Ventilation Fan

Perfectly Green, Perfectly Quiet



www.DeltaThailand.com

About Delta Group



Corporate Mission

To provide innovative, clean, and energy-efficient solutions for a better tomorrow.

About Delta Group

Delta was founded in 1971 and has been the global leader in switching power supply solutions since 2002 and DC brushless fans since 2006.

Delta offers the most energy efficient power products in the industry, including switching power supplies with efficiency over 90%, telecom power with up to 97.5%, and PV inverters with up to 98.8% efficiency. We have also developed the world's first server power supply certified as 80 Plus Titanium with over 96% efficiency. We commonly invest 6% to 7% of our annual sales revenues in R&D and have worldwide R&D facilities in Taiwan, China, Europe, India, Japan, Singapore, Thailand, and the U.S. Delta is a frequent recipient of international awards and related recognition for innovation, design, and corporate social responsibility. Since 2011, Delta has been selected each year for the prestigious Dow Jones Sustainability[™] World Index (DJSI World). In 2015 we were also included in the DJSI Emerging Markets Index and ranked first among 45 leading companies in the Electronic Equipment, Instrument and Component sector.

Delta was also included in to the Climate Disclosure Leadership Index (CDLI) of the 2015 CDP (formerly the Carbon Disclosure Project). Delta continues its dedication to developing technologies and solutions global warming and ensures a sustainable future for mankind.

About Delta Thailand

Delta Electronics (Thailand) Public Company Limited (DET) is one of the world's leading producers of power supplies and electronic components comprising brushless DC fans, EMI filters and solenoids. DET's key power management products consist of switching power supply, DC-DC Converters and solar inverters. The products are widely used in applications for automotive, medical, telecommunications, IT, automation and more.

Founded in 1990, DET has gradually ascended to the Stock Exchange of Thailand benchmark index (SET50) with consolidated revenue exceeding USD 1.3 billion. Through innovative business processes, astute M&A activities and being at the forefront of Green solutions across our products and organization, DET is now a world class power management solutions provider. The company's effort in sustainable business practices has also garnered many awards from the local authorities and institutions. The awards included the Prime Minister's Best Industry Award from the Ministry of Industry and Thailand Sustainability Investment Award from the Stock Exchange of Thailand. DET's factories are located in Thailand, India and Slovakia while its state-of-the-art R&D facilities are in Germany, Thailand and more than five other global locations where the best R&D talents are found.

Honors and Awards



Delta Products Corporation Named 2017 ENERGY STAR[®] Partner of the Year by EPS

2017

Leadership in Environment and Design (LEED) Gold Award for Delta Thailand's HQ

2011-2015 Taiwan Top 20 Global Brand

2015 Channel NewsAsia Green Luminary Award



Climate Performance Leadership Index, CPLI

2012 Thailand Prime Minister's Best Industry Award





2016 & 2017 Excellence in Corporate Governance Score and Top Quartile Companies

2017 Thailand's Top Corporate Brand in Electronics Sector



2017-2015 SET Sustainability Investment Awards

THALAND SUSTAINABILITY BUSTAINABILITY BUSTAINABILITY DOLLTA ELECTRONICS (THALAND) POL

Dow Jones Sustainability Indices

In Collaboration with RobecoSAM 🍋

2011-2014 Dow Jones Sustainability Indices - World Index

2011, 2013 ASEAN Business Award in the Innovation Category for Large Companies





Reliability

Delta's brushless DC motor fans are engineered to outlast popular AC motor models by as much as 70%, reducing the need for replacement.

Less noise

Delta's brushless DC motor fans are precision engineered for low sound.

Less power consumption

Delta's brushless DC motor fans use up to 74% less power than popular AC motor exhaust fans.

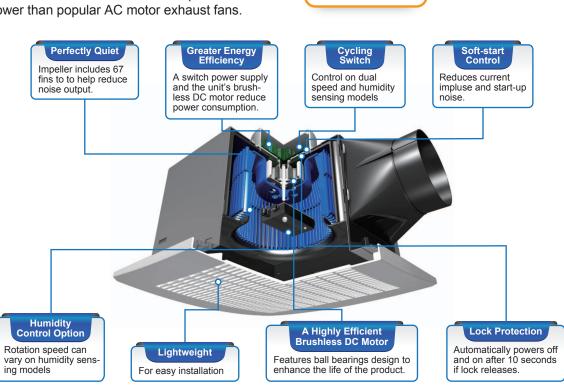
Efficiency

DC MOTOR

HNOLOG

Delta brushless DC motor fans are among the most efficient ventilation fans available.

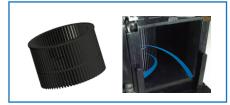
All Delta ventilation fans are precision engineered to run continuously for a minimum 70,000 hours.



Low Noise Design

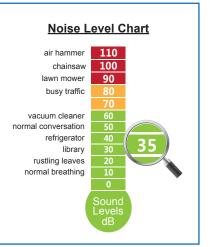
DELTA fans use low noise impeller and scroll design that move a large amount of air at reduced RPMs, they are so quiet that user might not even know they are on.

Low noise impeller and scroll design





Ventilating fan can be ran with no more than 35dB in a quiet operation as library background.



Saving Energy and Saving Money

Delta's ventilation fan can help you saving energy for our earth and at same time also saving your money. Even operate 24 hours every day, the annual electricity cost will be only 92 THB

Cost Comparison		Delta DC Motor	Leading Brand AC Motor	Other Brand AC Motor
Air flow	CMH	80	85	78
Power Consumption	Watts	2.8	11	19
Operating Hours/Day	Hours	24	24	24
Annual Power Consumption	kWh	25	96	166
Annual Electricity Cost	THB	92	360	622

Remark:

1. Refer to DELTA dual speed control model VFB17AXTH and operate in low speed mode

2. Electricity cost based on residential rate 3.7362 THB/kWh

Motion Sensing Design

When motion is detected, fan comes on at full speed. When user leaves the room, the fan will remain running at full speed until user-preset delay time has passed. Then the fan will automatically drop down to the pre-set low speed for continuous run or off. The green or amber color of LED indicator light underneath

the grille indicates continuous low speed or full speed mode.

*(for VFB25AXMTH3 only) **Low speed / Delay Time is adjustable

🔥 Humidity Sensing Design

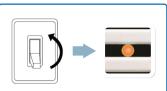
The fan runs at low speed until the humidity set-point is achieved, then automatically switches to higher speed to exhaust humid quickly. The blue or amber color of LED indicator light underneath the grille indicates humidity sensing mode or full speed mode.



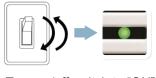
■ (for VFB25ACHTH2 and VFB25AEHTH2 only)

Keep DRY 24 Hours

Dual Speed Cycling Switching Design

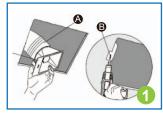


Cycle on/off switch to operate at full speed mode, and LED indicator light is AMBER



Turn on/off switch to "ON" position to operate at low speed mode, and LED indicator light is GREEN

Easy Installation (Ceiling Type Fan)



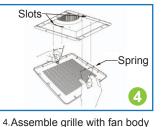
1. A: Secure duct with wind pipe B: Fix on ceiling with 1 screw

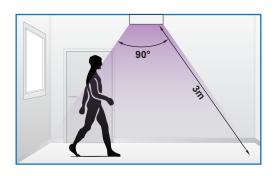


2.Assemble main unit with duct and put into ceiling

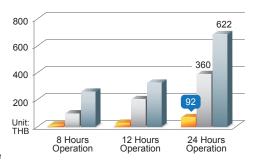


3.Fix to ceiling with four screws



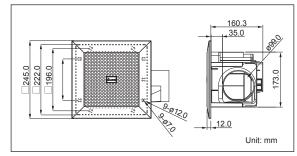


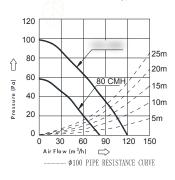
Annual Electricity Cost Comparison



Ceiling Mount Type with Duct VFB17AXTH







Dual Speed

Characteristic Table

MODEL	Grille Size	Mounting Opening	Duct Size	Weight	Power Rating	Power Consumption	Maxi Air I			mum essure	Noise	Remark
PART NO.	mm	mm	mm	kg	VAC/Hz	Watts	CMH	CFM	Pa	inAq	dB-A	
VFB17AXTH	245 × 245	175 × 175	100	1.35	220/50	2.8	80	47	56	0.50	28	Low Speed
	243 ^ 243	175 ~ 175	100	1.55	220/30	7.5	120	70	96	0.86	37	Full Speed

* The max. air flow is measured in free air; max air pressure is measured at zero air flow.

* Noise is measured in semi-anechoic chamber in free air, one meter from intake, right and left side. 3 microphones to average.

* All readings are typical values at rated voltage.

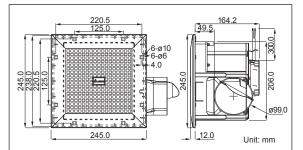
* VFB17AXTH operates in low speed mode (green LED) or full speed mode (amber LED) by cycling ON/OFF switch. Default is full speed.

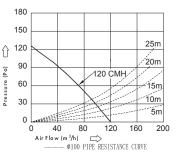
* Specifications are subject to change without notice.

Ceiling Mount Type with Duct VFB21ABTH









Characteristic Table

MODEL	Grille Size	Mounting Opening	Duct Size	Weight	Power Rating	Power Consumption		mum Flow	Maxi Air Pre	mum essure	Noise
PART NO.	mm	mm	mm	kg	VAC/Hz	Watts	CMH	CFM	Pa	inAq	dB-A
VFB21ABTH	245 × 245	210 × 210	100	1.2	220/50	5.6	120	70	130	0.52	35

* The max. air flow is measured in free air; max air pressure is measured at zero air flow.

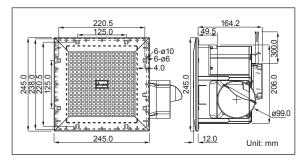
* Noise is measured in semi-anechoic chamber in free air, one meter from intake, right and left side. 3 microphones to average.

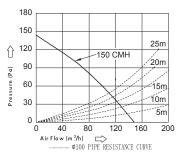
* All readings are typical values at rated voltage.

Ceiling Mount Type with Duct VFB21ACTH









Characteristic Table

	MODEL	Grille Size	Mounting Opening	Duct Size	Weight	Power Rating	Power Consumption		mum Flow	Maxi Air Pre		Noise
	PART NO.	mm	mm	mm	kg	VAC/Hz	Watts	CMH	CFM	Pa	inAq	dB-A
1	/FB21ACTH	245 × 245	210 × 210	100	1.2	220/50	9.5	150	88	140	0.56	40

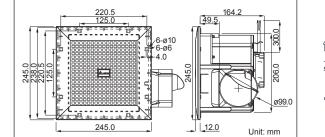
* The max. air flow is measured in free air; max air pressure is measured at zero air flow.

* Noise is measured in semi-anechoic chamber in free air, one meter from intake, right and left side. 3 microphones to average.

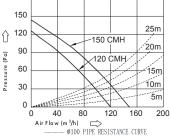
* All readings are typical values at rated voltage.

* Specifications are subject to change without notice.

Ceiling Mount Type with Duct VFB21AXTH







Characteristic Table

MODEL	Grille Size	Mounting Opening	Duct Size	Weight	Power Rating	Power Consumption	Maxi Air I			mum essure	Noise	Remark
PART NO.	mm	mm	mm	kg	VAC/Hz	Watts	CMH	CFM	Pa	inAq	dB-A	
VFB21AXTH	245 × 245	210 × 210	100	1.2	220/50	5.6	120	70	130	0.52	35	Low Speed
VEDZIAATH	245 ^ 245	210 ~ 210	100	1.2	220/50	9.5	150	88	140	0.56	40	Full Speed

* The max. air flow is measured in free air; max air pressure is measured at zero air flow.

* Noise is measured in semi-anechoic chamber in free air, one meter from intake, right and left side. 3 microphones to average.

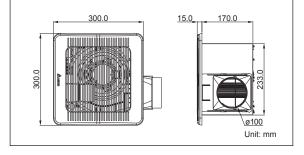
* All readings are typical values at rated voltage.

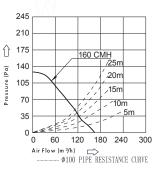
* VFB21AXTH operates in low speed mode (green LED) or full speed mode (amber LED) by cycling ON/OFF switch. Default is full speed.

Ceiling Mount Type with Duct VFB24ACTH









Characteristic Table

MODEL	Grille Size	Mounting Opening	Duct Size	Weight	Power Rating	Power Consumption		mum Flow	Maxi Air Pre	mum essure	Noise
PART NO.	mm	mm	mm	kg	VAC/Hz	Watts	CMH	CFM	Pa	inAq	dB-A
VFB24ACTH	300 × 300	240 × 240	100	3.4	220/50	7.0	160	94	127	0.50	33

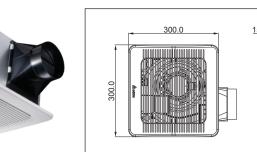
* The max. air flow is measured in free air; max air pressure is measured at zero air flow.

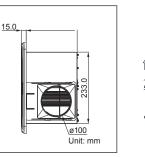
* Noise is measured in semi-anechoic chamber in free air, one meter from intake, right and left side. 3 microphones to average.

* All readings are typical values at rated voltage.

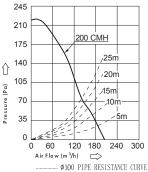
* Specifications are subject to change without notice.

Ceiling Mount Type with Duct VFB24ADTH









Characteristic Table

MODEL	Grille Size	Mounting Opening	Duct Size	Weight	Power Rating	Power Consumption		mum Flow	Maxi Air Pre	mum essure	Noise
PART NO.	mm	mm	mm	kg	VAC/Hz	Watts	CMH	CFM	Pa	inAq	dB-A
VFB24ADTH	300 × 300	240 × 240	100	3.4	220/50	11.0	200	117	215	0.86	38

* The max. air flow is measured in free air; max air pressure is measured at zero air flow.

* Noise is measured in semi-anechoic chamber in free air, one meter from intake, right and left side. 3 microphones to average.

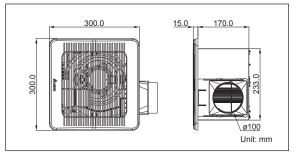
* All readings are typical values at rated voltage.

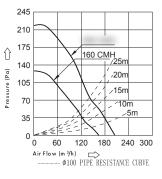
Ceiling Mount Type with Duct VFB24AXTH











Characteristic Table

MODEL	Grille Size	Mounting Opening	Duct Size	Weight	Power Rating	Power Consumption		mum Flow	Maxi Air Pre	mum essure	Noise	Remark
PART NO.	mm	mm	mm	kg	VAC/Hz	Watts	CMH	CFM	Pa	inAq	dB-A	
VFB24AXTH	300 × 300	240 × 240	100	3.4	220/50	7.0	160	94	127	0.50	33	Low Speed
VI D24AXIII	500 ~ 500	240 ^ 240	100	5.4	220/30	11.0	200	117	215	0.86	38	Full Speed

* The max. air flow is measured in free air; max air pressure is measured at zero air flow.

* Noise is measured in semi-anechoic chamber in free air, one meter from intake, right and left side. 3 microphones to average.

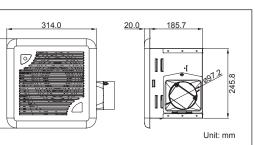
* All readings are typical values at rated voltage.

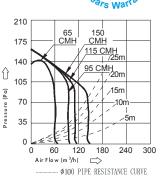
* VFB24AXTH operates in low speed mode (green LED) or full speed mode (amber LED) by 2 switch.

* Specifications are subject to change without notice.

Ceiling Mount Type with Duct VFB25AXMTH3







Motion Sensing

Characteristic Table

MODEL	Grille Size	Mounting Opening	Duct Size	Weight	Power Rating	Power Consumption	Maxi Air F			mum essure	Noise	Remark
PART NO.	mm	mm	mm	kg	VAC/Hz	Watts	CMH	CFM	Ра	inAq	dB-A	
	314 × 314	250 × 250				2.5	65	38	140	0.56	22	
			100	3.9	220/50	3.5	95	55	160	0.64	23	Low Speed
			100	5.5	220/30	4	115	67	160	0.64	25	
						6	150	88	160	0.64	29	Full Speed

* The max. air flow is measured in free air; max air pressure is measured at zero air flow.

* Noise is measured in semi-anechoic chamber in free air, one meter from intake, right and left side. 3 microphones to average.

* All readings are typical values at rated voltage.

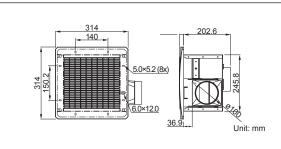


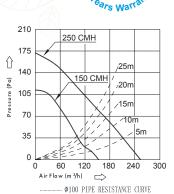
^{*} When motion is detected, fan runs at full speed. When user leaves, fan remains running at full speed until delay time (0/5/10/15/30/45/50 minutes) has passed, then fan runs continuously at a pre-set low speed (0/65/95/115 CMH)

^{*} Green and amber LED indicator lights to show motion sensing and full speed modes

Ceiling Mount Type with Duct VFB25ACHTH2 VFB25AEHTH2







Humidity Sensing

Characteristic Table

MODEL	Grille Size	Mounting Opening	Duct Size	Weight	Power Rating	Power Consumption		mum Flow	Maxi Air Pre		Noise	Remark
PART NO.	mm	mm	mm	kg	VAC/Hz	Watts	CMH	CFM	Pa	inAq	dB-A	
VFB25ACHTH2	314 × 314	250 × 250	100	3.4	220/50	9.5	150	88	110	0.44	35	Humidity Sensing
VFB25AEHTH2	314 × 314	250 × 250	100	3.4	220/50	24.0	250	147	170	0.68	47	Humidity Sensing

* The max. air flow is measured in free air; max air pressure is measured at zero air flow.

* Noise is measured in semi-anechoic chamber in free air, one meter from intake, right and left side. 3 microphones to average.

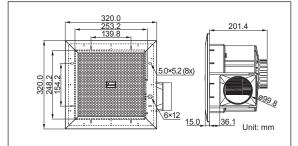
* All readings are typical values at rated voltage.

* VFB25ACHTH2 / VFB25AEHTH2 operates in humidity sensing mode (blue LED) or full speed mode (amber LED) by cycling ON/OFF switch. Default is humidity sensing mode.

* Specifications are subject to change without notice.

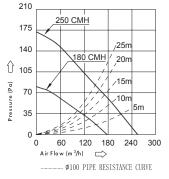
Ceiling Mount Type with Duct VFB25AXTH











Characteristic Table

MODEL	Grille Size	Mounting Opening	Duct Size	Weight	Power Rating	Power Consumption	Maxi Air I			mum essure	Noise	Remark
PART NO.	mm	mm	mm	kg	VAC/Hz	Watts	CMH	CFM	Ра	inAq	dB-A	
VFB25AXTH	320 × 320	260 × 260	100	1.9	220/50	8.0	180	105	80	0.32	37	Low Speed
VIDZJANTH	520 * 520	200 ^ 200	100	1.9	220/00	24.0	250	147	170	0.68	45	Full Speed

* The max. air flow is measured in free air; max air pressure is measured at zero air flow.

* Noise is measured in semi-anechoic chamber in free air, one meter from intake side.

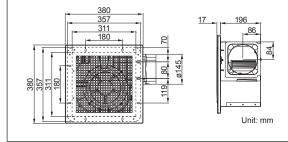
* All readings are typical values at rated voltage.

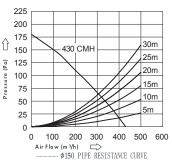
* VFB25AXTH operates in low speed mode (green LED) or full speed mode (amber LED) by cycling ON/OFF switch. Default is full speed.

Ceiling Mount Type with Duct VFB32AGTH









Characteristic Table

MODEL	Grille Size	Mounting Opening	Duct Size	Weight	Power Rating	Power Consumption		mum Flow	Maxi Air Pre	mum essure	Noise
PART NO.	mm	mm	mm	kg	VAC/Hz	Watts	CMH	CFM	Pa	inAq	dB-A
VFB32AGTH	380 × 380	320 × 320	150	5.7	220/50	17.5	430	252	180	0.72	36

* The max. air flow is measured in free air; max air pressure is measured at zero air flow.

* Noise is measured in semi-anechoic chamber in free air, one meter from intake, right and left side. 3 microphones to average.

* All readings are typical values at rated voltage.

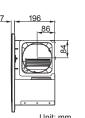
* Specifications are subject to change without notice.

Ceiling Mount Type with Duct VFB32AKTH





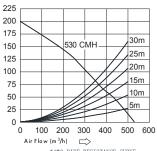
17 196 <u>31′</u> 180 ø145 Unit: mm



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(P a)

Pressure



..... \$\$150 PIPE RESISTANCE CURVE

Characteristic Table

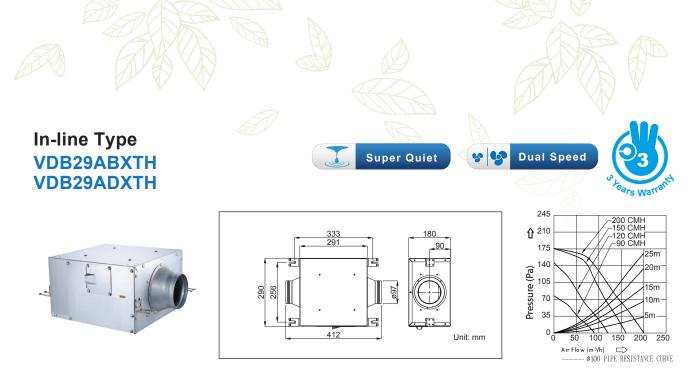
MODEL	Grille Size	Mounting Opening	Duct Size	Weight	Power Rating	Power Consumption	Maximum Air Flow		Maxi Air Pre	Noise	
PART NO.	mm	mm	mm	kg	VAC/Hz	Watts	CMH	CFM	Pa	inAq	dB-A
VFB32AKTH	380 × 380	320 × 320	150	5.7	220/50	37	530	311	200	0.8	41

* The max. air flow is measured in free air; max air pressure is measured at zero air flow.

* Noise is measured in semi-anechoic chamber in free air, one meter from intake, right and left side. 3 microphones to average.

* All readings are typical values at rated voltage.





Characteristic Table

MODEL	Mounting Opening	Duct Size	Weight	Power Rating	Power Consumption	Maximum Air Flow								Maximum Air Pressure		Noise	Remark
PART NO.	mm	mm	kg	VAC/Hz	Watts	CMH	CFM	Pa	inAq	dB-A							
VFB29ABXTH Refer to	Defecto	efer to nension 100 rawing	5.5	220/50	3.2	90	52	75	0.30	16	Low Speed						
VEDZØADATH					6	120	70	140	0.56	17	Full Speed						
VFB29ADXTH					9	150	88	175	0.70	17	Low Speed						
VFBZ9ADXTH					17	200	117	175	0.70	21	Full Speed						

* The max. air flow is measured in free air; max air pressure is measured at zero air flow.

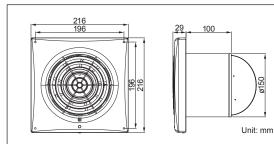
* The noise is measured in semi-anechoic chamber, at 1.5meter under ceiling to simulate real installation (mounting fan on the ceiling, ducted inlet and outlet).

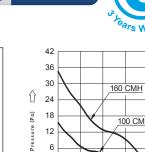
* All readings are typical values at rated voltage.

* VDB29ABXTH / VDB29ADXTH operates in low speed mode or full speed mode by 2 switch.

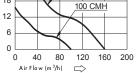
* Specifications are subject to change without notice.

Wall Mount Type VFA15AXTH-V





Dual Speed



Characteristic Table

MODEL	Grille Size	Mounting Opening	Weight	Power Rating	Power Consumption	Maximum Air Flow				Maxi Air Pre		Noise	Remark
PART NO.	mm	mm	kg	VAC/Hz	Watts	CMH	CFM	Pa	inAq	dB-A			
VFA15AXTH-V 216	216 × 216	158 - 160	0.9	220/50	2.3	100	58	15	0.06	24	Low Speed		
	210 * 210	100 - 100	0.9	220/50	3.7	160	94	35	0.14	35	Full Speed		

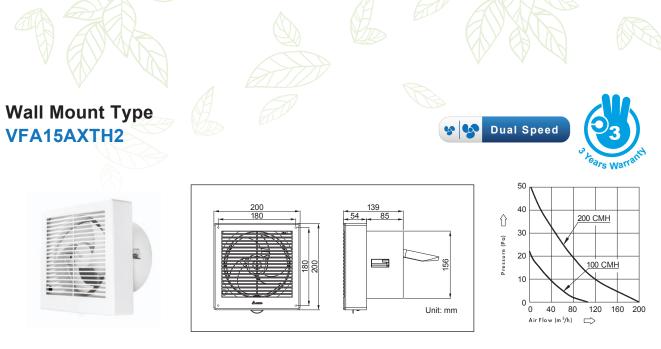
* The max. air flow is measured in free air; max air pressure is measured at zero air flow.

* Noise is measured in semi-anechoic chamber in free air, one meter from intake, right and left side. 3 microphones to average.

* All readings are typical values at rated voltage.

* VFA15AXTH-V operates in low speed mode (green LED) or full speed mode (amber LED) by cycling ON/OFF switch. Default is full speed. * Specifications are subject to change without notice.

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Characteristic Table

MODEL	Grille Size	Mounting Opening	Install Glass Thickness	Weight	Power Rating	Power Consumption	Maximum Air Flow				Maxi Air Pro	mum essure	Noise	Remark
PART NO.	mm	mm	mm	kg	VAC/Hz	Watts	CMH	CFM	Pa	inAq	dB-A			
VFA15AXTH2	200 × 200	158~160	3~35	0.72	220/50	2.0	100	58	23	0.09	27	Low Speed		
	200 ~ 200	130-100	5-55	0.72	220/30	4.0	200	117	50	0.20	38	Full Speed		

* The max. air flow is measured in free air; max air pressure is measured at zero air flow.

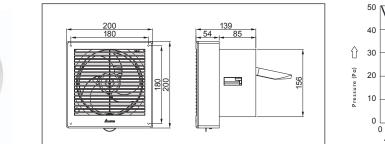
* Noise is measured in semi-anechoic chamber in free air, one meter from intake, right and left side. 3 microphones to average.

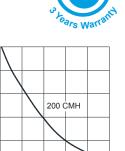
* All readings are typical values at rated voltage.

* VFA15AXTH2 operates in low speed mode (green LED) or full speed mode (amber LED) by cycling ON/OFF switch. Default is full speed.

* Specifications are subject to change without notice.

Wall Mount Type VFA15ADTH2





 \Box

160 200

40 80 120

Air Flow (m ³/h)

Characteristic Table

MODEL	Grille Size	Mounting Opening	Duct Size	Weight	Nominal Voltage	Input Power	Maximum Air Flow		Maxi Air Pre	Noise	
PART NO.	mm	mm	mm	kg	VAC	Watts	CMH	CFM	Ра	inAq	dB-A
VFA15ADTH2	200 × 200	158~160	3~35	0.72	220/50Hz	4.0	200	117	50	0.20	38

* The max. air flow is measured in free air; max air pressure is measured at zero air flow.

* Noise is measured in semi-anechoic chamber in free air, one meter from intake, right and left side. 3 microphones to average.

* All readings are typical values at rated voltage.

Comprehensive Testing Process Ensures Reliability



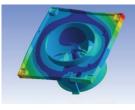
Wind Tunnel Lab.



Molding Analysis



Anechoic Chamber



Structure Analysis

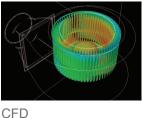


Water Spray Test



Flow Analysis

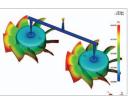
Mechanical Shock



Design & Analysis Technology

Delta's design and analysis technology utilizes 3D and 2D tools to conduct thorough examination during the design and production phases. Software simulations to enable the highest standards of performance include:

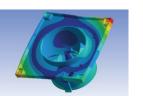
Moldflow Analysis Software Plastic mold Flow Analysis



Aerodynamic Simulation Software Air flow analysis

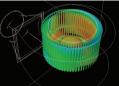


Structure Simulation Software Structure analysis for stress and vibration



Computational fluid





Physical Testing for Ventilation Fan Reliability

Laboratory testing of Delta products analyzes functionality, durability under harsh conditions, and construction for long life. The Basic Function Test checks current, speed and noise, while the Safety Test includes leakage current, Hipot (high potential), ground bond and insulation testing. Comprehensive reliability testing continues with:

- Low Temperature and High Temp/Rating Voltage on/off Test
- Temperature Cycling & Power Switching
- Impeller Locked Test
- Random Vibration
- and Drop (packing)Operational and Nonoperation Vibration
- Mechanical Shock
- Thermal Shock
 - Life Test
- Humidity Exposure
- Water Spray



How to Choose Ventilation Fan

When install ventilation fan, please refer to this formula: Air flow (CMH) = Room Space (m³) * Air Exchange per Hour (n)

Installed Area		Air Exchange per Hour (n)	Installed Area		Air Exchange per Hour (n)	Instal	Air Exchange per Hour (n)		
	Restaurant	8		Waiting room	10				
	Kitchen	15	Hospital	Clinic, Ward	6	Cinema	Projection Room	10	
Hotel	Hotel Lobby	5		Operating Room	5				
	Restroom	5		Laboratory, Hall, Classroom	8		Office	6	
	Laundy	15	School	Gymnasium	8	Factory	Copy Room	20	
	Apartment	15		Toilet	12				
Residence	Bathroom, Toilet	10		Office	6	Pub &	Restaurant	6	
-	Living room, Bedroom	6	Office	Meeting Room	12	Restaurant	Kitchen	20	





Delta Group is the world's largest manufacturer of brushless DC fans and a leading provider of switching power supplies.

Our company mission is **"To provide innovative,** clean and energy efficient solutions for a better tomorrow"

THAILAND

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