | OD 8mm Quick Coupling        | OD 8mm Quick Coupling      |
|           |                                | Drain Pipe 排水管               | Not Equipped                 | PU                           | PU                         |
| 7         | Quick Disconnect Coupling 快插接头 | Qty.数量                       | 16                           | 18                           | 20                         |
|           |                                | Configuration 配置             | Plug Only                    | Plug Only                    | Not Equipped               |
|           |                                | Spec.规格                      | UQD04                        | UQD04                        | Not Equipped               |
|           |                                | Manufacturer 品牌              | GC                           | Danfoss                      | Not Equipped               |
| 8         | External Rack Hoses 柜外软管       | Hose ID Size 软管规格            | 1"                           | 1"                           | 2"                         |
|           |                                | Material 材质                  | EPDM                         | EPDM                         | EPDM                       |
|           |                                | Flame retardant rating 阻燃等级  | UL94V-1                      | UL94V-1                      | Not Certified              |
|           |                                | Maintenance Valve 检修阀        | Dual Ball Valve              | Dual Ball Valve              | Dual Ball Valve            |
| 9         | Internal Rack Port Hoses 柜内软管  | Hose ID Size 软管规格            | 3/8"                         | 3/8"                         | 1/2"                       |
|           |                                | Material 材质                  | EPDM                         | EPDM                         | PTFE                       |
|           |                                | Flame retardant rating 阻燃等级  | UL94V-1                      | UL94V-1                      | Not Certified              |

