

## Air Exchange Verification

LUMESS

MAM Cleanroom Measurement



In the following, all times are shown in local time with the corresponding UTC offset.

Print date: 08 Apr 2025 14:20:26 (Europe/Berlin (UTC +2:00))

Page 1 of 4

### Protocol sheet

#### Overview of Air Exchange Verification

Master data								Measurement result	Result
Level	Room	Room name	Cleanroom classification	Count OF 1)	Room volume [m³]	ACH technical design 2) [1/h]	Minimum air exchange rate [1/h]	measured air exchange [1/h]	OCRN 3)
Building: DEMO Geb01									
Department: LPF									
200	DEMO R28	Washing area	ISO 7.0	6	161.6	20.0	20.0	20.2	O
<p>*) red: Result not i.O.</p> <p>1) Total Number of measured outlets</p> <p>2) Technical design of the room</p> <p>3) Measured air exchange <math>\geq</math> Minimum ACH</p>									

## Air Exchange Verification

LUMESS

MAM Cleanroom Measurement



In the following, all times are shown in local time with the corresponding UTC offset.

Print date: 08 Apr 2025 14:20:26 (Europe/Berlin (UTC +2:00))

Page 2 of 4

### Protocol sheet

#### Air Exchange Rate Verification

<b>Building</b>	DEMO Geb01	<b>Level</b>	200	<b>Room</b>	DEMO R28	<b>Cleanroom classification</b>	ISO 7.0
<b>Acceptance criteria</b>	<b>Minimum ACH</b>	20.0 [1/h]	<b>Target air volume</b>	3232.00 [m³/h]	<b>Count OF</b>	6	
<b>Room data</b>	<b>Area</b>	46.16 [m²]	<b>Height</b>	3.50 [m]	<b>Volume</b>	161.6 [m³]	
<b>Measuring device name</b>	<b>Measuring device type</b>	<b>Calibrated until</b>	<b>Absolute measuring device deviation</b>	<b>Relative measuring device deviation [%]</b>			
BM_Ext_003	Balometer	04 Nov 2025	0.000	0.000			

## Air Exchange Verification

LUMESS

MAM Cleanroom Measurement



In the following, all times are shown in local time with the corresponding UTC offset.

Print date: 08 Apr 2025 14:20:26 (Europe/Berlin (UTC +2:00))

Page 3 of 4

### Protocol sheet

Measurement point	Group	Type	Measurement method	Air volume measured [m³/h]	Percentage Supply air [%]	Supply air volume [m³/h]	Begin measurement:	Measurer Participants	Tolerance criterion Deviation mean value of the group	Deviation Group mean [%]	Comment measurer
Measure. point group: DEMO Room G01 R28 Air Exchange Rate											
DEMO R28-F10	A	Zuluft	Air FLOW Hood	537.0	100	537.0	06 Apr 2025 13:03:17 +02:00	jpublic	≥ 0%	-1.5	
DEMO R28-F11	A	Zuluft	Air FLOW Hood	582.1	100	582.1	06 Apr 2025 13:02:58 +02:00	jpublic	≥ 0%	6.8	
DEMO R28-F12	A	Zuluft	Air FLOW Hood	523.0	100	523.0	06 Apr 2025 13:03:07 +02:00	jpublic	≥ 0%	-4.1	
DEMO R28-F13	A	Zuluft	Air FLOW Hood	604.3	100	604.3	06 Apr 2025 13:02:47 +02:00	jpublic	≥ 0%	10.9	
DEMO R28-F14	A	Zuluft	Air FLOW Hood	483.0	100	483.0	06 Apr 2025 13:02:36 +02:00	jpublic	≥ 0%	-11.4	
DEMO R28-F15	A	Zuluft	Air FLOW Hood	541.0	100	541.0	06 Apr 2025 13:02:30 +02:00	jpublic	≥ 0%	-0.8	
Summary				3.270.4		3.270.4					

Group	Mean air volume per outlet [m³/h]
Measure. point group:	DEMO Room G01 R28 Air Exchange Rate
A	545.1

## Air Exchange Verification

LUMESS

MAM Cleanroom Measurement



In the following, all times are shown in local time with the corresponding UTC offset.

Print date: 08 Apr 2025 14:20:26 (Europe/Berlin (UTC +2:00))

Page 4 of 4

### Protocol sheet

Level	Room	ACH technical design [1/h] **)	ACH technical measured [1/h] **)	Minimum air exchange rate [1/h]	Measured air exchange [1/h]	Deviation [%]	Result OCRN *)
Department	LPF						
200	DEMO R28	20.0	20.2	20.0	20.2	1.00	O
*) red: Result not i.O.							

Measured by: Public, Jane (jpublic)

Participants: n.d. n.d.