

PHOTOTROPH
air purification system

HONEYCOMB CARBON FILTER

- *High Purification Efficiency*
- *Low Operating Cost*
- *Easy Handling*
- *Long Lifetime*
- *Certified Test*

*Hong Kong Productivity Council
One Pass Odor Removal Efficiency*

| | |
|---------------------------|--------------|
| <i>Food Garbage Smell</i> | <i>97.8%</i> |
| <i>Decoration Smell</i> | <i>97.6%</i> |
| <i>Cooking Fume Smell</i> | <i>97.8%</i> |





Suitable for different HVAC systems



Cooking Fumes Odor



Decoration & Painting

Engineered Solution **Customized for Specific applications**

The issue of odor and harmful pollutant gas are occurred in surroundings such as market, toilet, garbage collection, decoration and cooking fume, etc. the more time people ignore how to solve. There is a widely held perception in many parts of the world today that indoor air quality and health are in decline.

In order to solve the issues, PhotoTroph Honeycomb Carbon Deodorize Filter is a significant solution. It is provided with high adsorptive capacity (High One Pass Removal Efficiency), large surface area, kinetics and ultra-low pressure drop. Adopt the macromolecule material make the good active carbon powder adhere to the honeycomb base ceramic material, which having the characteristics of good ventilation and low pressure drop, and it can be processed then become the antiseptis and deodorization product. Basically, PhotoTroph Honeycomb Carbon Deodorize Filter is effective to purifier almost kinds of IAQ concerned common odor (eg. methyl mercaptan and trimethylamine, etc) and harmful pollutant gas (eg. TVOC, HCHO, NH₃, H₂S and SO₂, etc). It's widely used in the air conditioner, air purifier and HVAC system such as AHU, PAU, Fan Coil Unit; SAD, RAD, EAD and FAD, etc.

∴ Features

• Extremely Low Pressure Drop

Honeycomb design is effective to decrease the pressure drop. It can be used for any existing HVAC system when no need to increase the system air flow. It can be replaced all existing and traditional carbon filters.

• High Purification Efficiency

Benefited from honeycomb design, increases the surface area and reduces pressure drop for absorption process contributes a better "One Pass Efficiency".

• Solution to Odor and Chemical

It is effective to purifier almost kinds of IAQ concerned common odor and harmful pollutant gas.

• Long service lifetime

PhotoTroph adopts ceramic based. It is effective to extend its lifetime.

• Customized for specific application

Flexible dimension is allowed that can be installed instead the return plenum of any Fan Coil Unit. Thin (45mm), light and handy are resulted in saving space and more convenience to install and replace. Compared with traditional carbon filters, it is nearby one-ten weight of traditional one.

• Testing report and excellent feedback

Independence and professional testing reports are accrediting capacity of PhotoTroph. It's widely applications. It is much appreciated that the existing customers gave positive and valuable feedbacks.

• Lower the operating cost

Resulting in extreme low pressure drop, it is not necessary to increase air flow so that energy and relevant cost are saving.

• Easy maintenance

More convenience to carry regularly cleaning works, fast and easy clean up by normal air jet nozzle / pump, just a few seconds.



PhotoTroph was installed in hotel's FAD Room.



Smoking



Animal Odor



Garbage Odor



Applications

- Internal area purification: FAN Coil, RAD and SAD
- Prevent exhaust to outdoor: EAD
- Prevent outside polluted air go into indoor: FAD



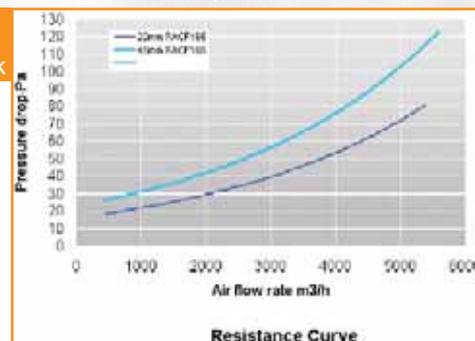
Technical Data

A glance at the below graph presented scientific figures regarding PhotoTroph (PACF165).

PhotoTroph Pressure Table (PACF165)

| Area (m ²) | Air Speed (m/s) | Flow Rate | | | Pressure Drop (Pa) | |
|------------------------|-----------------|-------------------|-------------|-------------------|--------------------|------------|
| | | m ³ /s | CFM | m ³ /h | 45mm thick | 22mm thick |
| 0.36 | 0.5 | 0.18 | 381 | 650 | 26 | 18 |
| 0.36 | 1 | 0.36 | 763 | 1300 | 35 | 25 |
| 0.36 | 1.5 | 0.54 | 1144 | 1940 | 43 | 30 |
| 0.36 | 2 | 0.72 | 1526 | 2600 | 51 | 36 |
| 0.36 | 2.5 | 0.9 | 1907 | 3200 | 60 | 42 |
| 0.36 | 3 | 1.08 | 2289 | 3888 | 72 | 50 |
| 0.36 | 3.5 | 1.26 | 2670 | 4536 | 90 | 63 |
| 0.36 | 4 | 1.44 | 3051 | 5184 | 107 | 75 |

Pressure Drop Chart (PACF165)



Filter Size (0.36m²) : 600 x 600 x 22 (mm) and 600 x 600 x 45 (mm)

PhotoTroph Air Flow Catering Table (PACF165)

| Max. Catering Flow Rate (CFM) | 1 Carbon Layer (45mm) | 2 Carbon Layer (90mm) | PhotoTroph (PC3020) |
|-------------------------------|-----------------------|-----------------------|---|
| PC3020 | 750 | 1500 | <ul style="list-style-type: none"> • Pressure Drop together with Pre-filter - 1 Carbon Layer: 65 Pa @ 2.5m/s - 2 Carbon Layer: 125 Pa @ 2.5m/s • 156 Cells / inch² • Standard filter thickness: 45mm • Ratio Surface: 750 m² / g • Max. Operate Temp: < 400 deg.C • pH: 8.13 (Nearly neutral) • Strength: longitudinal: >1.5MPa horizontal: >0.5MPa • PC3020 = 300mm x 200mm |
| PC4020 | 1000 | 2000 | |
| PC3030 | 1125 | 2250 | |
| PC4030 | 1500 | 3000 | |
| PC5030 | 1875 | 3700 | |
| PC6030 | 2250 | 4500 | |
| PC4040 | 2000 | 4000 | |
| PC5040 | 2500 | 5000 | |
| PC6040 | 3000 | 6000 | |
| PC5050 | 3125 | 6250 | |
| PC6050 | 3750 | 7500 | |
| PC6060 | 4500 | 9000 | |

According to the above information, it could be tailor-made for each customer including filter size and thickness to satisfy their own HVAC conditions. At that time, it should be considered level of air pollutant such as concentration of the odor or chemical and filtration efficiency, etc. The Filtration Factor is also required. (Note: Filtration Factor is assume the concentration of the odor or chemical is "Constant and Continuous")

| Class | Odor Pollutant Level | Examples | Filtration Factor |
|---------|------------------------|--|---------------------------------|
| Class A | High pollutant level | Water Treatment Plant, Sewage Plant, Smoking Room | Max. Catering Rate x 0.3 to 0.4 |
| Class B | Medium pollutant level | Refuse Collect Plant, Public Toilet, Decoration Workplace, Kitchen Exhaust | Max. Catering Rate x 0.5 to 0.7 |
| Class C | Low pollutant level | Canteen, Lift Lobby, Corridor | No need |

Note: The above "Class", "Odor Pollution Level" and "Examples" are listed for reference only. The "Filtration Factor" should be considered with actual environment.



More tips

What's the filtration efficiency of PhotoTroph?

Most of the filter manufacturer claim their products can remove 80%, 90% or 99% of what kinds of pollutant. It should be understood that different pollutant substance on different concentration level under how long time of filtering, under what humidity and temperature level etc. The filter would get different filtration result. Despite a user select out the filter finally, they still have a question that the filter suit for their application and environment after installed?

Therefore, PhotoTroph is more clearly to state "What's the final result after installed the PhotoTroph in the area?"

Providing the most presentable and acceptable method is "Field Test". The most representative IAQ parameter – Total Volatile Organic Compounds (TVOC), "Before and After" air sampling would be taken by PhotoTroph supplier. "Before and After" refer to before and after the filter installed location or the time before and after the filter installed, different application should be applied different method.

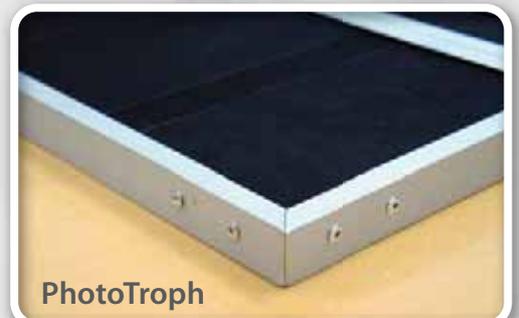


Specification

| | |
|----------------------|--|
| Brand | PhotoTroph |
| Series | PACF156 |
| Model 90060045 | Size: 900 x 600 x 45 (mm) |
| Model 60060045 | Size: 600 x 600 x 45 (mm) |
| Model 60030045 | Size: 600 x 300 x 45 (mm) |
| Catering Flow Rate | Model 90060045: 6,500 CFM |
| Catering Flow Rate | Model 60060045: 4,500 CFM |
| Catering Flow Rate | Model 60030045: 2,300 CFM |
| Honeycomb No | 156 Cells / inch 2 |
| Frame | G.I / Al.. (Metal) |
| Color | Black |
| Function | Deodorize & chemical removal e.g. TVOC, HCHO, Methyl Mrcrptan, NH3 & H2S |
| Normal Face Velocity | 2.5 m/s |
| Max. air velocity | 12 m/s |
| Pressure Drop | Very Low: < 18 Pa @ 0.5 m/s or < 42 Pa @ 2.5 m/s (1 layer of 22mm thick) |
| Expected Lifetime | 1 – 2 Year (Normal Conditions) |
| Remarks | Actual lifetime will be affected by odor & chemical concentration; humidity and dust pollutant level |
| Testing Report | LAWN (IAQ Certified CIB) - TVOC Removal Test Hong Kong Productivity Council (HKPC) – Single Pass Odour Removal Test |



Test Report



Sole Distributor:



香港空氣淨化器中心

Tel: (852) 34210167
Fax: (852) 30054302
E-mail: info@hkapc.org



- All information should be referring to real products.



Case Reference

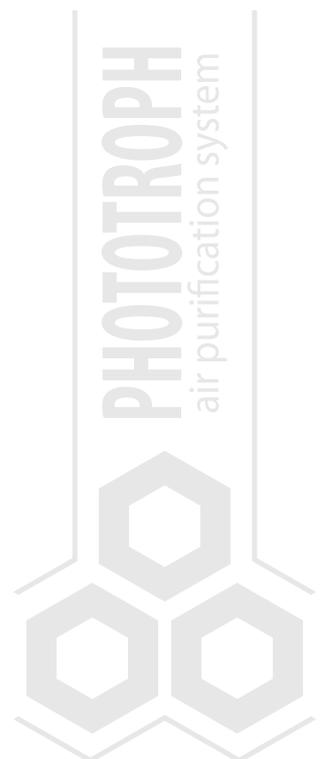
Below is one of references of PhotoTroph



- Honeycomb Carbon Deodorization "PhotoTroph" at Mandarin Oriental Hotel. Central. HK**
Filter wall in Fresh Air intake room for whole building. The most easier and effective way to prevent bad odor intake from outside.
User no need to modify their existing HVAC system e.g. PAU capacity.

- User Commend**
Since installed "PhotoTroph" at Year 2011, never receive complaints from their guests now.

Photo





Case Study

To learn more about PhotoTroph Filter Sizing



- 1** During lunch hour time, kitchen exhaust odor from outside through the PAU fresh air intake then supply to AHU and mixed with return air and finally supply into a room. Air duct of fresh air intake size is 600 x 600 (mm), air flow rate: 2 m³/s.
Solution: Install 1 pec, of PhotoTroph 600 x 600 x 45 (mm), Max. catering 4,500 cfm (2.1 m³/s). Although kitchen odor should be belongs as Class B (Medium Pollutant Level), in that case, it should not be classified as "Constant and Continuous", and such kind of odor level is always much lower than the level when they just be direct exhausted, so we can assume this case is Class C (Low Pollutant Level).
Installation Location:
Direct install into the air duct section before the PAU.
Pre-filter / Bag Filter > PhotoTroph > PAU > FAD
Suggest install at horizontal section of the air duct, if additional pre-filter / bag filter installed, then take away the original pre-filter in the PAU.
- 2** Food Court odor through PAU intake then supply to AHU and mixed with return air and supply into a Library finally. The air duct before PAU and FAD are limited be installed anything e.g. Elbow or Taper shape. PAU air flow rate: 4 m³/s. PAU chamber space: 1,000 mm height and 1,200 mm width.
Solution: Install 1 pec, of PhotoTroph 1200 x 1000 x 45 (mm), Max. catering 15,000 cfm (7 m³/s). Food Court smell (sometimes as Kitchen smell) should be belongs as Class B (Medium Pollutant Level), in that case, it should be classified as "Constant and Continuous", although such kind of odor level is always much lower than the level when they just be direct exhausted, we should assume this case is Class B. Then "Filtration Factor" should be counted to estimate the max. catering flow rate of Phototroph be installed. In that case, 7 m³/s x 0.5 = 3.5 m³/s or 7 m³/s x 0.7 = 4.9 m³/s, both calculation should be accepted, although when calculated max. 3.5 m³/s is lower than the actual PAU flow rate 4 m³/s, it may affect little bit of the % of deodorize efficiency or affect the lifetime of PhotoTroph finally, we still suggest on that design.
Installation Location:
Direct install into the PAU chamber space
Air duct from outside > Pre-filter / Bag Filter > PhotoTroph > Coil > FAD
Suggest min. 50mm away from the Coil
- 3** Garbage room odor exhaust to outside and affect neighbour. EAD size is 400 x 300 (mm), air flow rate: 0.4 m³/s.
Solution: Install 1 pec, of PhotoTroph 400 x 300 x 45 (mm), Max. catering 1,500 cfm (0.7 m³/s). Garbage odor should be belongs as Class B (Medium Pollutant Level), in that case, it should be classified as "Constant and Continuous", so we can assume this case is Class B and "Filtration Factor" should be counted to estimate the max. catering flow rate of Phototroph be installed. In that case, 0.7 m³/s x 0.5 = 0.35 m³/s or 0.7 m³/s x 0.7 = 0.49 m³/s, both calculation should be accepted, although when calculated max. 0.35 m³/s is lower than the actual exhaust flow rate 0.4 m³/s, it may affect little bit of the % of deodorize efficiency or affect the lifetime of PhotoTroph finally, we still suggest on that design.
Installation Location:
Direct install into the air duct before the Exhaust Fan.
Pre-filter / Bag Filter > PhotoTroph > Exhaust Fan > outside
Suggest min. 50mm away from the Exhaust Fan
- 4** Refuse Collection Plant smell exhaust to outside and affect neighbor. EAD size is 1200 x 1200 (mm), Exhaust Fan air flow rate: 4.5 m³/s. The air duct before the Exhaust Fan are limited be installed anything e.g. Elbow or Taper shape. But the Exhaust Fan Box with space 1200 x 1200 and also the air duct after the fan is also available are installed.
Solution: Install 1 pec, of PhotoTroph 1200 x 1200 x 45 (mm), Max. catering 18,000 cfm (8.4 m³/s). Refuse Collection Plant smell (E.g. methyl mercaptan and trimethylamine) should be belongs as Class B (Medium Pollutant Level), in that case, it should be classified as "Constant and Continuous", and then we should assume this case is Class B. "Filtration Factor" should be counted to estimate the max. catering flow rate of Phototroph be installed. In that case, 8.4 m³/s x 0.5 = 4.2 m³/s or 8.4 m³/s x 0.7 = 5.9 m³/s, both calculation should be accepted, although when calculated max. 4.2 m³/s is lower than the actual exhaust flow rate 4.5 m³/s, it may affect little bit of the % of deodorize efficiency or affect the lifetime of PhotoTroph finally, we still suggest on that design.
Installation Location:
Direct install into the Exhaust Fan Box chamber location before the fan.
EAD in plant room > Pre-filter / Bag Filter > PhotoTroph > Exhaust Fan > EAD to outside
Suggest min. 50mm before the Exhaust Fan





Case Study

To learn more about PhotoTroph Filter Sizing



- 5** New office decoration works, bad odor and chemical gas e.g. TVOC and HCHO affect whole office. 5,000 ft.2 area with 12 nos. of Fan Coils (1000 cfm (0.47 m³/s) each), fan coil return box size: 1000 x 500 (mm).

Solution: Install Less Than 12 pcs, of PhotoTroph 1000 x 500 x 22 (mm), Max. catering 3,125 cfm (1.46 m³/s). New office decoration works odor and chemical gas (E.g. TVOC and HCHO) should be belongs as Class B (Medium Pollutant Level), in that case, it should be classified as "Constant and Continuous", then we should assume this case is Class B. "Filtration Factor" should be counted to estimate the max. catering flow rate of Phototroph be installed. In that case, $1.46 \text{ m}^3/\text{s} \times 0.5 = 0.73 \text{ m}^3/\text{s}$ or $1.46 \text{ m}^3/\text{s} \times 0.7 = 1.02 \text{ m}^3/\text{s}$, both calculation should be accepted. Being of the calculated max. catering flow rate is much higher than the actual fan coil flow rate, we can consider to install less than 12 pcs. of PhotoTroph. (Notes: If the pollutants level of the area is too high e.g. TVOC level > 500 ppb, then the case may be become Class A (High pollutant level), Pollutant Factor will be become 0.3 or 0.4, and we are suggest to install back all fan coil in the area).

Installation Location:

Direct install into the fan coil return box location after the original pre-filter

Pre-filter > PhotoTroph > Fan > Supply Air

Suggest direct put onto the pre-filter, make a clamps to hole up the PhotoTroph with the pre-filter.

- 6** New office decoration works, bad odor and chemical gas e.g. TVOC and HCHO affect whole office. 10,000 ft.2 area with AHU design – FAD, RAD, SAD and EAD. The RAD size: 600 x 400 (mm), flow rate: 1 m³/s

Solution: Install 1 pec, of PhotoTroph 600 x 400 x 45 (mm), Max. catering 3,000 cfm (1.4 m³/s). New office decoration works odor and chemical gas (E.g. TVOC and HCHO) should be belongs as Class B (Medium Pollutant Level), in that case, it should be classified as "Constant and Continuous", then we should assume this case is Class B. "Filtration Factor" should be counted to estimate the max. catering flow rate of Phototroph be installed. In that case, $1.4 \text{ m}^3/\text{s} \times 0.5 = 0.7 \text{ m}^3/\text{s}$ or $1.4 \text{ m}^3/\text{s} \times 0.7 = 0.98 \text{ m}^3/\text{s}$, both calculation should be accepted. (Notes: If the pollutants level of the area is too high e.g. TVOC level > 500 ppb, then the case may be become Class A (High pollutant level), Pollutant Factor will be become 0.3 or 0.4, and we are suggest to install 2 layers of 45mm thick PhotoTroph).

Installation Location:

Direct install into the RAD before connect with the AHU

The last return air grill > Pre-filter > PhotoTroph > AHU

Suggest install at horizontal section of the RAD.

- 7** Somewhere in a public Library occasionally get an odor problem.

Solution: Use a portable type PhotoTroph Odor Scrubber. Focus the area with emergency needs, this Odor Scrubber can help to solve the odor problem point by point effectively, movable and silent design, super high air flow rate can provide large ACH in the area.



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air purification system





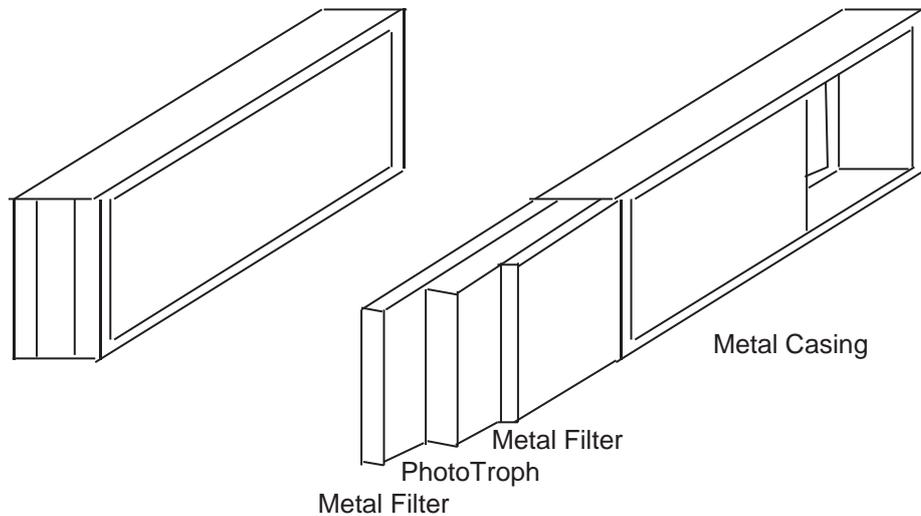
Questions & Answers

To learn more about PhotoTroph



- 1 Can PhotoTroph be washed?**
No, just same as traditional carbon filter, PhotoTroph is activated carbon base material, water content will affect the efficiency of the filter. For HVAC system uses, we always recommend to install the location should be before the cooling coil.
- 2 Can PhotoTroph be recycling use?**
The material nature of PhotoTroph can be recycle used, under a process of high temperature steam out the pollutant substance under high pressure oven, the filter material can be re-used. BUT, there is nearly impossible for user or manufacturer to recycle use the material, because the cost of the recycle process is much higher than a new build filter.
- 3 Can PhotoTroph filter out dust particles?**
PhotoTroph honeycomb carbon deodorize filter is design for odor and chemical gas remove mainly, we should add a pre-filter / bag filter to prevent dust particle direct deposit onto the PhotoTroph surface, it may affect the filtration efficiency.
- 4 What kind of odor and chemical can be removed by PhotoTroph?**
Basically, nearly all kind of IAQ concerned common odor e.g. methyl mercaptan and trimethylamine etc... and harmful pollutant gas e.g. TVOC, HCHO, NH₃, H₂S, SO₂ etc... would be removed (absorbed) by PhotoTroph. Common locations of such odor and chemical gas can be found e.g. market, toilet, refuse collection plant, sewage treatment plant etc.
- 5 What's the filtration efficiency of PhotoTroph?**
Most of the filter manufacturer claim their products can filter out 80%, 90% or 99% of what kind of pollutant..... we should understand that different pollutant substance on different concentration level under how long time of filtering, under what humidity and temperature level etc... the filter would get different filtration result. Despite a user select out the filter finally, they still have a question that the filter suit for their application and environment after installed?
So, PhotoTroph would like to recommend we should consider directly: **"What's the final result after installed the PhotoTroph in the area?"**. PhotoTroph understand that the "Field Test" should be the most presentable and acceptable method, and also is fair for user investment. The most representative IAQ parameter – Total Volatile Organic Compounds (TVOC), "Before and After" air sampling would be taken by PhotoTroph supplier. "Before and After" refer to before and after the filter installed location or the time before and after the filter installed, different application should be applied different method. Please consult your photoTroph supplier.
- 6 What's the advantage of honeycomb design?**
Filter with honeycomb design will increase their reaction (Absorption) surface of pollutants, also will decrease the pressure drop when air passes through. The filter can become smaller and light weight, easy handling and widely applications for different environment. Totally increase the exposure time with pollutant and finally get a **better "One Pass Filtration Efficiency"**.
- 7 What's the lifetime of PhotoTroph?**
Different pollutant substance, pollutant concentration, humidity and temperature etc... would affect the filter lifetime, despite how accuracy on calculation in your computer, there would be different result you may have in your actual environment finally. Except the application that you're looking for specify and only the pollutant removes e.g. SO₂ only in a Sewage Treatment Plant Room. Otherwise, at some normal IAQ applications case, we never know how many kinds of pollutants substance would exist in the area, every kind of substance will shorter the filter lifetime, then how we can calculate the actual lifetime of the filter? We can measure the TVOC to determine the filter installation efficiency, we can not calculate the lifetime base on TVOC, because the terms TVOC is include a variety of chemicals. Refer from PhotoTroph experience, normally 1 – 2 years working lifetime is reasonable.
- 8 How can we know the PhotoTroph need to be replaced?**
Same as all carbon base filters on market, PhotoTroph material can not indicate the filter lifetime by visual. So, "PhotoTroph Filter Monitoring Scheme" would help all user to monitor their existing PhotoTroph filter efficiency drop, update the user of the filter status on schedule, then user will always know the actual conditions of the filter and environment.
Scheme schedule included Field Test before installed and after installed, after 12 months, 18 months and 24 months.
For detail, please contact your PhotoTroph supplier.
- 9 Is PhotoTroph fire retardant?**
Same as normal activated carbon base filter, the material nature is impossible fire retardant, so PhotoTroph model: PACF156-S is designed in filter set: Metal frame and both side protected with metal pre-filter EN799 G2 Grade 65% - 70% (ASHRE52.1-1992).
For detail, pls. see the Drawing PT-PACF165-S.
- 10 What's the maximum size of PhotoTroph be designed?**
PhotoTroph is flexible on design with unlimited size and depth, all the filter is fabricated with a standard piece size 224 x 112 x 22 (mm) material. For filter thickness, 22mm thickness for fan coil, 45mm, 68mm or 90mm for AHU, PAU etc... is commonly used on market.

PhotoTroph Honeycomb Carbon Deodorizing Filter Unit
Model: PACF165-S



PACF165-S

Casing: Al. or G.I constructed

Pre-filter: Al. Mesh Constructed

Medium Filter: Honeycomb Carbon

After-filter: Al. Mesh Constructed

Remarks: PACF165-S is design wholly covered by metal casing, pre-filter and after-filter

Casing: Al. or G.I constructed

Rigid metal frameworks to hold up the whole filter set

Pre-filter: Al. Mesh Constructed

Protect the honeycomb carbon filter from mechanical damage

Medium Filter: Honeycomb Carbon

Odor and chemical remove

After-filter: Al. Mesh Constructed

Prevent small carbon material loose out to air stream

Pre-filter and After-filter can be washed and permanent use

Medium Filter - PhotoTroph Honeycomb Carbon can be use over 1 - 2 years

(Remarks: Lifetime of PhotoTroph will be depends on the environment conditions
e.g. pollutant level, humidity and temperature etc...)



PhotoTroph honeycomb Odor Scrubber

PhotoTroph Honeycomb
Carbon Deodorize Filter

Model: PACF156-S

Drawing PT-PACF165-S



| Customer | Application and Pollutants |
|--|--|
| Electrical & Mechanical Services Dept. | Lung Hang Library's FAD for remove of bad odor and chemical gas from carpark |
| Electrical & Mechanical Services Dept. | Tailor make the carbon filter for heavy duty air treatment unit in different public library: Po On Road, Tai Kok Tsui and Kowloon City to remove TVOC & odor |
| Electrical & Mechanical Services Dept. | EAD of waste water treatment pump room at Ngau Chi Wan market |
| Wing Kai E&M Engineering Co., Ltd. | EAD with EP for kitchen smell to outside |
| Mandarin Oriental Hong Kong (Engineering Dept) | FAD for kitchen smell intake into hotel inside |
| Kenworth Engineering Ltd. | EAD for garbage room odor to outside |
| Interspace Interior | Fan Coil return box internal circulation for removal of smoke chemical and odor |
| Impro International Ltd. | Fan Coil return box internal remove of HCHO from decoration wks |
| St. Paul' s Hospital | AHU internal circulation for hospital renovation wks's chemical and odor |
| Luen Shing Air-Conditioning Co., Ltd C.E.C Catering Equipment Co., Ltd. | PAU air intake for restaurant soot flavor remove Combustion exhaust gas remove |
| YKK Hong Kong Ltd | EAD for industrial waste gas remove |
| Yip Tong Kee Co., Ltd. | Fan coil return box for toilet smell |
| Hanny Development (China) Co., Ltd. | FAD for seafood smell intake |
| Willing Air-Condition Engineering Co. | EAD for garbage room odor exhaust outside / Sewage smell |
| Bei Capital Patners (HK) Ltd. | RAD for renovation wks smell remove |
| CLP Power Hong Kong Ltd. | CLP Hung Hom headquarter FAD for BBQ odor intake from outside to office |
| CLP Power Hong Kong Ltd. | CLP Hung Hom headquarter fan coil return box for canteen odor internal circulation remove |
| Wo Shun Air –Cond Service Engineering Co. 開明工程公司 | FAD for restaurant soot flavor intake AHU for soot flavor from outside |
| 興聯建築工程有限公司 | OEM inside an air purifier inside toilet for internal circulation |
| 新民置業有限公司 | Fan Coil return box for HCHO of decoration wks chemical & odor remove |
| 富城物業管理有限公司 | FAD air intake for temple smoke smell from outside |
| Newland Engineering Limited | Kwai Chung Hospital from EMSD. AHU for internal ward odor |
| Essex (HK) Limited | Combustion gas odor at EAD to outside |
| Jardine Engineering (Macau) Limited | Fan Coil for smoke smell and chemical remove |
| Hung Shing Engineering Limited | Fan Coil for smoke smell and chemical remove |
| Join Rich Eng. Limited | Fan Coil for smoke smell and chemical remove |
| RNB Eng. HK Limited | EAD for garbage room odor to outside |
| 意德工程服務有限公司 | Fan Coil for smoke smell and chemical remove |
| BYME Engineering (HK) Ltd. | Shatin Horse Racing - Toilet EAD to outside |