

Fume cupboard catalog card



Dimensions of cupboards

Height of the fume cupboard 2600 mm (height with ventilation spigot attached); the height of the fume cupboard itself (enclosure) is to be **2550** mm from the ground. Optionally, fume cupboards are available in a lowered version of 2250 mm (with ventilation spigot 2300 mm). 1. Plotis 1200, gylis 950, aukštis 2550 m

The required external widths of fume cupboards are **1200mm**, 1500mm, 1800mm, 2100mm,

The external depth of the fume hood is to be 900mm and **950mm** including the knobs of the water and gas valves and electrical outlets. Required to be able to install side covers to the fume cupboard, which increase its depth by 50mm and between the back of the working chamber and the wall, a space is created to run cables from the ceiling from the ceiling under the fume cupboard top.



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The inner depth measured from the inner plane of the glass of the movable window to the plane of the rear wall at the full height of the movable window is to be **800mm**. The inner width of the working chamber measured at half the depth of the working chamber as the outer width of the fume hood **minus 100mm**. Inner height of the working chamber measured from the surface of the tabletop to the lowest point of the ceiling or a ventilation system component mounted below it **1400mm**.

Construction of the fume hood

3. Pagaminta iš galvanizuoto plieno lakšto, kurio storis nuo 0,7 mm iki 1 mm

Modular fume cupboard, resistant to corrosion and chemicals, non-flammable, made entirely of steel sheet with a **thickness of 0.7 mm - 1 mm (base up to 2 mm), galvanized by (thickness of zinc layer minimum 2.5 µm), powder coated on both sides with polyurethane** varnish, applied by powder method (thickness of varnish layer 40µm - 120µm) in white color similar to RAL 260 90 05. Selected elements of the fume hood (window frames, spoilers and cover over the window, control panel) - color similar to RAL 00 20 00. Varnish on fume hoods smooth and matte (no texture, no lambent, no hammering, no gloss). Construction of fume cupboards and cabinets without use of any wood-based materials, aluminum profiles and sheets (except for the window frame) and steel hollow sections.

Fume hood with working chamber, including slanted ceiling, made entirely of galvanized steel with polyurethane coating in white.

A fume hood consisting of a working section (containing a working chamber with double side walls in which the water connections and pipes to them are located and a single rear wall) and a base in which cabinets can be installed and a drawer between the cabinets and the top.

Ventilation of the working chamber carried out only by means of **ventilation slots in the ceiling section, without a double back wall** (no form of additional ventilation duct, back shutter or double back wall of the working chamber shall be used). In order to avoid the formation of vapor stagnation in the corners of the working chamber, it must have all vertical corners (the entire height of the working chamber) beveled at an angle of about 45 degrees - a bevel of about 10 cm x 10 cm.

2. 250 mm

Stub for ventilation connection with a diameter of 250 mm, with protection against flooding of the fume hood chamber with condensate from the ventilation system and drainage of condensate to the sewer.

The ceiling of the working chamber slanted, made of the same material as the walls of the chamber or of frosted glass with a polypropylene channel for draining condensation formed on its upper surface.

The ceiling of the fume cupboard chamber is equipped with holes covered with caps, which serve to release excess pressure in the chamber, e.g., during an explosion.

Working chamber illuminated **by 500 lux LED lamps**, located 300mm (50mm for fume cupboards with a lowered chamber) **below the ceiling of the working chamber and above the window**, built into the front wall of the working chamber. Access to the lamps required only from the front of the fume hood.

Around the window opening (on the sides, above the edge of the countertop on the window frame) are to be placed aerofoils made of acid-resistant steel or galvanized steel with powder coating to improve the efficiency of ventilation of the working chamber.

An aerodynamic profile located at the fume hood top, having grommets for entering the working chamber with the window closed and holding the cables in a fixed position regardless of the position of the window. This profile must have openings that allow air into the working chamber under its aerodynamic shape.

Fume hood seated on **8 leveling feet**. Fume cupboard base made entirely of 1.5 mm - 2 mm thick galvanized or acid-resistant steel sheet of OH18N9 grade; powder-coated with polyurethane varnish, bent in such a way as to ensure the rigidity of the structure. Base to ensure that cabinets with a total width equal to the width of the fume hood minus 10 cm can be slid under it. Standing cabinets under the fume hood not connected to the fume hood structure and having 4 own leveling feet (each cabinet). In the case of ventilated cabinets, cabinets having a separate ventilation spigot led above the fume hood.

4. Gaminių paviršiai padengti poliuretano ilgaamžiu, mechaniniams pažeidimams atspariu laku, užtikrinančiu higienos priežiūros reikalavimų atitikimą. Spalva bus balta

17. Yra sistema viršslėgiui sumažinti

21. 500 lx LED

8. Yra mechanizmas, leidžiantis sustabdyti langą bet kurioje vertikaloje padėtyje.

7. Pagamintas iš 1,5 mm-2mm storio galvanizuoto plieno, suformuotas taip, jog užtikrina konstrukcijos standumą; turi 8 reguliuojamas kojeles.

Double fume hood window (triple for walk-in and lowered-top fume hoods): upper part fixed, lower (and possibly middle) sliding up and down.

Top glazing height 200 mm and width not less than the width of the fume hood minus 300 mm, plus the thickness of the frame. Window mounted in a frame made of bolted profiles made of aluminum. Frame powder-coated with chemically resistant paint. **Window glazed with VSG type safety glass (multi-layer laminated: glass-foil-glass) with a thickness of 6.38 mm**, framed with chemically resistant gaskets.

Movable bottom glazing with a height of 850 mm and a width of not less than the width of the fume hood minus 300 mm plus the thickness of the frame, in a frame made of bolted aluminum profiles. Possibility of opening the window to a height of 900 mm from the surface of the tabletop. Frame powder-coated with chemically resistant paint. **Glazing with VSG (multi-layer laminated glass: glass-foil-glass) safety glass with a thickness of 6,38 mm**. The bottom pane is made of one, two, three or four pieces of safety glass. The option with several pieces of glass, gives the possibility to move them horizontally.

11. Saugus
daugiasluoksnis
laminuotas stiklas,
6,38 mm storio

Movable window lifted by means of counterweight, either manually or by means of an electric motor (indication in the assortment list) and a system of two independent acid-resistant cables. The window counterweight and all components of the window lifting system (cables, counterweight, drive motor) located exclusively in the front panel of the fume hood (above the window opening) or in columns on the sides of the window. The distance of the window counterweight from the front plane of the fume hood is to be 100 mm. Lines guided only outside the working chamber. **9. Pakeltas, kad sulaikytų skysčių nuotėkį. Iš vientisos keramikos**

Countertop made of **monolithic cast ceramic** with integrated raised edging on all sides. Countertop having beveled corners - the shape of the countertop adapted to the cross-section of the working chamber (maximum use of space). Corners of the top beveled at an angle of 45 degrees on a section of 10 cm x 10 cm. On the beveled corner also raised edge. The width of the countertop matched to the width of the inner chamber of the fume hood. The thickness of the countertop is to be 28 +/- 2 mm on the entire surface of the flat part (thinner plates with ribbing are not used) and 35 +/- 2 mm of raised edging. Ceramic hardness: 7 on the Mohs scale, average absorbability not more than 5%, bulk density 2.17 g/cm³, average open porosity 10.1%, flexural strength not less than 44MPa, linear expansion not more than 0.7% in the range of 25 - 1200 degrees Celsius, compressive strength of not less than 130 MPa (average of a minimum of 10 samples), lead and cadmium emissions of less than 0.0005 mg/dm² - these parameters are to be confirmed by a test report from an accredited laboratory. Permissible load of the tabletop 200 kg. **Color of the tabletop blue.**

If indicated in the assortment list, closer to the front of the fume cupboard top set either one chemical beaker in blue, **placed along the right wall** of the working chamber, or two chemical beakers, along both walls of the working chamber. The **sinks are made of cast ceramic**. The furthest edge of the sink 450 mm from the front edge of the countertop and 180 mm from the side wall of the working chamber. The sink is glued into the countertop from the top **16. 8 vnt., plotis 95, ilgis 300 mm instaliavimo plokštelių, iš kurių pusė kairėje ir pusė dešinėje traukos spintelės pusėse.**

The fume hood is to be equipped with installation columns on the sides of the window, equipped with **8 installation panels with dimensions of 95mm x 300 mm** placed 4 each in the left and 4 in the right installation column of the fume hood (on the sides of the window). In addition, the fume hood is have at least 4 electrical outlets in the under-counter strip and 8 outlets on the back wall of the working chamber that are switched off and optionally programmed outside the fume hood working chamber. Each installation tray is to have the possibility of mounting at least: 2 230V electrical outlets, or 2 400V outlets, or 3 gas valve knobs, or a fume hood control panel. Cassettes to be mounted using the snap-in method (screw or slide-in mounting is forbidden) - mounted on hooks made of the same material as the cassette (4 hooks per cassette, without mounting on spring-loaded elements, plastic, sliding into guides, screwing, riveting, sliding in from above, etc.) and dismantled only by lifting them - each cassette is to have the possibility of dismantling without dismantling the other cassettes of the fume hood.

Electrical outlet flip-flops having a place to mount the outlet description, covered with transparent plastic, convex, white in color, UV resistant (i.e. no discoloration under UV lamps and sunlight).

Installation columns having opening whole fronts, in order to service elements located inside them. Fume cupboards having both sockets and whole and cassettes with sockets, with IP44 protection class.

23. Lizdų apsaugos klasė IP44

Cassettes with sockets having their own CE marking and made of galvanized steel, powder coated with polyurethane paint on both sides, with a plastic inner casing, connected to the internal installation of the fume cupboard with GST-type connectors with a locking device.

If indicated in the assortment list, full-extension drawer mounted under the working chamber of the fume hood. Equipped with self-drawing and brake function, made of the same materials as the fume hood structure. Height of the drawer front 150 mm. Handles of the drawer front with a length of 200 mm, and the space between the grip part and the cabinet front more than 25 mm. The grip part inclined from the vertical about 40 degrees, with a removable transparent plastic cover, under which a fiche can be inserted with a description of the contents of the drawer.

Media outlets in the chamber

Fittings for cold water - spout outlet in the front part of the working chamber. Terminations with unscrewable olive. Possibility of installing 3 spouts in each side wall of the working chamber. Spout exiting from the side wall of the working chamber **not further than 350mm**. From the front edge of the countertop. Height of the spout above the bottom of the sink 280mm. Valve located on the same side of the window as the spout, on a column next to the fume hood window. Valve color white, similar to RAL 260 90 05.

Fittings for gases - spout outlet in the front corner of the working chamber, next to the window, spouts set at an angle of about 45 degrees to the side wall of the fume hood, facing the rear wall, ending with an olive pointing vertically downwards. Possibility of installing up to 6 spouts (prepared holes) in each front corner of the working chamber. Valves are placed on a column next to the fume hood window. Valve placed on the same side of the window as the spouts, and in the same order from the countertop as the spouts. The color of the fittings is white, similar to RAL 260 90 05

Cabinets under the hood top

Under the top of the fume hood, can be installed various cabinets, according to the assortment list. Cabinets placed independently on the floor and not connected to the fume hood structure. Different types of cabinets are possible in each fume hood.

It is also possible that the fume cupboard is not equipped with a cabinet, in which case the space under the countertop is finished with covers covering the installation connections and allowing seated work at the fume hood.

Surveillance system - for manual lift window

Fume cupboard equipped with a monitoring system for the correct operation of ventilation in the fume cupboard located in the tray of the right side panel of the fume cupboard where the top edge is at a height of 1300 - 1600mm. The supervisory system equipped with a control panel with an alphanumeric LCD display of 80 x 30 mm, with the possibility of displaying a 5-digit measurement result or error code. **Control panel indicating: the current value of the air flow through the fume hood chamber in [m3/h] and warning of improper operation of the fume hood by means of an acoustic and visual alarm - no ventilation, too little, too much ventilation.** 18. Rodo oro srauto per darbinę kamerą greitį (m3/h); Yra garsinis ir vaizdinis signalas esant per mažam ar per dideliame vėdinimui; Yra vizualinis signalas, kai langas per daug pakeltas.

Supervision system having the function of turning on and off the fume hood, turning on and off the fume hood working chamber lighting without turning off the fume hood, turning off the acoustic alarm. Supervision system equipped with electrical backup in case of power failure, and having the ability to control the contactor of the external fan and send an on/off signal to the BMS.

The fume hood must have the ability to expand the control module with a VAV airflow controller.

Fume cupboards with the option of being equipped with a beaker management system in a closed system (working chamber - cabinet under the working chamber of the fume cupboard) with the function of analog

and electronic notification of the degree of filling of the canister. Analog notification is carried out by means of an indicator placed in the canister cap. Electronic notification takes place by means of an acoustic and optical alarm emitted by a system embedded in a tray on the right or left side panel or under the top.

Resistance of the cupboard

The fume hood and under-counter cabinets must be certified for compliance with standards and directives: EN 14175 part 2, 3 (and 7 for reinforced version); European Commission Directive 2014/30/EU (electromagnetic compatibility); European Commission Directive 2014/35/EU (low voltage); European Commission Directive 2006/42/EU (machinery); EN 14727 (under-top cabinets), fume cupboards also having CE declarations of conformity.

The corrosion resistance of polyurethane lacquer-coated metal sheets from which the fume cupboard is made must be confirmed by a document from a test of corrosion resistance of galvanized metal sheets covered with polyurethane lacquer coating from which the fume cupboard is made, from a test of corrosion resistance of metal sheets, in an inert and acidic salt spray according to PN - EN ISO 9227: 2012, where the R_P and R_A indices of appearance of all tested samples, according to the PN - EN ISO 10289:2002 standard, are 10, and the indices of cracking, peeling, rusting and blistering, according to the PN-EN ISO 4628:2005 standard, are 0. This document is to apply to all the above standards and be issued by an accredited laboratory.

Polyurethane powder paint used to coat the fume hood sheets having a valid classification for reaction to fire of at least: A2-s1, d0, according to EN 13501-1, issued by an authorized notified and accredited body. The classification is to apply to the paint laid on this material from which the fume hood is made.

Flaps of electrical outlets located in replaceable cassettes, which have a place to mount the description of the outlet, covered with transparent plastic, convex, glossy texture, white color, must be resistant to UV radiation, that is, do not discolor yellow under the influence of, for example, UV lamps and sunlight.

Required airflow parameters

Width / Type of fume cupboard		Recommended flow [m ³ /h]
1200	General	480
1500	General	600
1800	General	720
2100	General	840

24. 480 m³/h.

Certificates

Galvanized sheets from which fume cupboards are made, and cabinets for non-aggressive reagents:

1. Document from the test of corrosion resistance of galvanized sheets (from which are made: fume cupboards, racks, cabinets, cabinets and attachments and attachments, beams with media poles with media), coated with polyurethane varnish, in an inert and acidic salt spray according to PN - EN ISO 9227: 2012, where the R_P and R_A indices of appearance of all tested samples, according to the PN - EN ISO 10289:2002 standard, are not less than 10, and the indices of cracking, peeling, rusting and

blistering, according to the PN-EN ISO 4628:2005 standard, are not more than 0. This document applies to all the aforementioned standards and is issued by an accredited laboratory.

2. Document confirming the classification in terms of reaction to fire for polyurethane paint covering fume cupboards, with a grade of at least: A2-s1,d0, according to EN 13501-1, issued by an authorized notified and accredited body,
3. Test report in accordance with PN EN 2808: 2008, issued by an accredited laboratory, confirming the thickness of the polyurethane powder-applied paint coating on galvanized sheet metal.

Ceramic countertops and chamber lining in a reinforced fume hood:

1. Document confirming the testing of thermal resistance of ceramics, according to PN-EN ISO 10545-9:1998.
2. Document confirming chemical resistance testing, according to PN-EN ISO 10545-13:1999.
3. Document confirming stain resistance testing, according to PN-EN ISO 10545-14:1999.
4. Document confirming the testing of the content of released lead and cadmium, according to PN-EN ISO 10545-15:1999.
5. Documentation of water adsorption, according to EN ISO 10545-3.
6. Document confirming the resistance to surface abrasion, a minimum of class 5, according to EN ISO 10545-7.
7. Documentation of linear thermal expansion, according to DIN 51045 or equivalent,
8. Documentation of scratch hardness according to the Mohs scale, according to EN 15771,
9. Documentation of resistance to 3-point bending force,
10. Documentation of cold compressive strength.
11. The offered ceramic countertops are to have a protocol of chemical resistance tests. Tests performed by a specialized testing laboratory and must show that the ceramic is not permanently damaged or stained not washable with water, after the application of the following substances: acetic anhydride (methanecarboxylic anhydride); acetone (dimethyl ketone); acetonitrile (acetic acid nitrile); acridine orange; alizarin dihydrate compound (alizarin red); formic acid (99%); ammonium hydroxide (28%); gentian blue (spirit blue) (water soluble); benzene; gasoline; butyl alcohol (butanol); chloroform (trichloromethane); chromium (IV) oxide (60%); dichloroacetic acid; dioxane; ferrous (III) chloride (10%); eosin (tetrabromofluorescein sodium salt) B; acetic acid (ethanoic acid) (99%); ethanol (ethyl alcohol); ethyl acetate; ethylene glycol; formaldehyde (methanal, formaldehyde); iodine solution (0.1N); iodine; potassium iodide (10%); potassium permanganate (10%); carbol fuchsin (10%); carmine; Congo red; crystal violet (hexomethylparosaniline hydrochloride); copper sulfate (10%); methanol (methyl alcohol); methylene blue (10%); naphthalene; sodium chloride (10%); sodium hydroxide (10%); sodium hydroxide (20%); sodium hydroxide (40%); sodium hypochlorite (13%); n-butyl acetate; n-hexane; perchloric acid (60%); phenol (hydroxybenzene); (ortho)phosphoric acid (85%); nitric acid (10%); nitric acid (20%); nitric acid (30%); nitric acid (65%); nitric acid (70%); Hydrochloric acid (10%); sulfuric acid (10%); sulfuric acid (25%); sulfuric acid (33%); sulfuric acid (77%); sulfuric acid (85%); sulfuric acid (96-98%); 50% sulfuric acid (77%); 50% nitric acid (70%); 50% sulfuric acid (85%); 50% nitric acid (70%); silver nitrate (1%); tetrachloromethane (perchloromethane, carbon tetrachloride, carbon tetrachloride); toluene (methylbenzene); hydrogen peroxide; xylene (dimethylbenzene); zinc chloride;
12. Fume hoods for general work, fume hoods with a lowered top and fume hoods without a top (walk-in) having certificate, issued by an independent laboratory, from the test of compliance with EN 14175 part 2 and 3.
13. Fume cupboards with certificate, issued by an independent laboratory, from the conducted test of compliance with Directive 2014/30/EU (electromagnetic compatibility), .
14. Fume cupboards with certificate, issued by an independent laboratory, from a test conducted for compliance with Directive 2014/35/EU (low voltage), .

15. Fume cupboards with certificate, issued by an independent laboratory, from a test of compliance with Directive 2006/42/EU (machinery), .
16. Fume cupboards with CE declarations of conformity.
17. Cabinets under fume hoods: ordinary, for chemicals, and for acids and alkalis with a certificate, issued by an independent laboratory, from a test of compliance with PN EN 16121+A1.

Manufacturer documents:

1. Certificate for Management System according to EN ISO 9001 certifying that it applies a management system according to the standard for the design, manufacture and sale of comprehensive laboratory equipment;
2. ISO 45001 Certificate for Occupational Health and Safety Management System for the design, manufacture and sale of comprehensive laboratory equipment;
3. Certificate for Management System according to EN ISO 14001 certifying that it applies an environmental management system according to the standard for the design, manufacture and sale of comprehensive laboratory equipment;
4. Certificate for EN ISO 50001 Energy Management System certifying that it applies an energy management system in accordance with the standard to the design, manufacture and sale of comprehensive laboratory equipment;



6. Per lubas, be dvigubos galinės sienelės

Fume cupboard for general laboratory use. Made entirely of galvanized steel sheet, coated with powder polyurethane paint on both sides, single back wall (ventilation only through the ceiling of the working chamber, without additional elements at the back of the working chamber). Window with manual drive. Solid ceramic worktop with integrated raised rim on all sides with a solid ceramic sink along the right side wall not more than 45 cm from the front of the countertop (the furthest part of the sink).

12. Yra iš vientisos keramikos, įrengta palei dešinę darbinės kameros sienelę.

- External dimensions: width 1200 mm, height 2550 mm, depth 900 mm;
- Tabletop height: 900 mm; 10. Nuo konstrukcijos pagrindo 900 mm
- Interior/utility dimensions: width 1100 mm, height 1500 mm, depth 800 mm;
- Window light width: 896 mm;
- Has been certified by independent laboratories for compliance with PN-EN 14175 part 2, 3; EN 16121+A1 (under-counter cabinets) and European Commission Directives 2014/30/EU (electromagnetic compatibility); European Commission Directive 2014/35/EU (low voltage); European Commission Directive 2006/42/EU (machinery);

Media placed in removable panels on the sides of the window:

13. Vienas

- 1 x cold water (valve on the right installation column, spout in the right part of the working chamber, not more than 40 cm from the front);
- 1 x panel with 3 230V IP 44 electrical sockets (on the left column), steel, snap-mounted in the column, equipped with a rear enclosure and its own CE marking, sockets connected to the fume cupboard installation with GST-type plugs;
- Lamp illuminating the working chamber, located in the front wall of the working chamber, below the ceiling;
- Fume cupboard control and monitoring panel (monitoring air flow, and window opening height (without AP);
- Mechanical window lock;

15. Virš kriauklės, snapelis išeina iš dešinės darbinės kameros sienelės, 400 mm nuo darbo paviršiaus priekinio krašto

Under the top:

- 1 x under-counter rail with drawer - drawer made of galvanized steel, on roller slides with synchronization, self-locking, slides hidden in the double sides of the drawer;
- 1 x ventilated cabinet for non-aggressive chemical reagents width 900 mm, depth 515, height 720 mm, made of galvanized steel sheet of thickness of 0,75 – 1 mm, coated with polyurethane powder paint on both sides, double wall 20 mm thick, double front 15 mm thick with rounded corners, hinges 270°, handle with whalebone; 2 doors, inset shelf, lock, ventilation spigot;

19. Iš plieno lakšto, 0,75 mm storio.

20. Plotis 900, gylis 515, aukštis 720 mm. Ventiliuojama versija, skirta cheminėms medžiagoms, su ventiliacijos anga ir lentynomis.