



## Recommended Airflow Measurements For M.I.C.E.<sup>®</sup> , OptiMICE<sup>®</sup> , ErgoMICE<sup>®</sup> , & OptiRAT<sup>®</sup> Racks

Each Animal Care Systems rack should be tested after installation to ensure that airflow through the rack meets or exceeds minimum flow requirements. Racks holding small rodents should achieve at least 15-20 Air Changes per Hour (ACH) after hookup to the animal room exhaust. 30 ACH will allow longer cage-changing periods and requires more airflow through the cages. Larger rodents such as rats and guinea pigs require higher airflows due to the greater evaporative transpiration from the animals. The tables below identify both the MINIMUM and the RECOMMENDED hose air velocity measurement for achieving good airflows in the M.I.C.E., OptiMICE, ErgoMICE, and OptiRAT racks. Minimum flows are equivalent to 15-20 ACH with mice cages. Recommended flows are approximately 25-30 ACH. M.I.C.E. rat racks and OptiRAT racks require higher minimum airflows due to increased cage volume and housed animal mass.

Airflow measurements noted in the tables below must be made with an M79210 ACS Anemometer to assure accuracy. Contact Animal Care Systems for assistance if an installation does not achieve the noted MINIMUM values noted in the table.

<b>OptiMICE / ErgoMICE / OptiRAT Rack Airflow Data</b>					
<b>Rack Size</b>	<b>Hoses Per Rack</b>	<b>MINIMUM Air Volume Needed From Rack Exhaust</b>	<b>MINIMUM Anemometer Measurement Per Hose</b>	<b>RECOMMENDED Air Volume Needed From Rack Exhaust</b>	<b>RECOMMENDED Anemometer Measurement Per Hose</b>
OptiMICE – 100 Cage	2	40 CFM	3.5 m/s	60 CFM	5.25 m/s
ErgoMICE – 80 Cage	2	34 CFM	3.0 m/s	51 CFM	4.5 m/s
ErgoMICE – 70 Cage	2	30 CFM	2.6 m/s	45 CFM	3.9 m/s
ErgoMICE – 50 Cage	1	22 CFM	3.8 m/s	33 CFM	5.7 m/s
OptiRAT – 42 Cage	2	55 CFM	4.8 m/s	82 CFM	7.2 m/s

**Note:** the 50-cage ErgoMICE rack uses only one hose for ventilation. The other hose connection is capped with M21080 Ceiling Flange Cap.

<b>M.I.C.E. Mouse Rack Airflow Data</b>					
<b>Rack Size</b>	<b>Hoses Per Rack</b>	<b>MINIMUM Air Volume Needed From Rack Exhaust</b>	<b>MINIMUM Anemometer Measurement Per Hose</b>	<b>RECOMMENDED Air Volume Needed From Rack Exhaust</b>	<b>RECOMMENDED Anemometer Measurement Per Hose</b>
S1, 14-Cage	1	8 CFM	1.3 m/s	12 CFM	2.0 m/s
S2, 28-Cage	1	16 CFM	2.6 m/s	24 CFM	3.9 m/s
S3, 42-Cage	1(2)	24 CFM	3.9 m/s	36 CFM	5.9 m/s
S4, 56-Cage	2	32 CFM	2.6 m/s	48 CFM	3.9 m/s
S5, 70-Cage	2	40 CFM	3.2 m/s	60 CFM	4.8 m/s
D4, 56-Cage	2	32 CFM	2.6 m/s	48 CFM	3.9 m/s
D6, 84-Cage	2	48 CFM	3.9 m/s	72 CFM	5.9 m/s
D8, 112-Cage	2(3)*	64 CFM	5.2(3.5) m/s	96 CFM	7.8(5.25) m/s
D10, 140-Cage	2(3)*	80 CFM	6.5(4.3) m/s	120 CFM	9.8(6.5) m/s

\*Some situations with less than ideal room ventilation may require three exhaust hoses on D8 112-Cage and D10 140-Cage racks.

<b>M.I.C.E. Rat Rack Airflow Data</b>					
<b>Rack Size</b>	<b>Hoses Per Rack</b>	<b>MINIMUM Air Volume Needed From Rack Exhaust</b>	<b>MINIMUM Anemometer Measurement Per Hose</b>	<b>RECOMMENDED Air Volume Needed From Rack Exhaust</b>	<b>RECOMMENDED Anemometer Measurement Per Hose</b>
S1, 7-Cage	1	12 CFM	1.9 m/s	18 CFM	2.9 m/s
S2, 14-Cage	1	24 CFM	3.8 m/s	36 CFM	5.7 m/s
S3, 21-Cage	1(2)	36 CFM	5.7(2.9) m/s	54 CFM	8.5(4.4) m/s
S4, 28-Cage	2	48 CFM	3.8 m/s	72 CFM	5.7 m/s
S5, 35-Cage	2	60 CFM	4.9 m/s	90 CFM	7.3 m/s
D4, 28-Cage	2	48 CFM	3.8 m/s	72 CFM	5.7 m/s
D6, 42-Cage	2	72 CFM	5.7 m/s	108 CFM	8.5 m/s
D8, 56-Cage	2(3)**	96 CFM	7.8(5.2) m/s	144 CFM	11.7(7.8) m/s
D10, 70-Cage	2(3)**	120 CFM	9.7(6.5) m/s	180 CFM	14.5(9.7) m/s

\*\*Some situations with less than ideal room ventilation may require three exhaust hoses on D8 56-Cage and D10 70-Cage rat racks.