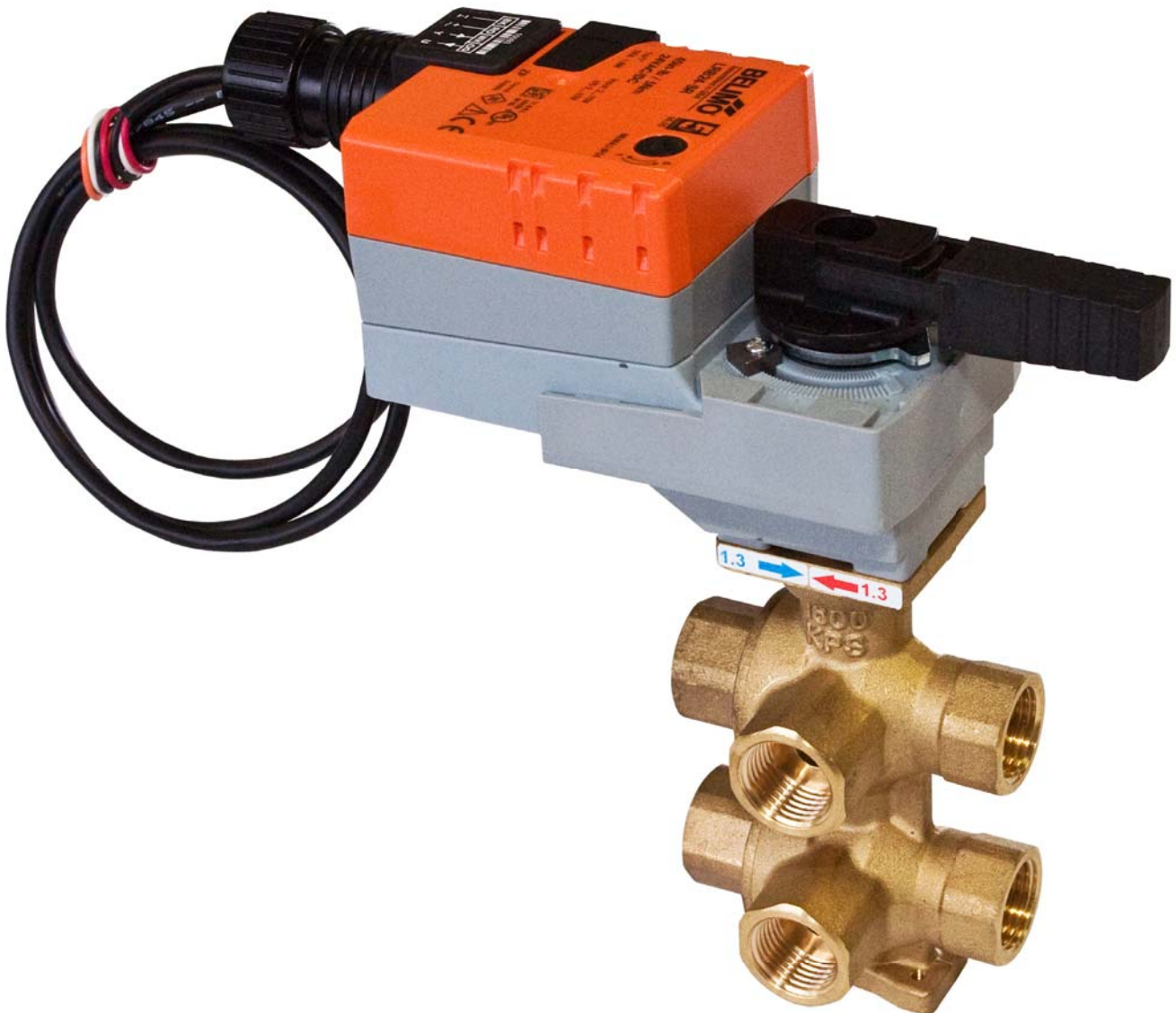


*Belimo Characterized 6-way Control Valve ...*



*... for Barcol Chilled Ceiling / Chilled Beam Solutions*

### *Benefits with Chilled Ceilings*

- *Highest thermal comfort in cooling and heating mode using standard BRC panels*
  - *4-pipe solution with 2-pipe panels*
- *Reduced material costs*
  - *Reduced panel costs*
  - *Reduced hose costs*
  - *Reduced controls / valve costs*
- *Reduced installation / labor costs*

### *Benefits with Chilled Beams*

- *Cooling and heating mode using standard 2-pipe chilled beam*
- *Reduced material costs*
  - *Reduced beam costs*
  - *Reduced hose costs*
  - *Reduced controls / valve costs*
- *Reduced installation / labor costs*

Barcol-Air is continuously aiming to optimize construction and quality for all equipment. Barcol-Air has the right to adjust the product specifications without any obligation and/or is not obligated to provide information in advance.

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Characterised control valves, 6-way, with internal threads

- 2 sequences (cooling/heating)
- With a rotary actuator 90°
- Switching or modulating control of thermal heated/chilled ceilings



Sequence 1 C <sub>v</sub>	Sequence 2 C <sub>v</sub>	Valve Nominal Size		Type	Suitable Actuators
		Inches	DN [mm]	6-way NP	Non-Spring Return
0.29	0.29	½	15	B315-029-029-BLT	LR24-SR LR24-MFT
0.29	0.46	½	15	B315-029-046-BLT	
0.29	0.73	½	15	B315-029-073-BLT	
0.29	1.16	½	15	B315-029-116-BLT	
0.29	1.50	½	15	B315-029-150-BLT	
0.46	0.29	½	15	B315-029-116-BLT	
0.46	0.46	½	15	B315-046-046-BLT	
0.46	0.73	½	15	B315-046-073-BLT	
0.46	1.16	½	15	B315-046-116-BLT	
0.46	1.50	½	15	B315-046-150-BLT	
0.73	0.29	½	15	B315-073-029-BLT	
0.73	0.46	½	15	B315-073-056-BLT	
0.73	0.73	½	15	B315-073-073-BLT	
0.73	1.16	½	15	B315-073-116-BLT	
0.73	1.50	½	15	B315-073-150-BLT	
1.16	0.29	½	15	B315-116-029-BLT	
1.16	0.46	½	15	B315-116-046-BLT	
1.16	0.73	½	15	B315-116-073-BLT	
1.16	1.16	½	15	B315-116-116-BLT	
1.16	1.50	½	15	B315-116-150-BLT	
1.50	0.29	½	15	B315-150-029-BLT	
1.50	0.46	½	15	B315-150-046-BLT	
1.50	0.73	½	15	B315-150-116-BLT	
1.50	1.16	½	15	B315-150-116-BLT	
1.50	1.50	½	15	B315-150-150-BLT	
2.90	2.90	¾	20	B320-290-290-BLT	
1.86	1.86	¾	20	B320-186-186-BLT	
1.16	1.16	¾	20	B320-116-116-BLT	
0.73	0.73	¾	20	B320-073-073-BLT	
2.90	1.86	¾	20	B320-290-186-BLT	
2.90	1.16	¾	20	B320-290-116-BLT	
2.90	0.73	¾	20	B320-290-073-BLT	
1.86	1.16	¾	20	B320-186-116-BLT	
1.86	0.73	¾	20	B320-186-073-BLT	
1.16	0.73	¾	20	B315-116-073-BLT	

#### Linear Characteristics

#### Mode of Operation

The control valve is operated by an electronic actuator that responds to a proportional VDC/4...20 mA control signal. The actuator will then move the ball of the valve to the position dictated by the control signal and change the flow.

#### Product Features

Linear characteristic, complete close-off.

#### Actuator Specification

Control type	2-10 VDC multi-function technology (MFT)
Manual override	LR
Electrical connection	3 ft [1m] cable with ½" conduit fitting

#### Valve Specifications

Service	chilled or hot water, 60% glycol
Flow characteristic	linear
Controllable flow range	
Sequence 1	(0 to 30° angle) <sup>1</sup> Dead zone 30° to 60°
Sequence 2	(60° to 90° angle) <sup>2</sup>
Sizes	½" - ¾"
Type of end fitting	NPT

#### Materials

Body	nickel plated brass
Ball	chrome plated brass
Stem	nickel plated brass
Seats	Teflon® PTFE
Characterizing disc	chrome plated steel
Packing	1/2" (NBR), 3/4" (EPDM)
Media temp range	1/2" 43°F to 180°F (6°C to 82°C) 3/4" 43°F to 180°F (6°C to 82°C)

Body pressure rating	1600kPa (232 psi)
Close off pressure	50 psi
Maximum differential pressure ( P )	15 psi
Leakage	rate A (bubble tight) according to EN12266-1
v rating	see product chart for values

Safety notes



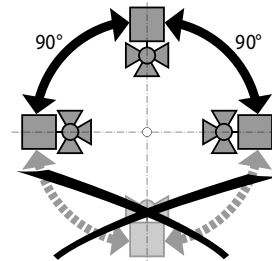
- The ball valve has been designed for use in stationary heating, ventilation and air conditioning systems and is not allowed to be used outside the specified field of application, especially in aircraft or in any other airborne means of transport.
- It may only be installed by suitably trained personnel.  
Any legal regulations or regulations issued by authorities must be observed during installation.
- The ball valve does not contain any parts that can be replaced or repaired by the user.
- The ball valve may not be disposed of as household refuse. All locally valid regulations and requirements must be observed.
- The recognized rules should be applied when determining the flow characteristic of final controlling elements

Product features

**Mode of operation** The 6-way ball valve is adjusted using a rotary actuator. The rotary actuator is controlled via an MP signal.  
If the valve is turned in the clockwise direction (till the end stop), the cooling sequence is fully enabled.  
If the valve is turned in the counter-clockwise direction (90°), the heating sequence is fully enabled.

Installation instructions

**Recommended installation positions** The valve may be mounted either vertically or horizontally . It is not permissible, mounting the valve with the stem pointing downwards.



**Water quality requirements**

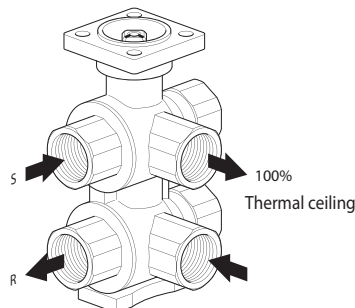
- The water quality requirements specified in VDI 2035 must be adhered to.
- Characterised control valves are relatively sensitive control devices. In order to ensure a long service life, it is advisable to fit strainers .

**Maintenance**

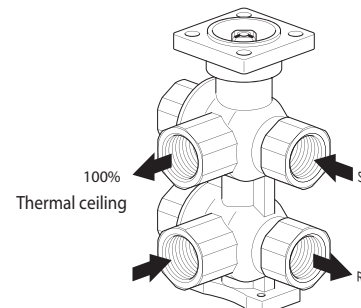
- Characterised control valves and rotary actuators are maintenance-free.
- Before any kind of service work is carried out, it is essential to isolate the rotary actuator from the power supply (by disconnecting the power lead). Any pumps in the part of the piping system concerned must also be switched off and the appropriate isolating fittings closed (allow everything to cool down first if necessary and reduce the pressure in the system to atmospheric).
- The system must not be returned to service until the ball valve and the rotary actuator have been properly reassembled in accordance with the instructions and the pipework has been refilled in the proper manner.

**Flow direction** The flow direction must be observed. The position of the ball can be identified from the L-marking on the stem.

Cooling



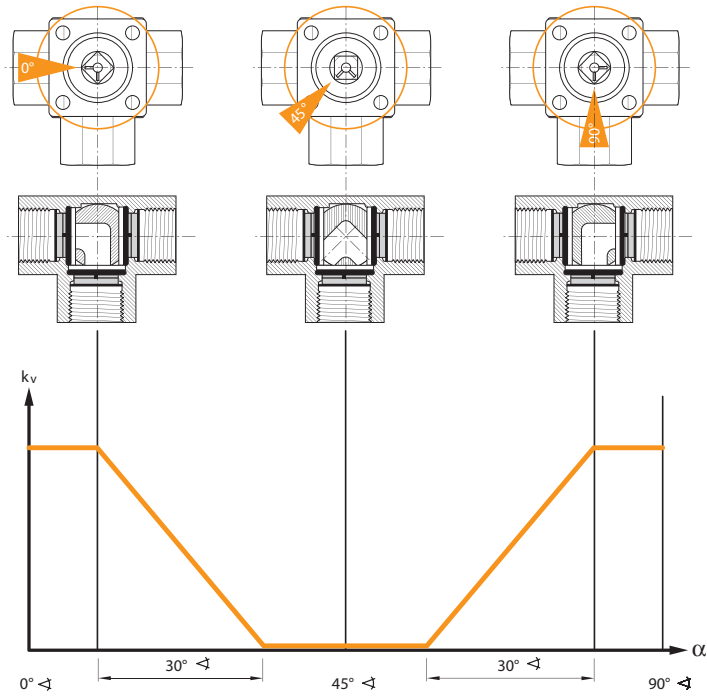
Heating



Installation instructions

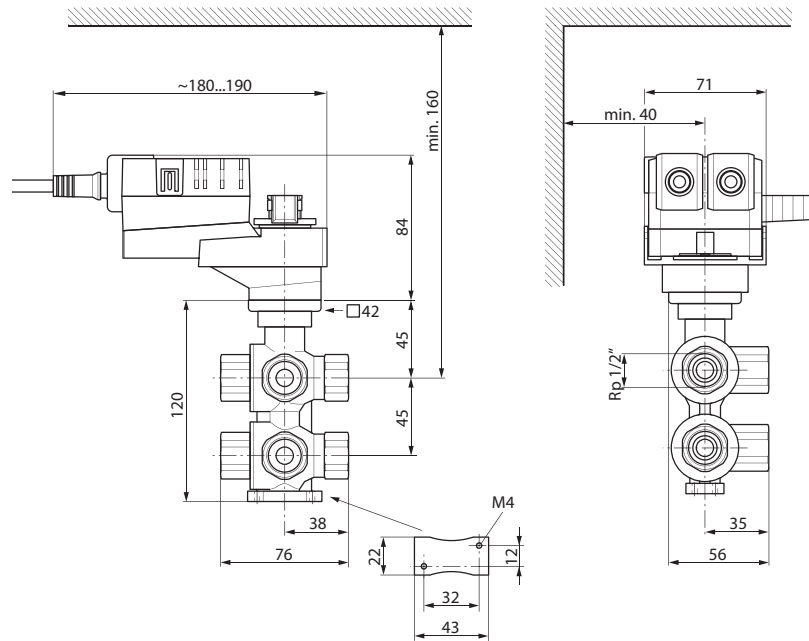
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Valve characteristic curve



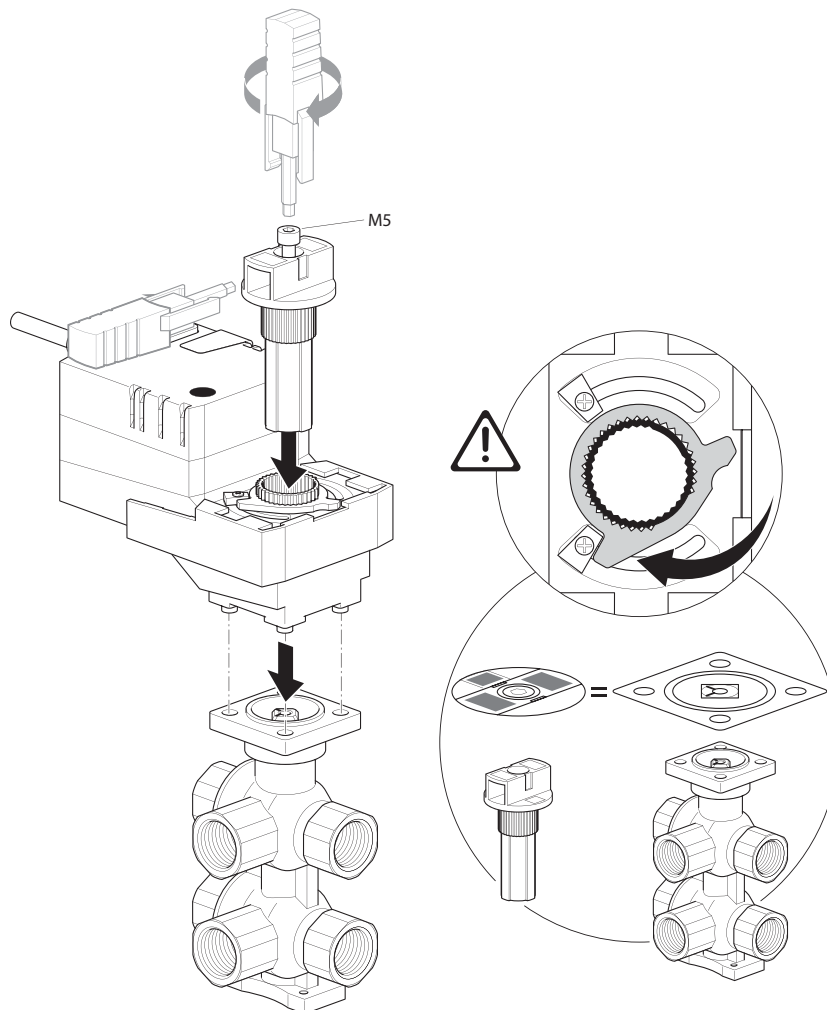
Dimensions

Dimensional drawings  
With LR..MP/LON



Installation with LR..MP/LON

The position of the actuator must correspond to the position of the ball in the valve. For this purpose, the knob is turned clockwise until the end stop and the contour (T) is also turned by 90° ↻. The contour (L) on the valve stem is ⬠ and is (left and below) congruent. The M5 (hexagonal socket screw) is then tightened by hand and the manual override on the actuator is unlocked.



Further documentation	<ul style="list-style-type: none"> <li>• Data sheets for actuators</li> <li>• Installation instructions for actuators</li> <li>• Notes for project planning (hydraulic characteristic curves and circuits, installation regulations, commissioning, maintenance etc.)</li> </ul>
Warranty period	<p>This is a commercial product manufactured for Belimo (commercial product in accordance with clause 3 of the General Business Conditions). The warranty period is two years from the delivery date.</p>

Sample layout with Radiant Panels : Cooling + Heating

**Benefits**

- Highest thermal comfort in cooling and heating mode using standard CB-Aqua panels
  - 4-pipe solution with 2-pipe panels
- Reduced material costs
  - Reduced panel costs
  - Reduced hose costs
  - Reduced controls / valve costs
- Reduced installation / labor costs

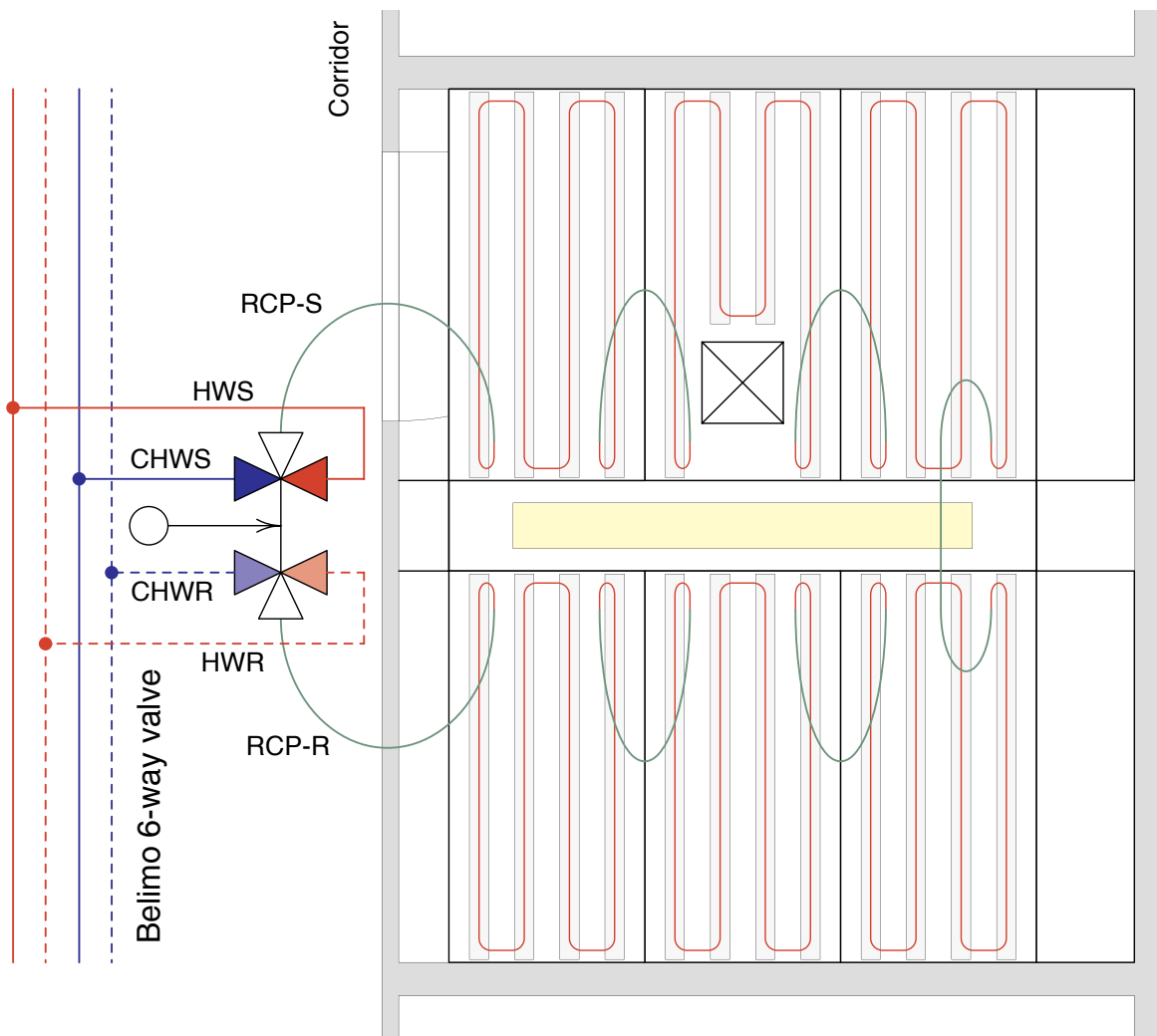


Figure 1: Radiant 4-pipe solution with 2-pipe panels !

Sample layout with Chilled Beams : Cooling + Heating

**Benefits**

- Cooling and heating mode using standard 2-pipe chilled beam
- Reduced material costs
  - Reduced beam costs
  - Reduced hose costs
  - Reduced controls / valve costs
- Reduced installation / labor costs

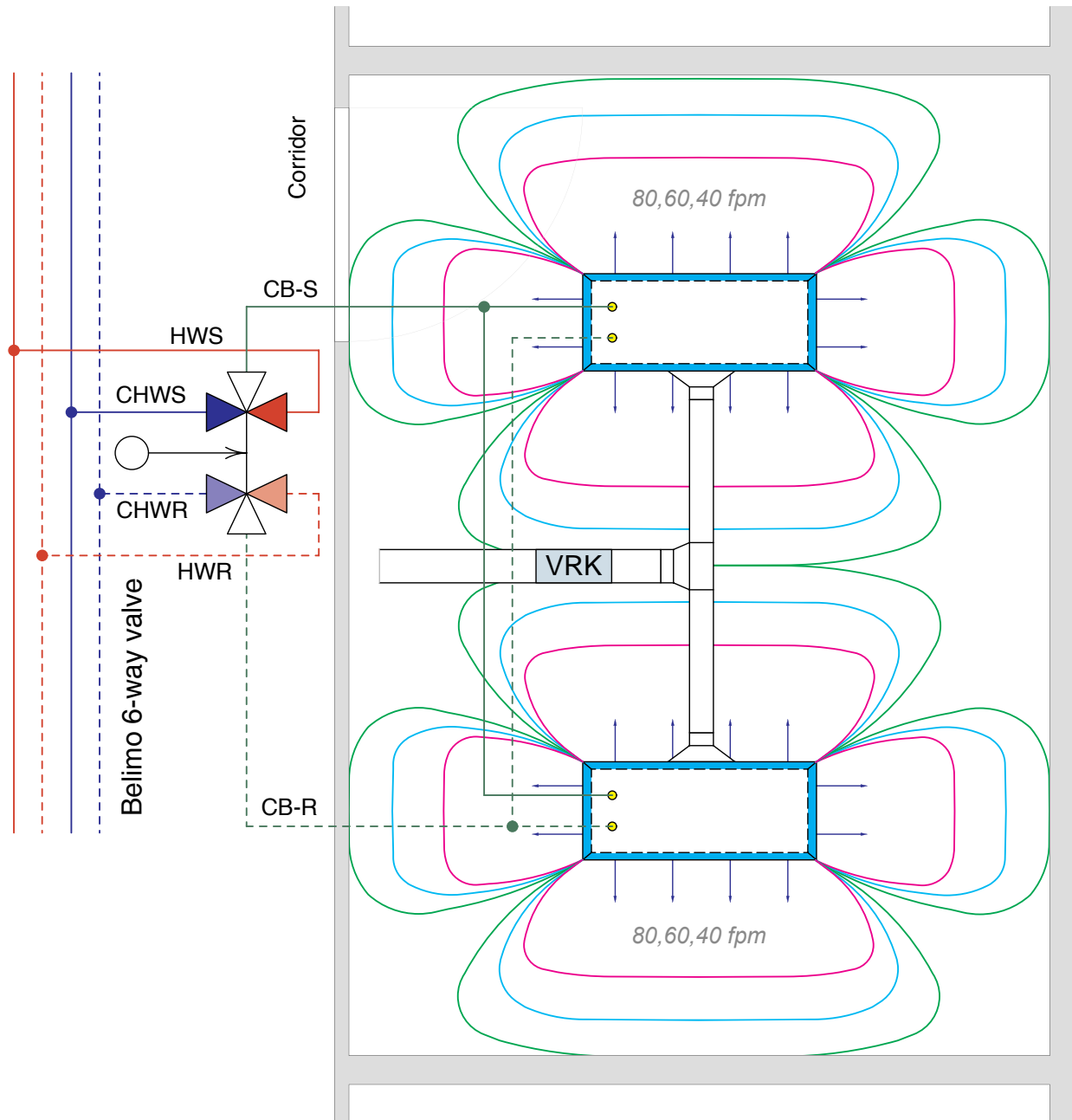


Figure 2: Chilled beam 4-pipe solution with 2-pipe beams !