

RS2

Rack & Bulk Output Module

Effective Space & validated Racks



Revision history

Version	Date	Author	Remarks
a01.01 <i>released</i>	13 th October 2021	YN	Initial version
a02.01 <i>released</i>	07 th February 2022	TS	ECR 958 Validated racks of Companies Beckman Coulter, BD, Roche Automation, Siemens Healthineers, Maksud, Olympus and Tosoh added. Abbott Architect Racks renamed in Alinity Racks.
a03.01 <i>released</i>	14 th November 2022	TS	ECR 1031 Validated racks of Beckman Coulter, Hettich and Siemens Healthineers added. Unknown racks are listed in a separate chapter. Abbott GLP Centrifuge Rack renamed in Flexrack. ECR 1061 Adjusted the effective Space on the Rack Ground Plate. ECR 1094 Existing rack trays with the associated art.-no. are listed under the corresponding racks. Added fixation wedge for Roche Cobas (Hitachi) Racks. Added alternate Rack Ground Plate for barcode alignment.
a04.01 <i>released</i>	26 th February 2024	TS	ECR 1788 Validated racks Hettich 3734, Horiba and Vitros added. New available trays for Alinity-, Advia-, Eppendorf-, Flex- and Sysmex-Racks added. Layout modified.

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Introduction

The following document describes the possibilities and limitations of the RS2 Rack & Bulk Output module.

Please note that the illustrations in this manual are binding and there is no guarantee for complete and correct descriptions of validated racks.

The whole throughput and so the performance of the RS2 module always depends on the configuration of the device, the sample tube mix and the racks used.

A performance between 800 and 1100 samples per hour can be achieved for rack sorting within one RS2 module. With several RS2 modules in a row, the performance increases not proportionately and depends on the slowest module of the entire configuration.

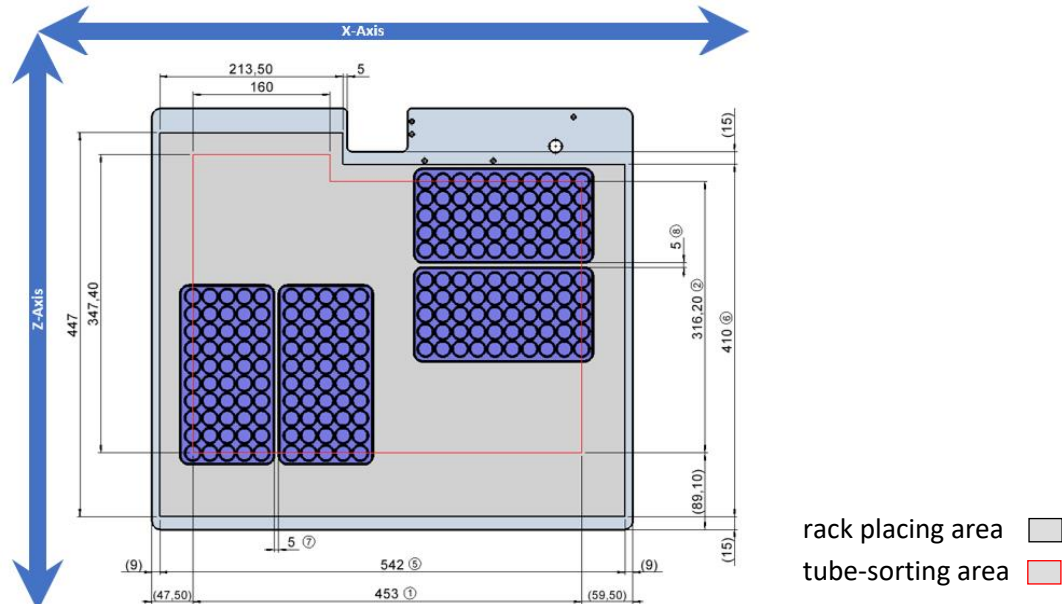
E.g.: With two RS2 Modules in a row, each with 1000 tubes per hour, the total throughput is between 1400 and 1700 tubes per hour, depending on the sample tube mix.

We are in a constant state of further development. If you cannot find your preferred rack, there is also the possibility to check and validate further racks that are not listed in this document.

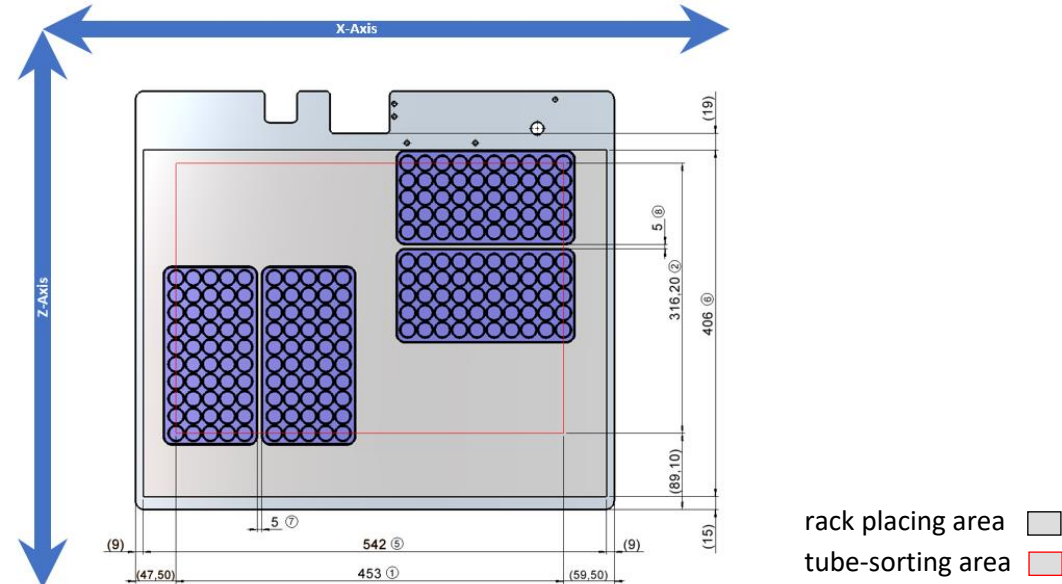
Please contact us if you are looking for an individual solution. We are looking forward to adding new racks to our modules.

Effective Space on the Rack Ground Plate

Standard

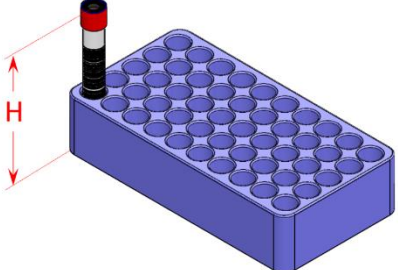
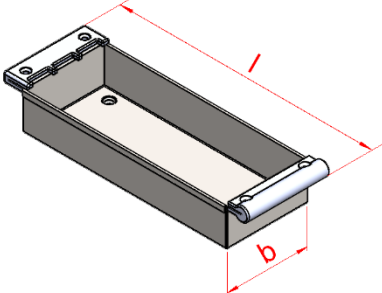


Barcode Alignment



- ① Maximum distance between most left and most right rack position (x-axis)
- ② Maximum distance between rearmost and foremost rack position (z-axis)
- ⑤ Maximum distance between the most left and most right edges of any rack (x-axis)
- ⑥ Maximum distance between the rearmost and foremost edge of any rack (z-axis)
- ⑦ Minimum distance between the edges of two adjacent racks (x-axis)
- ⑧ Minimum distance between the edges of two adjacent racks (z-axis)

Rack and Tray Dimensions

	<table> <tr> <th colspan="2">Rack Dimensions</th></tr> <tr> <td>H</td><td>rack height [mm] with largest tube ≤ 139 mm</td></tr> <tr> <td colspan="2"> - further dimensions such as rack length, width, height and inner diameter of rack position can be found in the following list of validated racks. - all dimensions in mm </td></tr> </table>	Rack Dimensions		H	rack height [mm] with largest tube ≤ 139 mm	- further dimensions such as rack length, width, height and inner diameter of rack position can be found in the following list of validated racks. - all dimensions in mm	
Rack Dimensions							
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	<table> <tr> <th colspan="2">Tray Dimensions</th></tr> <tr> <td colspan="2"> - The maximum length and width dimensions (l x b) of the available trays can also be found in the following list of validated racks. - all dimensions in mm </td></tr> </table>	Tray Dimensions		- The maximum length and width dimensions (l x b) of the available trays can also be found in the following list of validated racks. - all dimensions in mm			
Tray Dimensions							
- The maximum length and width dimensions (l x b) of the available trays can also be found in the following list of validated racks. - all dimensions in mm							

Validated Racks

Abbott

Alinity H Racks

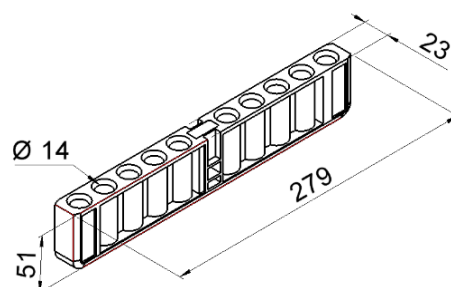


currently available Trays

designation (Art.-No)	dimensions l x b [mm]
○ 2 rack tray (8105)	326 x 49,4
○ 5 rack tray (8104)	326 x 117,6

- additional tray necessary
- dimensions of the tray may vary

Rack Dimensions [mm]



Validated Racks

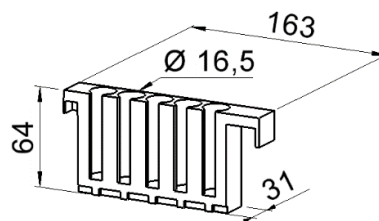
Abbott

Architect universal Sample Carrier



- additional tray necessary
- dimensions of the tray may vary

Rack Dimensions [mm]



currently available Trays

designation (Art.-No)	dimensions l x b [mm]
-----------------------	-----------------------

○ -

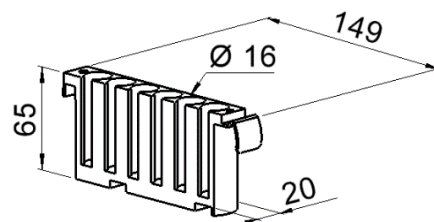
-

Alinity Racks



- additional tray necessary
- dimensions of the tray may vary

Rack Dimensions [mm]



currently available Trays

designation (Art.-No)	dimensions l x b [mm]
-----------------------	-----------------------

○ 10 rack tray (8149)

241,4 x 129,2

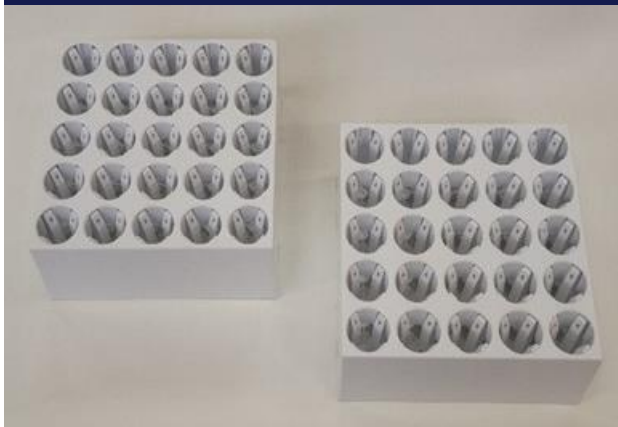
○ -

-

Validated Racks

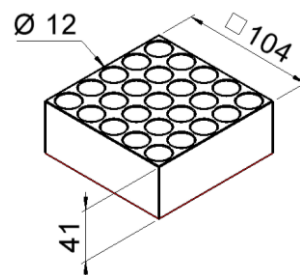
Abbott

Flexrack



- additional tray optional
- dimensions of the tray may vary

Rack Dimensions [mm]



currently available Trays

designation (Art.-No)	dimensions l x b [mm]
○ 2 rack tray (7701)	259,8 x 108,5
○ 4 rack tray (7977)	489,4 x 108,5

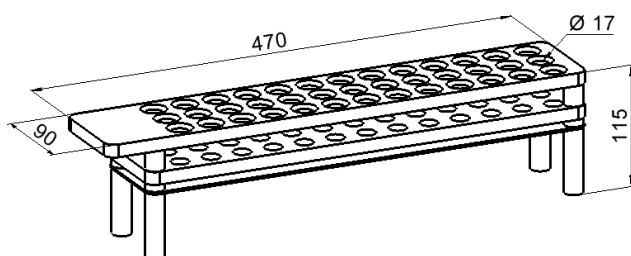
BD

BD Kiestra Rack (39 Positions)



- no tray needed, rack embedded 15 mm in rack plate
- rack position only with x-axis
- max. tube length 112 mm
- do not use a capacitive sensor

Rack Dimensions [mm]



currently available Trays

designation (Art.-No)	dimensions l x b [mm]
no tray needed	-

Validated Racks

BD

BD Kiestra Rack (45 Positions)

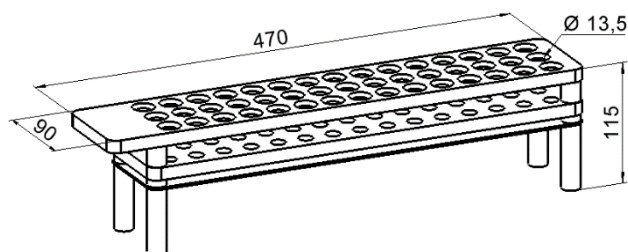


currently available Trays

designation (Art.-No)	dimensions l x b [mm]
no tray needed	-

- no tray needed, rack embedded 15 mm in rack plate
- rack position only with x-axis
- max. tube length 82 mm
- do not use a capacitive sensor

Rack Dimensions [mm]



Beckman Coulter

B43843-AB Rack (84 Positions)

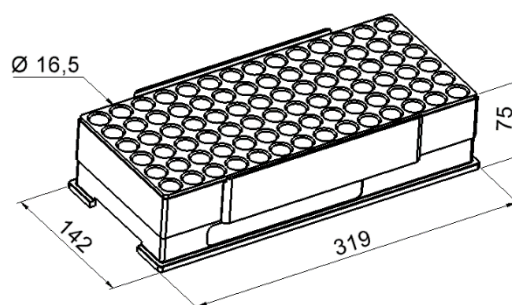


currently available Trays

designation (Art.-No)	dimensions l x b [mm]
no tray needed	-

- no tray needed
- max. tube length 109 mm
- note the position of the sensor

Rack Dimensions [mm]



Validated Racks

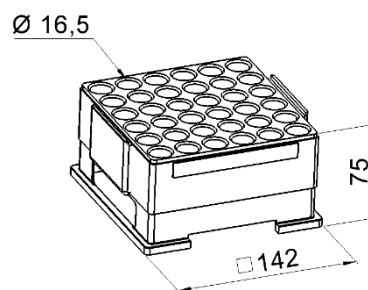
Beckman Coulter

B43840-AB Rack (36 Positions)



- no tray needed
- max. tube length 109 mm
- note the position of the sensor

Rack Dimensions [mm]

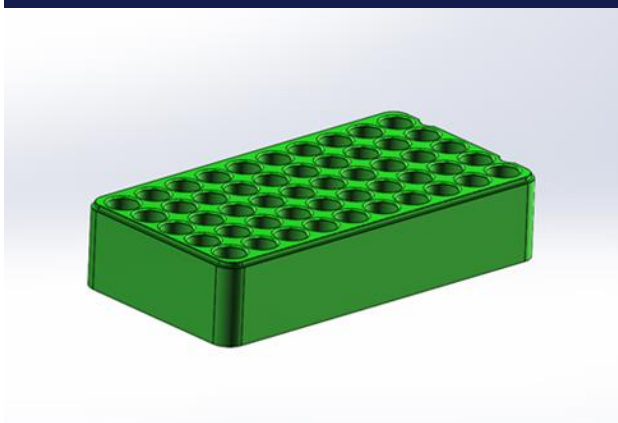


currently available Trays

designation (Art.-No)	dimensions l x b [mm]
-----------------------	-----------------------

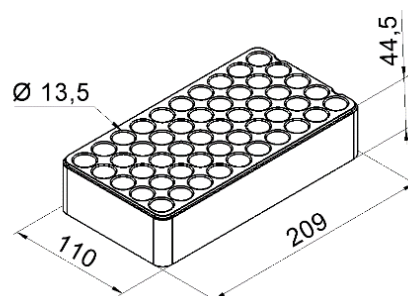
no tray needed	-
----------------	---

Automate Rack P2500



- no tray needed

Rack Dimensions [mm]



currently available Trays

designation (Art.-No)	dimensions l x b [mm]
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no tray needed	-
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Validated Racks

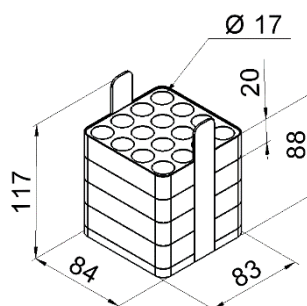
Eppendorf

5810 - adapter: 12 & 16 samples



- additional tray optional when using more than one rack per module
- without centrifuge bucket
- dimensions of the tray may vary

Rack Dimensions [mm]



currently available Trays

designation (Art.-No)	dimensions l x b [mm]
-----------------------	-----------------------

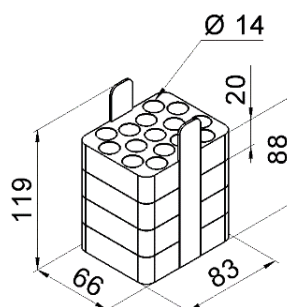
○ 2 rack tray (7621)	239,2 x 87,9
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5810/R - adapter: 15 samples



- additional tray optional when using more than one rack per module
- medium/ slow performance
- dimensions of the tray may vary

Rack Dimensions [mm]



currently available Trays

designation (Art.-No)	dimensions l x b [mm]
-----------------------	-----------------------

○ -	-
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Validated Racks

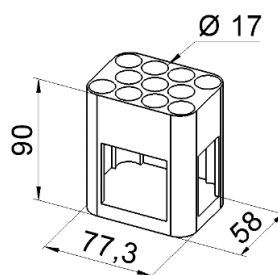
Hettich

Rack 5248 for Centrifuge



- additional tray optional when using more than one rack per module
- dimensions of the tray may vary

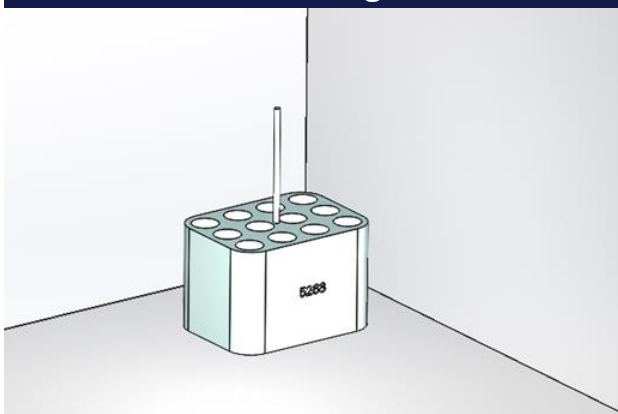
Rack Dimensions [mm]



currently available Trays

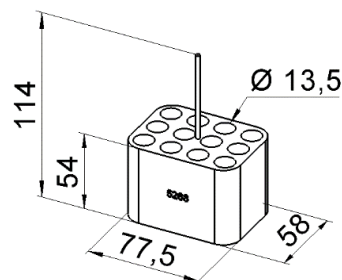
designation (Art.-No)	dimensions l x b [mm]
○ 2 rack tray (7216)	222,7 x 60,2
○ 4 rack tray (7414)	223,2 x 117,8

Rack 5268 for Centrifuge



- additional tray optional when using more than one rack per module
- dimensions of the tray may vary

Rack Dimensions [mm]



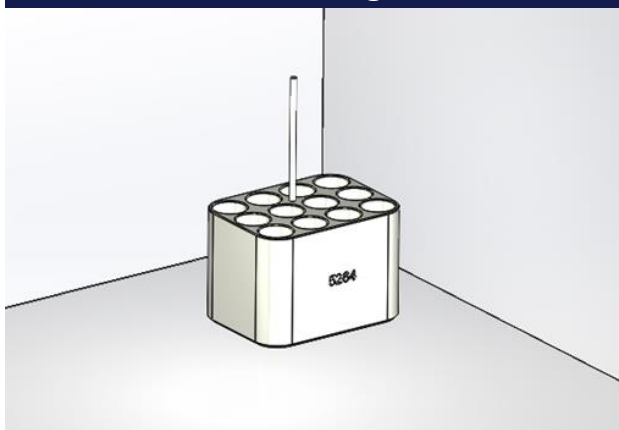
currently available Trays

designation (Art.-No)	dimensions l x b [mm]
○ 2 rack tray (7216)	222,7 x 60,2
○ 4 rack tray (7414)	223,2 x 117,8

Validated Racks

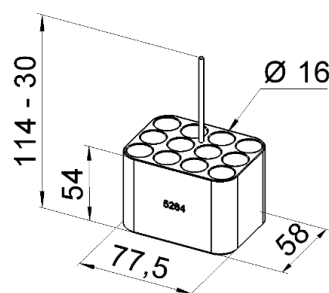
Hettich

Rack 5264 for Centrifuge



- additional tray optional when using more than one rack per module
- dimensions of the tray may vary
- Shorten the metal rods by 30 mm

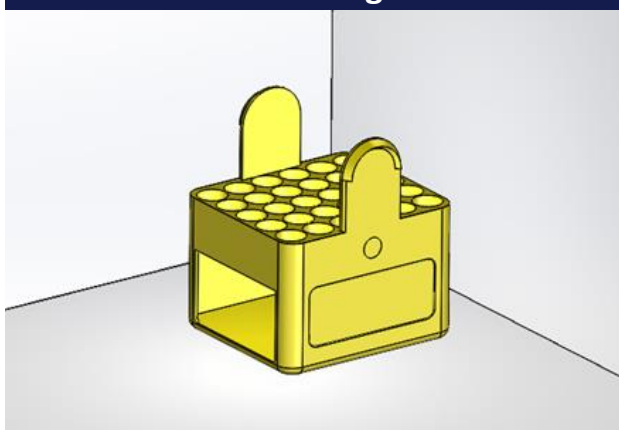
Rack Dimensions [mm]



currently available Trays

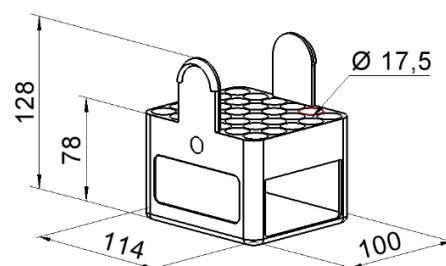
designation (Art.-No)	dimensions l x b [mm]
○ 2 rack tray (7216)	222,7 x 60,2
○ 4 rack tray (7414)	223,2 x 117,8

Rack 4214 for Centrifuge



- no tray needed

Rack Dimensions [mm]



currently available Trays

designation (Art.-No)	dimensions l x b [mm]
no tray needed	-

Validated Racks

Hettich

Racks for Centrifuge ROTANTA

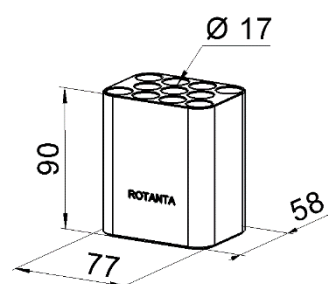


currently available Trays

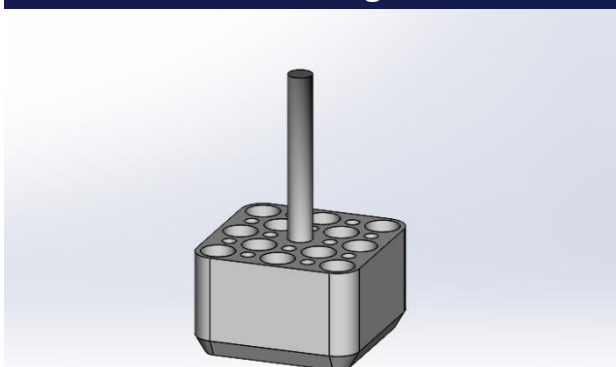
designation (Art.-No)	dimensions l x b [mm]
○ -	-

- additional tray optional when using more than one rack per module
- dimensions of the tray may vary

Rack Dimensions [mm]



Rack 3734 for Centrifuge

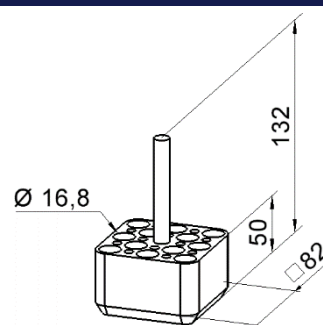


currently available Trays

designation (Art.-No)	dimensions l x b [mm]
○ -	-

- additional tray optional when using more than one rack per module
- dimensions of the tray may vary

Rack Dimensions [mm]



Validated Racks

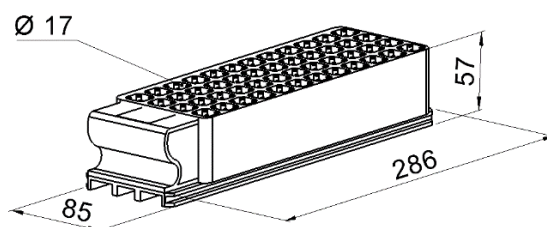
Inpeco Automation

Inpeco Rack transparent (CS119)



- no tray needed

Rack Dimensions [mm]



currently available Trays

designation (Art.-No)	dimensions l x b [mm]
-----------------------	-----------------------

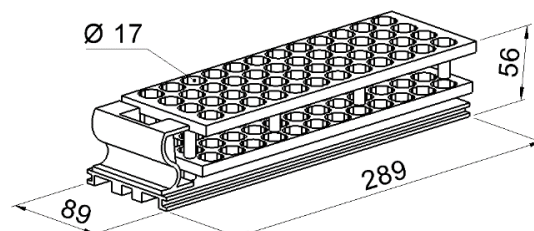
no tray needed	-
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Inpeco Rack black (484280000)



- no tray needed

Rack Dimensions [mm]



currently available Trays

designation (Art.-No)	dimensions l x b [mm]
-----------------------	-----------------------

no tray needed	-
----------------	---

Validated Racks

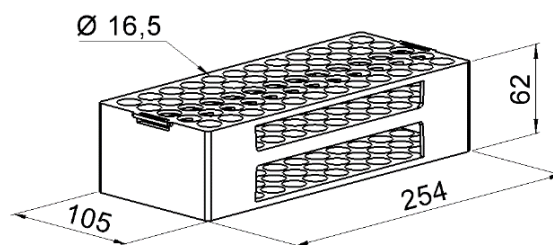
Maksense

iRack



- no tray needed

Rack Dimensions [mm]

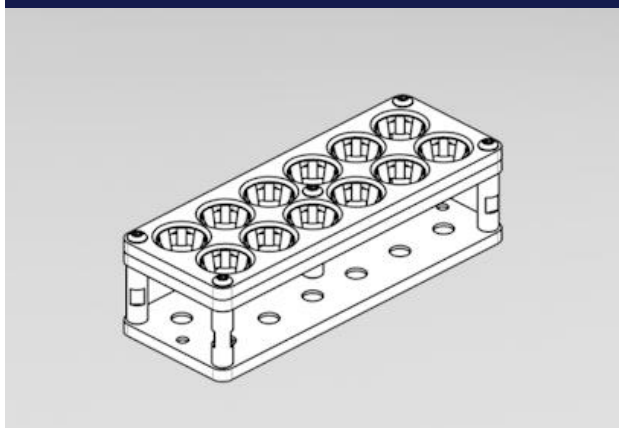


currently available Trays

designation (Art.-No)	dimensions l x b [mm]
no tray needed	-

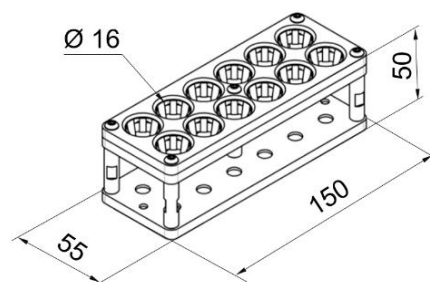
NGNY Devices (AQUA)

AQUA Rack - 12 Positions



- additional tray optional when using more than one rack per module
- dimensions of the tray may vary

Rack Dimensions [mm]



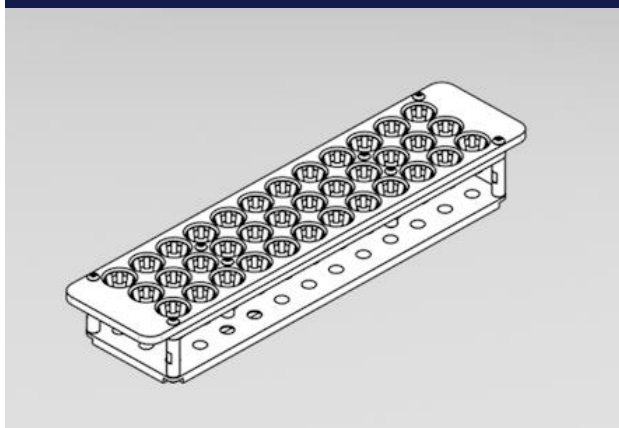
currently available Trays

designation (Art.-No)	dimensions l x b [mm]
○ -	-

Validated Racks

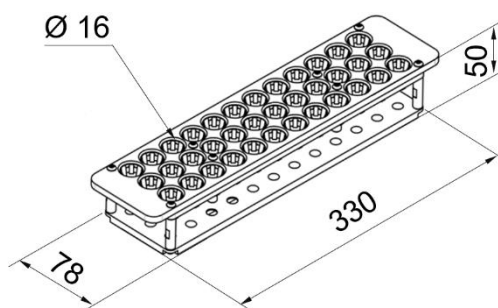
NGNY Devices (AQUA)

AQUA Rack - 36 Positions



- no tray needed

Rack Dimensions [mm]

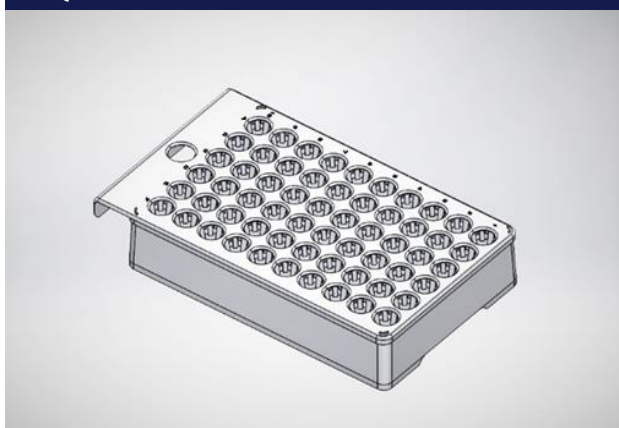


currently available Trays

designation (Art.-No)	dimensions l x b [mm]
-----------------------	-----------------------

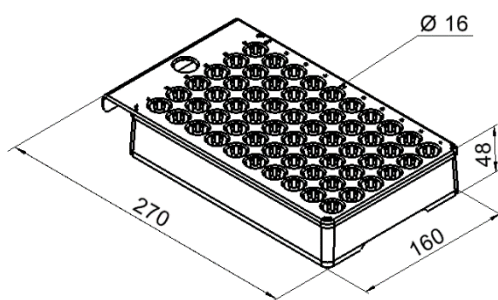
no tray needed	-
----------------	---

AQUA Rack - 60 Positions



- no tray needed

Rack Dimensions [mm]



currently available Trays

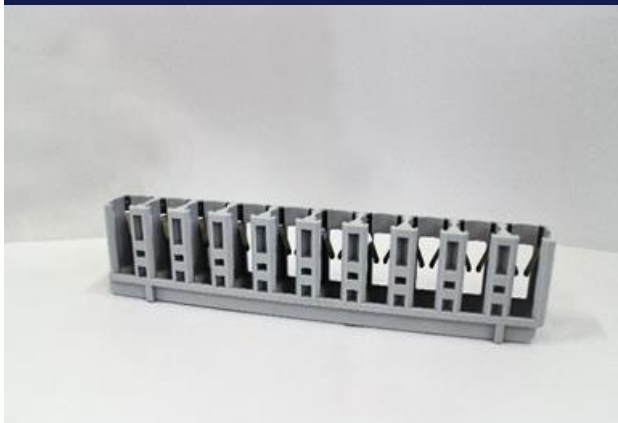
designation (Art.-No)	dimensions l x b [mm]
-----------------------	-----------------------

no tray needed	-
----------------	---

Validated Racks

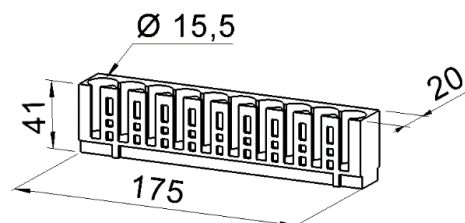
Olympus

Racks div. 1



- additional tray necessary
- dimensions of the tray may vary

Rack Dimensions [mm]



currently available Trays

designation (Art.-No)	dimensions l x b [mm]
-----------------------	-----------------------

○ -

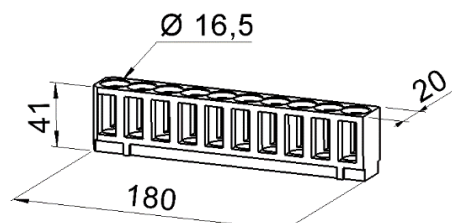
-

Racks div. 2



- additional tray necessary
- dimensions of the tray may vary

Rack Dimensions [mm]



currently available Trays

designation (Art.-No)	dimensions l x b [mm]
-----------------------	-----------------------

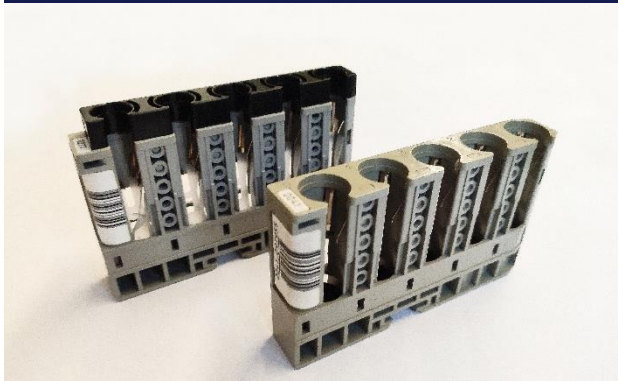
○ -

-

Validated Racks

Roche Automation

Roche Cobas Rack (Hitachi 5 Pos.)

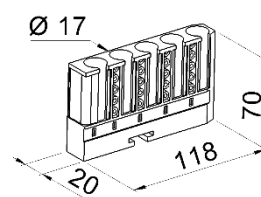


currently available Trays

○ see Picture 1 - 3 all trays are for 15 racks

- additional tray necessary
- dimensions of the tray may vary
- largest tray is for 15 racks

Rack Dimensions [mm]



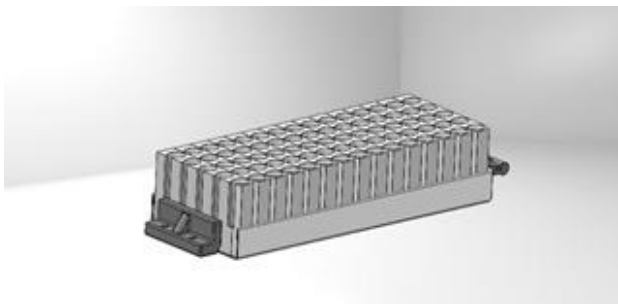
① original Roche tray (with clamping bracket)



- to minimize the clearance of the single racks in the tray, use our T&O fixing wedge (please contact us).
- the upper reduction attachment (racks) should be avoided
- unsuitable for barcode alignment

Tray Dimensions l x b [mm]: 315 x 140

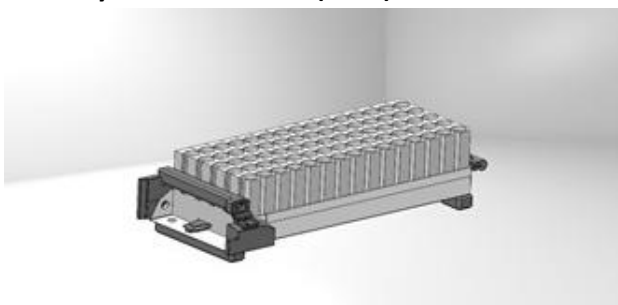
② tray open on one side incl. stop (7346)



- Racks must be transferred to original Roche trays after tube placement
- the single racks can be removed upwards (no fixation).
- stop on rack plate optional

Tray Dimensions l x b [mm]: 346 x 123

③ tray with fixed racks (7802)



- Racks must be transferred to original Roche trays after tube placement
- the single racks are fixed in the tray
- suitable for replacing the original Roche trays on RS2 rack plate

Tray Dimensions l x b [mm]: 360 x 147

Validated Racks

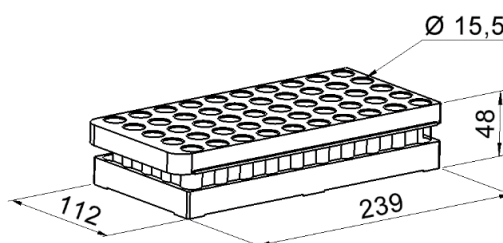
Roche Automation

Cobas 8100 Rack



- no tray needed

Rack Dimensions [mm]



currently available Trays

designation (Art.-No)	dimensions l x b [mm]
-----------------------	-----------------------

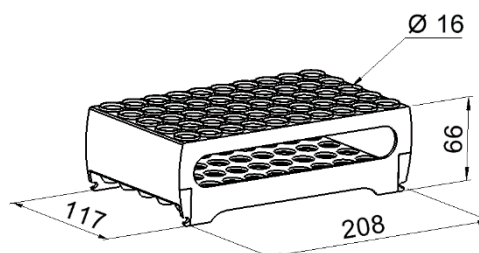
no tray needed	-
----------------	---

Roche Rack (50 Pos.)



- no tray needed

Rack Dimensions [mm]



currently available Trays

designation (Art.-No)	dimensions l x b [mm]
-----------------------	-----------------------

no tray needed	-
----------------	---

Validated Racks

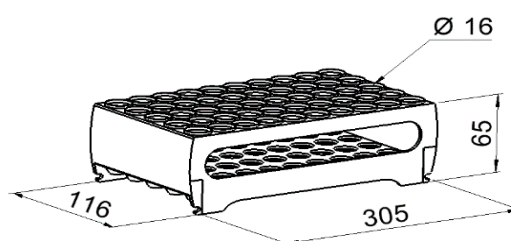
Roche Automation

Roche Rack (75 Pos.)



- no tray needed

Rack Dimensions [mm]



currently available Trays

designation (Art.-No)	dimensions l x b [mm]
-----------------------	-----------------------

no tray needed	-
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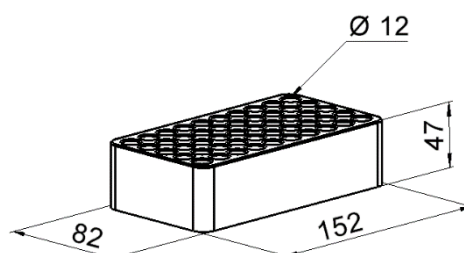
Sarstedt

S-Monovette - Rack D12



- no tray needed

Rack Dimensions [mm]



currently available Trays

designation (Art.-No)	dimensions l x b [mm]
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no tray needed	-
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Validated Racks

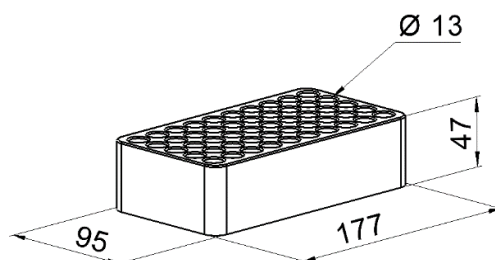
Sarstedt

S-Monovette - Rack D13



- no tray needed

Rack Dimensions [mm]



currently available Trays

designation (Art.-No)	dimensions l x b [mm]
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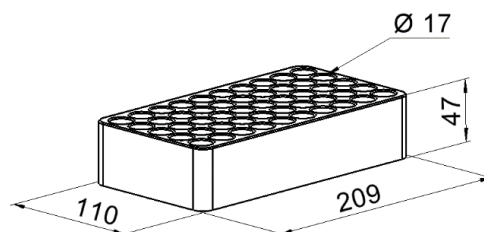
no tray needed	-
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S-Monovette - Rack D17



- no tray needed

Rack Dimensions [mm]



currently available Trays

designation (Art.-No)	dimensions l x b [mm]
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no tray needed	-
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Validated Racks

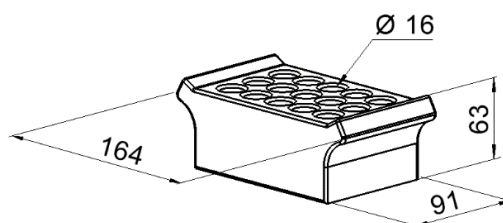
Siemens Healthineers

Atellica Rack (15 Pos.)



- no tray needed

Rack Dimensions [mm]



currently available Trays

designation (Art.-No)	dimensions l x b [mm]
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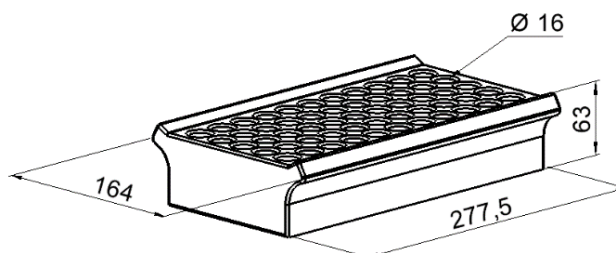
no tray needed	-
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Atellica Rack (55 Pos.)



- no tray needed

Rack Dimensions [mm]



currently available Trays

designation (Art.-No)	dimensions l x b [mm]
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no tray needed	-
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Validated Racks

Siemens Healthineers

Centrifuge Rack *(similar to illustration)*



currently available Trays

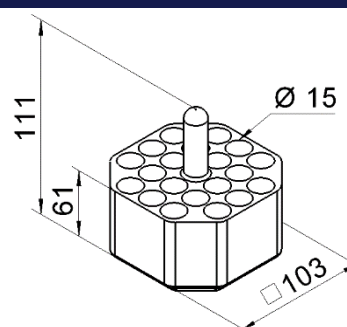
designation (Art.-No)	dimensions l x b [mm]
○ -	-

○ -

-

- additional tray optional when using more than one rack per module
- dimensions of the tray may vary

Rack Dimensions [mm]



Racks for CS-5100 System



currently available Trays

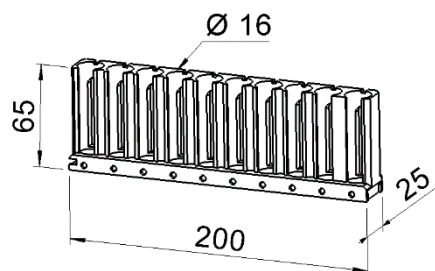
designation (Art.-No)	dimensions l x b [mm]
○ -	-

○ -

-

- additional tray necessary
- dimensions of the tray may vary

Rack Dimensions [mm]



Validated Racks

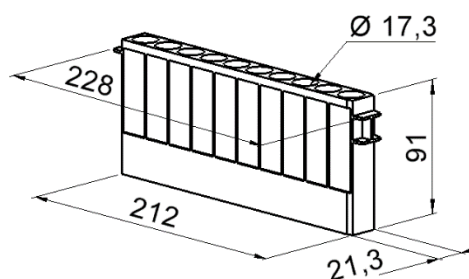
Siemens Healthineers

Advia Racks



- additional tray necessary
- dimensions of the tray may vary

Rack Dimensions [mm]



currently available Trays

designation (Art.-No)	dimensions l x b [mm]
○3 rack tray (7814)	255,7 x 68,4
○10 rack tray (7351)	252,7 x 217,5

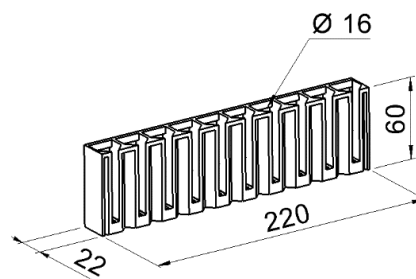
STIWA

Transport Racks



- additional tray necessary
- dimensions of the tray may vary

Rack Dimensions [mm]



currently available Trays

designation (Art.-No)	dimensions l x b [mm]
○ 5 rack tray (7348)	228,8 x 152,9
○ 15 rack tray (7461)	370,4 x 228,8

Validated Racks

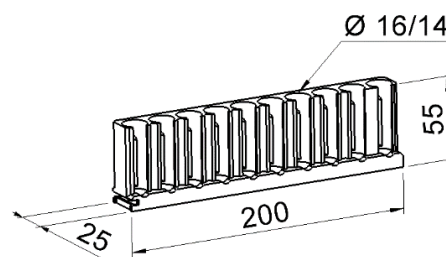
Sysmex

Racks for Hematology Analyzer



- additional tray necessary
- dimensions of the tray may vary

Rack Dimensions [mm]

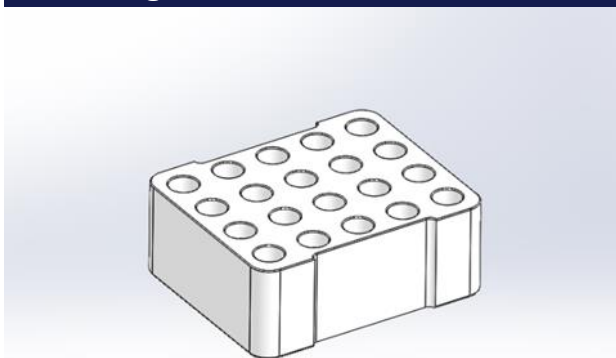


currently available Trays

designation (Art.-No)	dimensions l x b [mm]
○ 3 rack tray (7365)	250,6 x 85,2
○ 4 rack tray (7363)	250,1 x 110,4
○ 5 rack tray (7347)	250,1 x 135,6
○ 6 rack tray (7350)	258,1 x 154,9
○ 13 rack tray (7555)	370,4 x 210,8

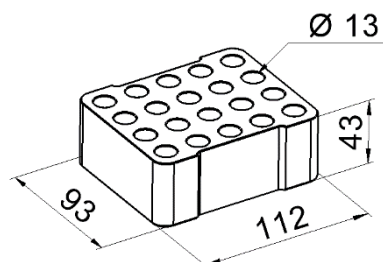
Thermo Fisher

Centrifuge Rack



- additional tray optional when using more than one rack per module
- dimensions of the tray may vary

Rack Dimensions [mm]



currently available Trays

designation (Art.-No)	dimensions l x b [mm]
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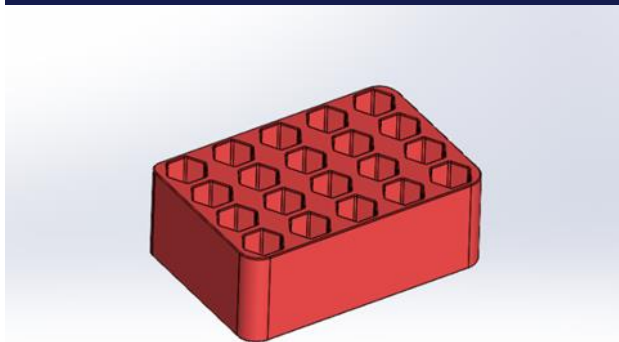
○ -

-

Validated Racks

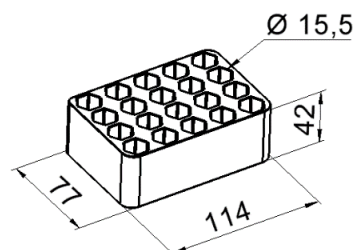
Thermo Fisher

TCA Standard Rack



- additional tray optional when using more than one rack per module
- dimensions of the tray may vary

Rack Dimensions [mm]



currently available Trays

designation (Art.-No)	dimensions l x b [mm]
○ -	-

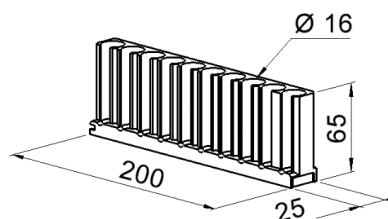
Tosoh

AIA-Racks



- additional tray necessary
- dimensions of the tray may vary

Rack Dimensions [mm]



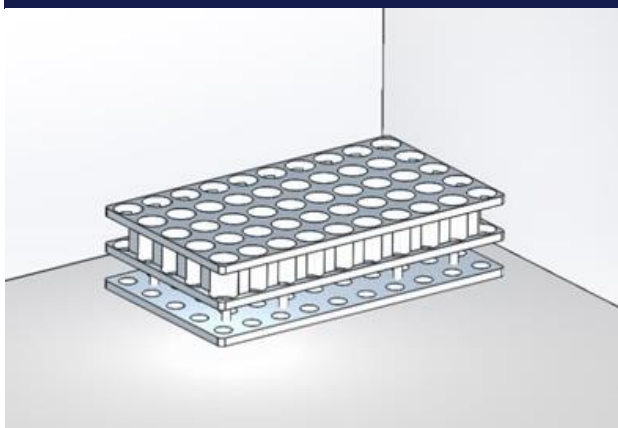
currently available Trays

designation (Art.-No)	dimensions l x b [mm]
○ see Sysmex	-

Validated Racks

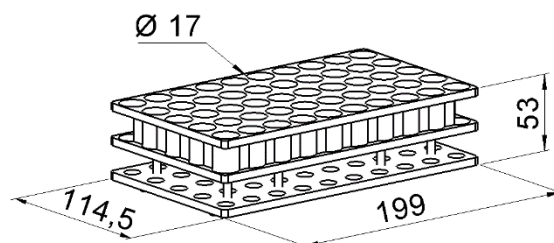
Others

Muestra Rack Anicrin



- no tray needed

Rack Dimensions [mm]

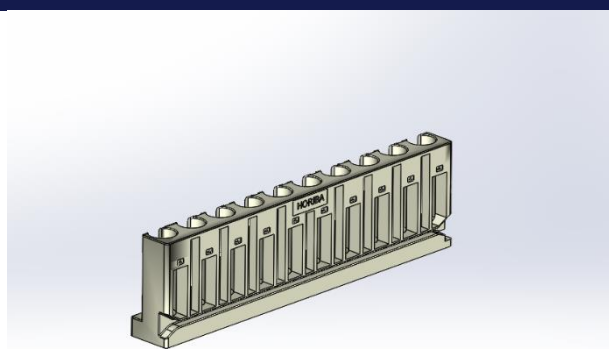


currently available Trays

designation (Art.-No)	dimensions l x b [mm]
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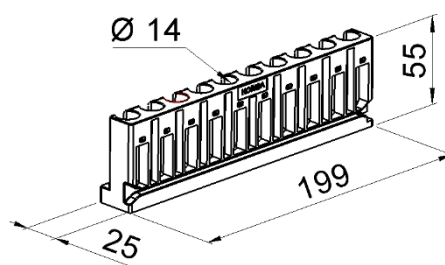
no tray needed	-
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Horiba



- additional tray necessary
- dimensions of the tray may vary

Rack Dimensions [mm]



currently available Trays

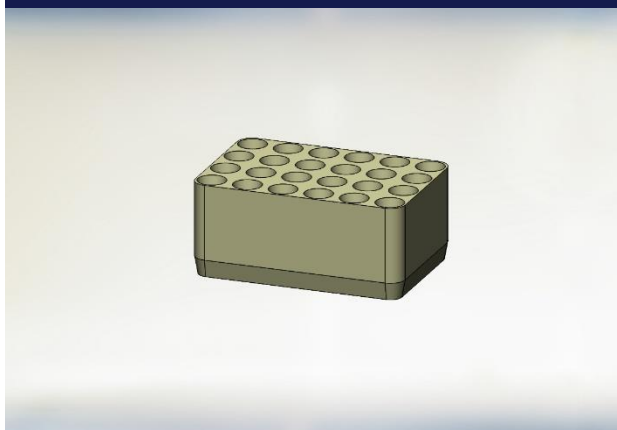
designation (Art.-No)	dimensions l x b [mm]
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Q4 rack tray (7965)	250 x 110
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Validated Racks

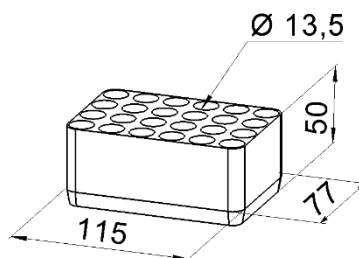
Others

Vitros



- additional tray necessary
- dimensions of the tray may vary

Rack Dimensions [mm]

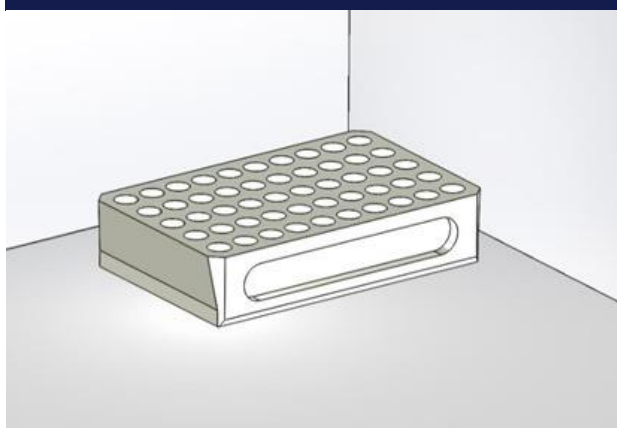


currently available Trays

designation (Art.-No)	dimensions l x b [mm]
Q3 rack tray (7861)	285 x 127

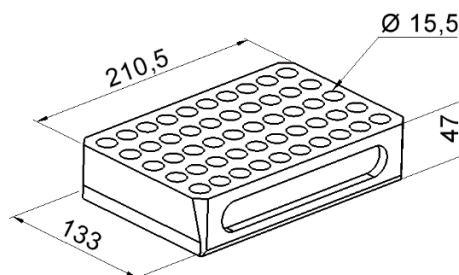
Unknown

Custom No. 1



- no tray needed

Rack Dimensions [mm]



currently available Trays

designation (Art.-No)	dimensions l x b [mm]
no tray needed	-