



Designed by ORIENTAL in Tokyo

Fume Hood

Fume hood with ergonomic design and maximum safety

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Check our product website

You can access to the website that provides details of product features.





Designed by **ORIENTAL** in **TOKYO**

Fume hoods are important for ensuring the safety of researchers. ORIENTAL is not only committed to fully satisfying all safety and functional requirements that are global standards but also encourages researchers through all five senses, to boost their intellectual and creative capacities. By leveraging its insights and know-how cultivated throughout its history of nearly 50 years, serving researchers by focusing on fume hoods, ORIENTAL is constantly introducing novel values into its fume hoods.

| **MAXIMUM SAFETY**

The most crucial function of a fume hood that determines its safety is optimal airflow control for isolating hazardous substances while simultaneously achieving efficient ventilation. This airflow control technology for optimally regulating airflow

is our core technology, and so R&D is conducted continuously to perfect it.

We actively adapt to various International standards.



| **DESIGN THAT MOVES**

Our fume hoods incorporate ergonomic designs and features that reduce the physical burden and mental stress for researchers, in addition to delivering superb safety, operability, and other essential functions.

We have designed curved, gentle shapes for its fume hoods, and offers unique color options typically not found in laboratory equipment. The design is intended to stimulate researchers' imagination and hint at the future society that will emerge.



PROVEN CONTAINMENT PERFORMANCE

We have own fully equipped test rooms that are compatible with EN (Europe) and ASHRAE (U.S.) standards.

All of our fume hoods are thoroughly tested to make sure their containment performance is reliable based on international standards.

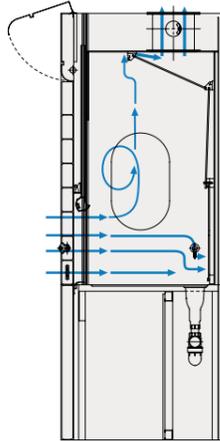
Proprietary airflow control technology for an enhanced containment performance

With traditional fume hoods, gases tend to remain stagnant along the work surface as well as on the walls inside the cabinet, causing reflux. This has been a major factor that compromises their enclosure performance. To address this, our low airflow

fume hoods provide an auxiliary airflow in each of those locations to enhance the containment performance, even at low airflow rates. This significantly outperforms the recommended thresholds of the German BG RCI standards of 0.65 ppm

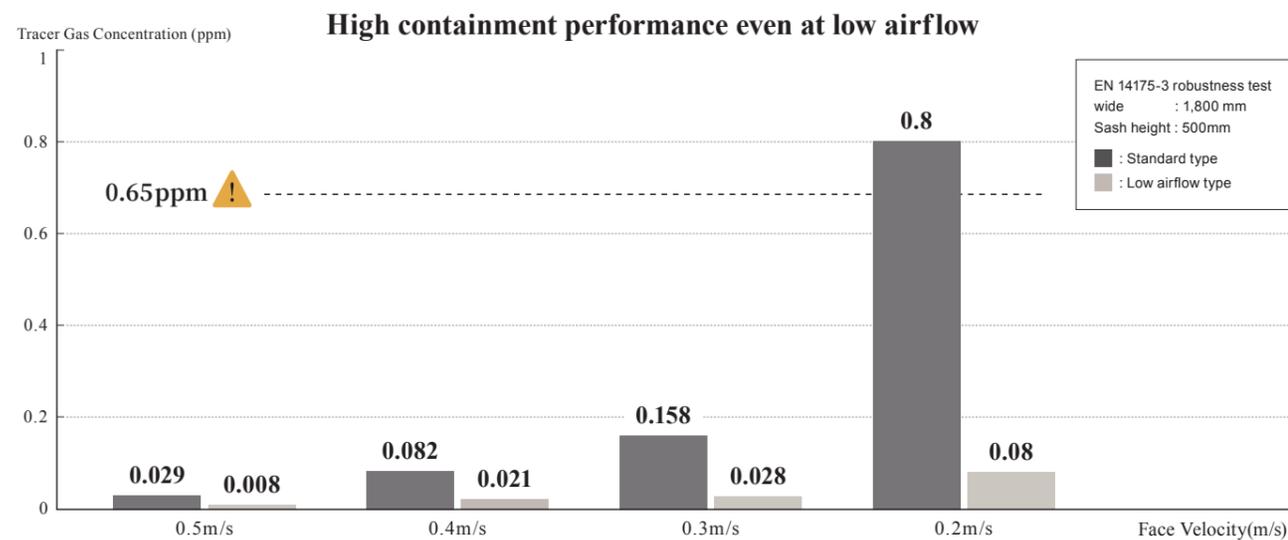
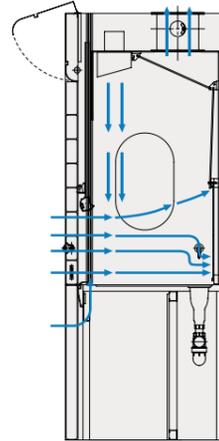
Traditional Fume Hood

The airflow pattern on traditional fume hoods demonstrate the tendency for contaminants generated in the interior to roll forward producing high concentrations of contaminants behind the sash in close proximity to the user's breathing zone.



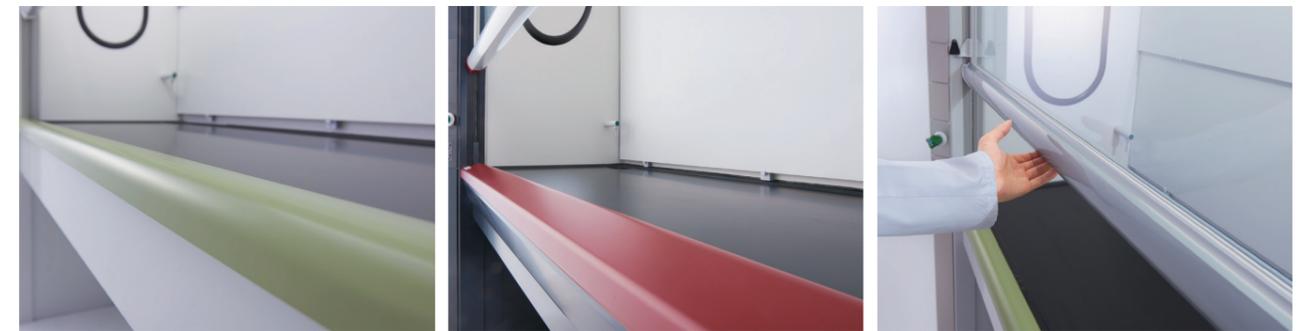
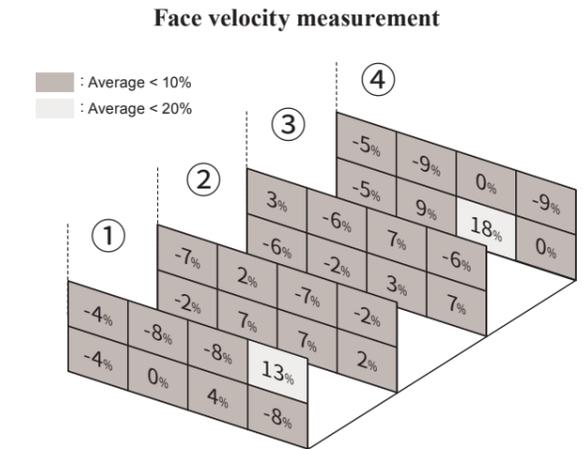
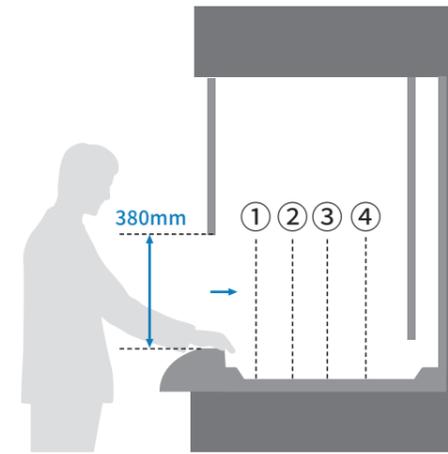
ORIENTAL Low Airflow Fume Hood

In contrast, the airflow pattern on our low airflow fume hood show contaminants removed in a single pass and a lack of turbulence. Horizontal air flowing toward the baffle forces contaminants to the rear interior, away from the user. The upper air supply sweeps the upper interior to eliminate stagnant pockets of air and to prevent contaminants from concentrating behind the sash.



An unique airfoil and baffle mechanism achieves a stable airflow

An airfoil and baffle mechanism is implemented to create optimal airflow patterns. The face velocity across all points falls within $\pm 20\%$ of the average velocity, indicating that the laminar flows are uniform.



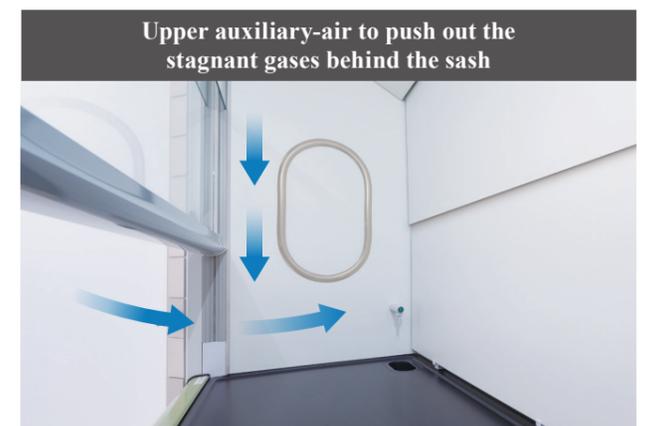
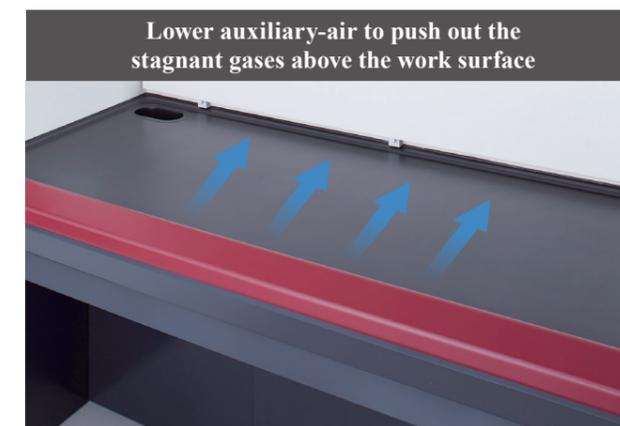
Unique auxiliary airflow for enhanced containment

A fume hood typically encounters lower velocity due to air resistance around the work surface by the front sash opening and also behind the sash inside the hood, leading to gas stagnation and reflux.

in low airflow fume hood to prevent this gas stagnation and reflux.

This function is key for achieving enhanced containment performance, by generating additional airflows.

To address this, we have implemented twin auxiliary-air function



SAFETY FEATURES

Various functions ensure the safety of operators and create a confidence-inspiring environment that allows them to focus on their research.

| Safety mechanisms come standard with all types in case of emergency.

Fume hoods must handle a variety of hazardous substances, so our fume hoods come with safety mechanisms that mitigate health risks and prevent serious accidents to protect the operators, anticipating all kinds of emergency.



Ribbed work surface

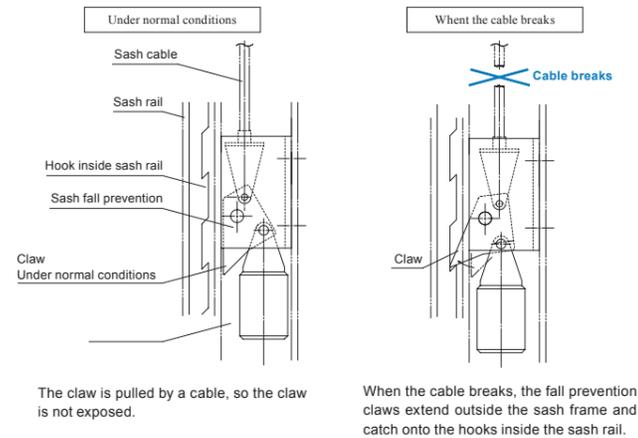
Ribbed work surface with marine edge comes standard with our fume hoods. This feature prevents injury to the operator and damage to the laboratory if any corrosive or irritative liquid, etc. spills.



Sash stopper

Sash stoppers come standard with all models, preventing the sashes from opening beyond designed sash height. This mechanism mitigates the risk of operators becoming exposed to hazardous substances if the sash is opened too high.

Sash fall prevention mechanism PATENT



This sash fall prevention mechanism comes standard with all models to keep the sashes in the proper position in case a sash cable accidentally breaks.



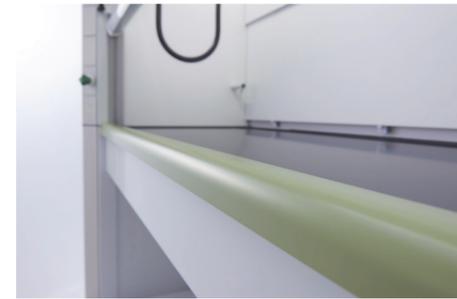
Tempered glass

The tempered glass used in our fume hoods has a compressed layer on the surface that is formed by heating up and then quickly cooling sheet glass. Even if the glass breaks, it only fragments into small granular pieces, ensuring superb safety.

| Interior materials

Gypsum boards, which are an incombustible material*, are used in the hood interior and baffle plates. They are finished with urethane resin coatings, which offer superb chemical resistance.

*Incombustible material, as defined in the Building Standards Act of Japan, is a material that meets the following requirements after being heated for at least 20 minutes:
1. does not combust;
2. does not deform, melt, crack, or sustain any other damage compromising fire prevention performance;
3. does not emit smoke or gas that hinders evacuation.

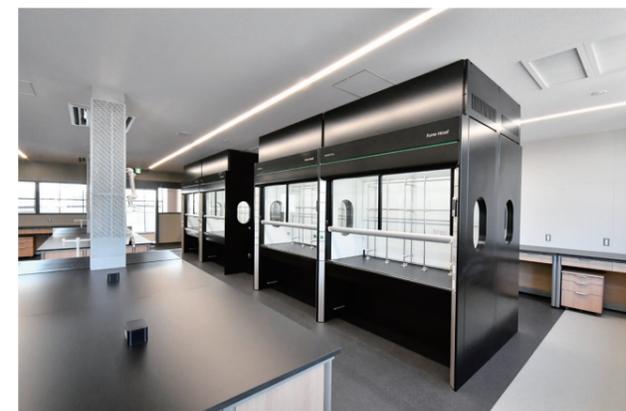
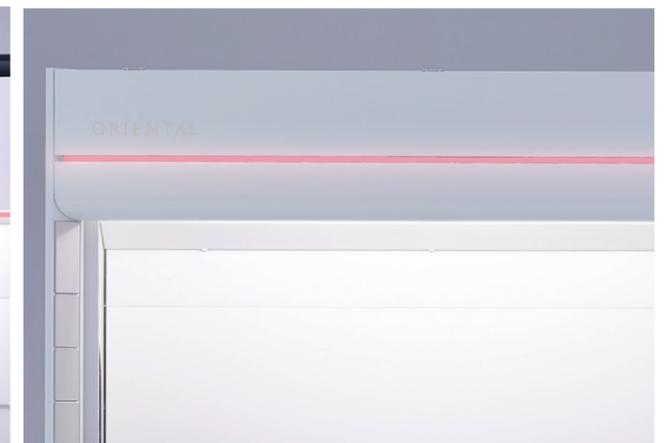


Chemical-resistance performance		
Chemical name	Test duration	Result
Benzene	2 hours	No change
Lacquer thinner	6 hours	Gloss change
5% Hydrochloric acid	6 hours	No change
5% Sulfuric acid	6 hours	No change
5% Nitric acid	6 hours	No change
5% Acetic acid	6 hours	No change
5% Sodium hydroxide	6 hours	No change
1% Sodium carbonate	6 hours	No change
Methyl ethyl ketone	6 hours	No change
Butyl acetate	6 hours	No change
Sodium hypochlorite	6 hours	No change
Ethanol	6 hours	No change

*test method : After dropping chemical onto the test piece and leaving it for the specified time, wipe off the chemical and observe the visual changes in the surface.

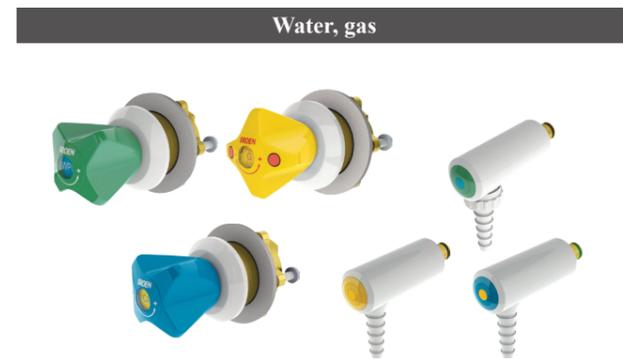
| Emergency lamps for intuitive error monitoring (option)

The emergency lamps allow for simple and intuitive monitoring of any errors. If the face velocity drops or any other anomaly arises that might cause the risk of exposure, it can be swiftly detected.



OPTIONS

There is a wide line-up of options that further enhance the convenience of laboratory operations. They can be set up in different combinations for various applications.



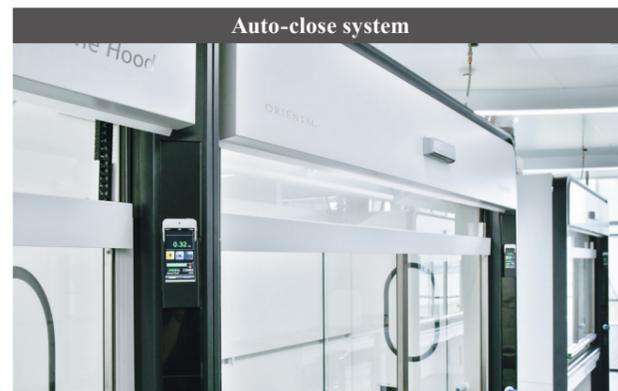
Remote valves and nozzles for water and special gases with superb chemical resistance can be additionally installed. Their media indications are compatible with EN13792.



Each fume hood is equipped with power outlets on the utility panels on both sides. The type and number of outlets can be changed to suit the application.



Combination sashes, which are often used in synthesis experiments, etc., are also available. If such a set-up is selected, the equipment inside the cabinet can be accessed through the sliding horizontal sashes, with the vertical sash closed.



The auto-close system uses sensors to detect people and automatically close the sashes and stop the fume hood operation if there is no one around, reducing costs.



Scaffolding is useful when assembling devices and equipment in organic synthesis experiments, etc. They can be installed inside the hood as optional components of fume hoods.



The interior material can be switched to stainless steel for applications involving ionizing radiation, etc.

| Base selection

There is a selection of different bases to choose from to match the research style. A safety cabinet can be also installed in the base.



Mobile storage cabinet



Fixed storage cabinet



Fixed storage cabinet (overall)

| Work surface selection

For the work surface, there is a line-up of four different materials to choose from, to best suit the chemicals and applications involved.



This work surface is made of a rigid composite material consisting of epoxy resin and inert filler, mixed and molded together. It is highly resistant to most chemicals, does not conduct electricity, and possesses high physical strength. It provides an optimal work surface without the risk of cracking and breakage.



This work surface is a ceramic plate, whose main materials are silica sand and powder glass, fired at approx. 1100°C. In addition to superb chemical resistance, it offers incombustibility, anti-abrasion, non-conductivity, and other advantages.



This work surface is made of stainless steel, which offers superb resistance to contamination and water. The interior of the cabinet can be easily washed and decontaminated. It is optimal for RI fume hoods.



This work surface is made of PVC, which offers excellent resistance to any strong acidic and corrosive gases that may arise inside the cabinet, and can be easily cleaned by washing and wiping with tap water.



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NOCE

 GOOD DESIGN

What is GOOD DESIGN AWARD?

"An only comprehensive design evaluation and promotion mechanism in Japan. Together with G Mark, it has been recognized by a wide range of people for more than 60 years, and has continued its activities to make people's lives and society better through design." Quoted from Japan Institute of Design Promotion website

NOCE

Standard type / Low airflow type

Standard model of NOCE series fume hood



	Standard type			Low airflow type		
Model	W_NCG-ST-1200E	W_NCG-ST-1500E	W_NCG-ST-1800E	W_NCR-ST-1200E	W_NCR-ST-1500E	W_NCR-ST-1800E
Outer dimensions (W×D×H mm)	1200×830×2200	1500×830×2200	1800×830×2200	1200×830×2200	1500×830×2200	1800×830×2200
Weight (kg)	280	320	360	280	320	360
Face velocity 380mm high (m/s)	0.5			0.25–0.3		
Total exhaust volume (m ³ /min)	14	18	22	9–10	11–13	13–16
Exhaust port (mm)	φ200	φ250		φ200		
Duct diameter (mm)	φ200	φ250		φ200		
Exterior	Electrogalvanized steel plate (steel electrolytic cold commercial: SECC); baked finish with chemical resistant coating					
Interior	Thermal and chemical resistant gypsum boards (asbestos content: 0%)					
Baffle plates	Thermal and chemical resistant gypsum boards (asbestos content: 0%)					
Work surface	Epoxy / ceramic / stainless steel (SUS304) / rigid polyvinyl chloride					
Sashes	Tempered glass 5t, balance weight system, with sash fall prevention mechanism, handles (finished with chemical resistant coating)					
Airfoil	Made of aluminum, finished with chemical resistant coating					
Water supply	Remote control					
Nozzle	1 unit installed, finished with epoxy powder coating					
LED lighting	20W×1 unit equivalent	40W×1 unit equivalent		20W×1 unit equivalent	40W×1 unit equivalent	
Power outlets	100–230 VAC outlets *Electrical specifications vary depending on the customer.					
Exhaust fan	Not included					
Dimensional drawing						

NOCE

VAV type / VAV low airflow type

Variable air volume (VAV) type that offers high energy-saving effect



Model	VAV type			VAV low airflow type				
	W_NCV-A-1200E	W_NCV-A-1500E	W_NCV-A-1800E	W_NCR-A-1200E	W_NCR-A-1500E	W_NCR-A-1800E		
Outer dimensions (W×D×H mm)	1200×830×2200	1500×830×2200	1800×830×2200	1200×830×2200	1500×830×2200	1800×830×2200		
Weight (kg)	280	320	360	280	320	360		
Face velocity 380mm high (m/s)	0.5			0.25-0.3				
Total exhaust volume (m ³ /min)	14	18	22	9-10	11-13	13-16		
Exhaust port (mm)	φ200	φ250		φ200				
Duct diameter (mm)	φ200	φ250		φ200				
Exterior	Electrogalvanized steel plate (steel electrolytic cold commercial: SECC); baked finish with chemical resistant coating							
Interior	Thermal and chemical resistant gypsum boards (asbestos content: 0%)							
Baffle plates	Thermal and chemical resistant gypsum boards (asbestos content: 0%)							
Work surface	Epoxy / ceramic / stainless steel (SUS304) / rigid polyvinyl chloride							
Sashes	Tempered glass 5t, balance weight system, with sash fall prevention mechanism, handles (finished with chemical resistant coating)							
Airfoil	Made of aluminum, finished with chemical resistant coating							
Water supply	Remote control							
Nozzle	1 unit installed, finished with epoxy powder coating							
LED lighting	20W×1 unit equivalent	40W×1 unit equivalent		20W×1 unit equivalent	40W×1 unit equivalent			
Power outlets	100-230 VAC outlets *Electrical specifications vary depending on the customer							
Exhaust fan	Not included							
Dimensional drawing								
	<p>Area for piping from ceiling</p>		<p>Area for piping from floor</p>		<p>Area for piping from ceiling</p>		<p>Area for piping from floor</p>	
VAV control system	VAV controller: 1 unit, damper unit: 1 unit, sash sensor: 1 unit, display monitor: 1 unit							

NOCE

Low surface type / Walk-in type

Optimal type for accommodating large equipment



	Low surface type			Walk-in type		
Model	W_NCG-LT-1200E	W_NCG-LT-1500E	W_NCG-LT-1800E	W_NCG-WT-1200E	W_NCG-WT-1500E	W_NCG-WT-1800E
Outer dimensions (W×D×H mm)	1200×830×2350	1500×830×2350	1800×830×2350	1200×830×2200	1500×830×2200	1800×830×2200
Weight (kg)	305	355	405	290	340	390
Face velocity 380mm high (m/s)	0.5					
Total exhaust volume (m ³ /min)	19	23.5	29	16	21	25
Exhaust port (mm)	φ250		φ300	φ250		φ300
Duct diameter (mm)	φ250		φ300	φ250		φ300
Exterior	Electrogalvanized steel plate (steel electrolytic cold commercial: SECC); baked finish with chemical resistant coating					
Interior	Thermal and chemical resistant gypsum boards (asbestos content: 0%)					
Baffle plates	Thermal and chemical resistant gypsum boards (asbestos content: 0%)					
Work surface	Epoxy / ceramic / stainless steel (SUS304) / rigid polyvinyl chloride					
Sashes	Tempered glass 5t, balance weight system, with sash fall prevention mechanism, handles (finished with chemical resistant coating)					
Airfoil	Made of aluminum, finished with chemical resistant coating					
Water supply	Remote control					
Nozzle	1 unit installed, finished with epoxy powder coating					
LED lighting	20W×1 unit equivalent	40W×1 unit equivalent		20W×1 unit equivalent	40W×1 unit equivalent	
Power outlets	100–230 VAC outlets *Electrical specifications vary depending on the customer					
Exhaust fan	Not included					
Dimensional drawing						

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Fume Hood

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Fume Hood

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Fume Hood

RACINE

RACINE

Standard type / Low airflow type

Standard model of RACINE series fume hood



	Standard type			Low airflow type		
Model	W_RCG-ST-1200E	W_RCG-ST-1500E	W_RCG-ST-1800E	W_RCR-ST-1200E	W_RCR-ST-1500E	W_RCR-ST-1800E
Outer dimensions (W×D×H mm)	1200×830×2200	1500×830×2200	1800×830×2200	1200×830×2200	1500×830×2200	1800×830×2200
Weight (kg)	280	320	360	280	320	360
Face velocity 380mm high (m/s)	0.5			0.25–0.3		
Total exhaust volume (m3/min)	14	18	22	9–10	11–13	13–16
Exhaust port (mm)	φ200	φ250		φ200		
Duct diameter (mm)	φ200	φ250		φ200		
Exterior	Electrogalvanized steel plate (steel electrolytic cold commercial: SECC); baked finish with chemical resistant coating					
Interior	Thermal and chemical resistant gypsum boards (asbestos content: 0%)					
Baffle plates	Thermal and chemical resistant gypsum boards (asbestos content: 0%)					
Work surface	Epoxy / ceramic / stainless steel (SUS304) / rigid polyvinyl chloride					
Sashes	Tempered glass 5t, balance weight system, with sash fall prevention mechanism, handles (finished with chemical resistant coating)					
Airfoil	Made of aluminum, finished with chemical resistant coating					
Water supply	Remote control					
Nozzle	1 unit installed, finished with epoxy powder coating					
LED lighting	20W×1 unit equivalent	40W×1 unit equivalent		20W×1 unit equivalent	40W×1 unit equivalent	
Power outlets	100–230 VAC outlets *Electrical specifications vary depending on the customer					
Exhaust fan	Not included					
Dimensional drawing						

RACINE

VAV type / VAV low airflow type

Variable air volume (VAV) type that offers high energy-saving effect



Model	VAV type			VAV low airflow type		
	W_RCV-A-1200E	W_RCV-A-1500E	W_RCV-A-1800E	W_RCR-A-1200E	W_RCR-A-1500E	W_RCR-A-1800E
Outer dimensions (W×D×H mm)	1200×830×2200	1500×830×2200	1800×830×2200	1200×830×2200	1500×830×2200	1800×830×2200
Weight (kg)	280	320	360	280	320	360
Face velocity 380mm high (m/s)	0.5			0.25-0.3		
Total exhaust volume (m3/min)	14	18	22	9-10	11-13	13-16
Exhaust port (mm)	φ200	φ250		φ200		
Duct diameter (mm)	φ200	φ250		φ200		
Exterior	Electrogalvanized steel plate (steel electrolytic cold commercial: SECC); baked finish with chemical resistant coating					
Interior	Thermal and chemical resistant gypsum boards (asbestos content: 0%)					
Baffle plates	Thermal and chemical resistant gypsum boards (asbestos content: 0%)					
Work surface	Epoxy / ceramic / stainless steel (SUS304) / rigid polyvinyl chloride					
Sashes	Tempered glass 5t, balance weight system, with sash fall prevention mechanism, handles (finished with chemical resistant coating)					
Airfoil	Made of aluminum, finished with chemical resistant coating					
Water supply	Remote control					
Nozzle	1 unit installed, finished with epoxy powder coating					
LED lighting	20W×1 unit equivalent	40W×1 unit equivalent		20W×1 unit equivalent	40W×1 unit equivalent	
Power outlets	100-230 VAC outlets *Electrical specifications vary depending on the customer					
Exhaust fan	Not included					
Dimensional drawing						
VAV control system	VAV controller: 1 unit, damper unit: 1 unit, sash sensor: 1 unit, display monitor: 1 unit					

RACINE

Low surface type / Walk-in type

Optimal type for accommodating large equipment



	Low surface type			Walk-in type			
Model	W_RCG-LT-1200E	W_RCG-LT-1500E	W_RCG-LT-1800E	W_RCG-WT-1200E	W_RCG-WT-1500E	W_RCG-WT-1800E	
Outer dimensions (W×D×H mm)	1200×830×2350	1500×830×2350	1800×830×2350	1200×830×2200	1500×830×2200	1800×830×2200	
Weight (kg)	305	355	405	290	340	390	
Face velocity 380mm high (m/s)	0.5						
Total exhaust volume (m3/min)	20	26	29	14	18	22	
Exhaust port (mm)	φ250		φ300	φ250		φ300	
Duct diameter (mm)	φ250		φ300	φ250		φ300	
Exterior	Electrogalvanized steel plate (steel electrolytic cold commercial: SECC); baked finish with chemical resistant coating						
Interior	Thermal and chemical resistant gypsum boards (asbestos content: 0%)						
Baffle plates	Thermal and chemical resistant gypsum boards (asbestos content: 0%)						
Work surface	Epoxy / ceramic / stainless steel (SUS304) / rigid polyvinyl chloride			Epoxy			
Sashes	Tempered glass 5t, balance weight system, with sash fall prevention mechanism, handles (finished with chemical resistant coating)						
Airfoil	Made of aluminum, finished with chemical resistant coating						
Water supply	Remote control						
Nozzle	1 unit installed, finished with epoxy powder coating						
LED lighting	20W×1 unit equivalent	40W×1 unit equivalent		20W×1 unit equivalent	40W×1 unit equivalent		
Power outlets	100–230 VAC outlets *Electrical specifications vary depending on the customer						
Exhaust fan	Not included						
Dimensional drawing							
	<p>Area for piping from ceiling</p>		<p>Area for piping from floor</p>		<p>Area for piping from ceiling</p>		<p>Area for piping from floor</p>

PP type / PVC type

Resin type offering superb corrosion resistance and maintainability



	PP type			PVC type		
Model	W_RGPP-1200	W_RGPP-1500	W_RGPP-1800	W_RGX-II-1200	W_RGX-II-1500	W_RGX-II-1800
Outer dimensions (W×D×H mm)	1200×750×2200	1500×750×2200	1800×750×2200	1200×750×2200	1500×750×2200	1800×750×2200
Weight (kg)	160	185	210	220	260	300
Face velocity 380 mm high (m/s)	0.5					
Total exhaust volume (m ³ /min)	13	17	20	13	17	20
Exhaust port (mm)	φ200	φ250		φ200	φ250	
Duct diameter (mm)	φ200	φ250		φ200	φ250	
Exterior	Polypropylene			Rigid polyvinyl chloride		
Interior	Polypropylene			Rigid polyvinyl chloride		
Sink	Polypropylene			Rigid polyvinyl chloride		
Sashes	Tempered glass 5t			Rigid polyvinyl chloride		
Water supply	Swing faucet for pure water, made of polypropylene			Swing faucet for pure water, made of rigid polyvinyl chloride		
LED lighting	20W×1 unit equivalent	40W × 1 unit equivalent		20W×1 unit equivalent	40W×1 unit equivalent	
Power outlets	100–230 VAC outlets *Electrical specifications vary depending on the customer					
Exhaust fan	Not included					
Dimensional drawing						