



**I-Chereng**

*Born for Innovative Coils*



**ET**

*series* **unit cooler**

**for Cold storage application**

**儲存應用蒸發器系列**

## ET Series--The most economical unit coolers for cold storage! Space Saving, Refrigerant Saving, Energy Saving and Money Saving!

### ET 系列--最經濟型儲存用蒸發器!

最小安裝空間、減少冷媒使用、節約能源與最具經濟效益!

#### Exterior

This series is specially designed for cold storage at small and medium room size. Lower profile allows the maximum of available space, bright painting casing is easy for cleaning.

Integrated fan set speeds up the maintenance work. #

#### Interior

Small internal tube volume design decreases the usage of refrigerant. With inner grooved tube enhances the efficiency. Unique tube bank makes optimum balance between capacity and airside pressure drop. All process lubricants meet the US FDA requirement. For low temperature units, all defrost heaters are placed inside the coil for better defrosting efficiency and energy saving.

Bottom up drain pan heater shortens the exchange work of repair. \*

#### Functional

All units are carefully designed for better refrigerant distribution to achieve the best rating operation.

All fan sets equipped with streamer optimizes the air flow in cold room.

Heating plate concept drain pan heater delivers heat uniformly over the drain pan. \*

Defrost from inside out enhances the effect of defrosting and avoid the room temperature fluctuation during defrosting cycle. \*

# For integrated type fan set.

\* Low temperature application models.

#### 外觀

此系列機種是專為中小型儲存用途冷庫所設計。緊緻的外型減少安裝空間需求，創造最大化使用空間。明亮烤漆外箱易於清潔維護。

一體式外置風車組維修方便快速! #

#### 內在

低管內容積設計減少冷媒使用量。特殊管陣設計在性能與空氣側壓損求最佳的平衡。全系列內螺紋管設計，性能全面升級。所有製程加工油滿足美國 FDA 要求。

低溫用途機種的除霜電熱皆安置於熱交換器內部，以獲得最佳的除霜效果並節省能源。\*

安裝於熱交換器底部的排水盤電熱易於更換維修。\*

#### 功能

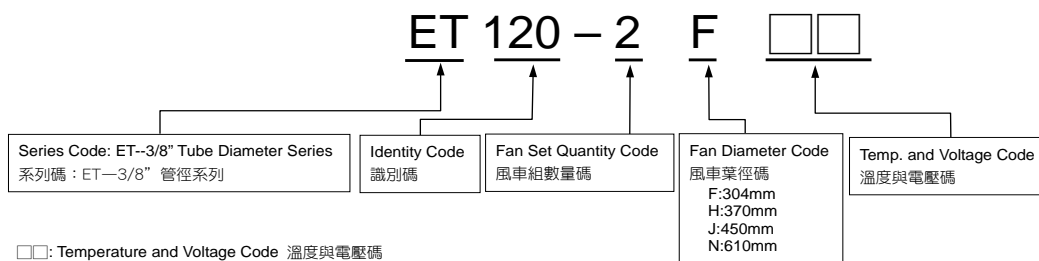
全系列機種經過詳細設計，使冷媒分佈平均，在額定條件下有最好的效能發揮。

風車皆配置導風罩以使庫內達到最佳的氣流狀況。加熱板概念的排水盤電熱使得導熱更為均勻迅速。\*

由熱交換器內部向外除霜的方式不但提高了除霜的效果，同時在除霜時間可以減少熱量外溢避免冷庫的溫度波動\*。

# 適用於一體式外置型風車組。

\* 低溫應用機種。



[ ]: Temperature and Voltage Code 溫度與電壓碼

X2-- room temperature above 0°C 220V motor without heater

適用於庫溫 0°C 以上 220V 馬達無電熱

X3-- room temperature above 0°C 380V motor without heater

適用於庫溫 0°C 以上 380V 馬達無電熱

U2-- room temperature below 0°C with 220V single phase heater connection

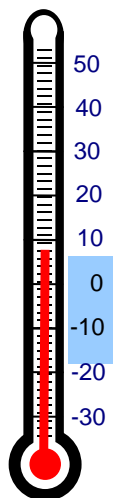
適用於庫溫 0°C 以下電熱單相 220V 接線

V2-- room temperature below 0°C with three phase 220V heater connection

適用於庫溫 0°C 以下電熱 3 相 220V 接線

W3-- room temperature below 0°C with three phase 380V heater connection

適用於庫溫 0°C 以下電熱 3 相 380V 接線



60Hz

## Technical Data

Fin Spacing=5.08mm  
 鰭片間距 =5.08mm

MODEL 型號	Capacity 能力 kW		Inner Volume 管內容積 liter	Heat Transfer Area 傳熱面積 m <sup>2</sup>	Fan 風車			Heater*電熱*		
	ET= -5°C TD=8°C	ET= -25 °C TD=7°C			Qty. 數量	Dia. 葉徑 mm	Airflow 風量 cmh	Defrost 除霜 kW	Drain Pan 排水盤 kW	Fan 風車框 kW
ET043-1F□□	1.89	1.20	1.5	4.6	1	304	1434	0.45	0.45	0.15
ET058-1F□□	2.46	1.52	2.0	6.1	1	304	1410	0.90	0.45	0.15
ET072-1F□□	2.77	1.77	2.4	7.7	1	304	1368	0.90	0.45	0.15
ET090-2F□□	4.04	2.47	3.1	9.6	2	304	2874	0.75	0.75	0.30
ET120-2F□□	5.05	3.10	4.1	12.8	2	304	2820	1.50	0.75	0.30
ET150-2F□□	5.68	3.52	5.1	16.0	2	304	2622	1.50	0.75	0.30
ET168-3F□□	7.06	4.27	5.7	17.9	3	304	4080	2.00	1.00	0.45
ET210-3F□□	8.21	5.12	7.1	22.3	3	304	3996	2.00	1.00	0.45
ET226-4F□□	9.55	5.90	7.7	24.0	4	304	5520	2.60	1.30	0.60
ET282-4F□□	11.06	6.92	9.6	30.0	4	304	5406	2.60	1.30	0.60
ET300-5F□□	12.22	7.76	10.2	31.8	5	304	7200	3.40	1.70	0.75
ET108-1H□□	4.49	2.77	3.7	11.5	1	370	2520	1.40	0.60	0.30
ET162-1H□□	5.84	3.60	5.5	17.3	1	370	2442	1.40	0.60	0.30
ET216-2H□□	8.73	5.48	7.3	22.9	2	370	5040	2.70	1.10	0.60
ET324-2H□□	11.41	7.20	11.0	34.4	2	370	4884	2.70	1.10	0.60
ET338-3H□□	13.99	8.59	11.5	36.0	3	370	7800	3.90	1.60	0.90
ET508-3H□□	18.17	11.25	17.3	54.0	3	370	7560	3.90	1.60	0.90
ET450-4H□□	18.09	11.30	15.3	47.8	4	370	10260	5.10	2.10	1.20
ET336-2J□□	14.27	8.73	11.4	35.7	2	450	8100	4.00	1.30	0.80
ET420-2J□□	16.51	10.17	14.3	44.6	2	450	7932	4.00	1.30	0.80
ET504-2J□□	18.33	11.33	17.1	53.5	2	450	7692	4.00	1.30	0.80
ET499-3J□□	21.50	12.80	17.0	53.1	3	450	11700	5.60	1.80	1.20
ET625-3J□□	24.94	14.96	21.2	66.4	3	450	11466	5.60	1.80	1.20
ET750-3J□□	27.55	16.62	25.4	79.7	3	450	11118	5.60	1.80	1.20

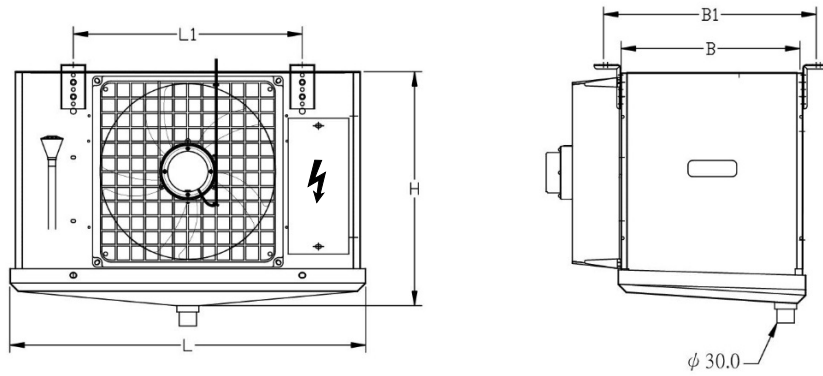
Notes: 說明

\* Only for Temp. and Voltage code =U2,V2,W3. 僅適用於溫度與電壓碼= U2,V2,W3 機種

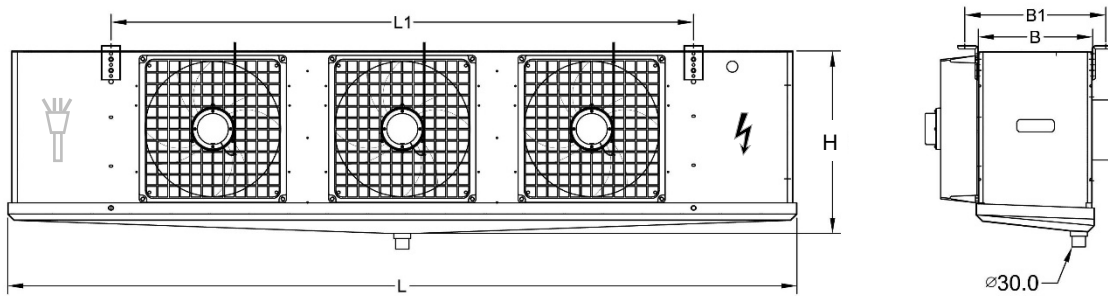
## Dimension Data

MODEL 型號	Fan set type 風車式樣	Connection 冷媒接管		Dimension 尺寸 mm			Suspension 吊掛位置 mm	
		In 入	Out 出	L	H	B	L1	B1
ET043-1F□□	Integrated 外置一體式	1/2"	3/4"	603	400	320	397	380
ET058-1F□□	Integrated 外置一體式	1/2"	3/4"	603	400	320	397	380
ET072-1F□□	Integrated 外置一體式	1/2"	3/4"	603	400	320	397	380
ET090-2F□□	Integrated 外置一體式	1/2"	7/8"	997	400	320	791	380
ET120-2F□□	Integrated 外置一體式	1/2"	7/8"	997	400	320	791	380
ET150-2F□□	Integrated 外置一體式	1/2"	7/8"	997	400	320	791	380
ET168-3F□□	Integrated 外置一體式	1/2"	7/8"	1556	400	320	1095	380
ET210-3F□□	Integrated 外置一體式	1/2"	1 1/8"	1556	400	320	1095	380
ET226-4F□□	Integrated 外置一體式	1/2"	1 1/8"	1919	400	320	1458	380
ET282-4F□□	Integrated 外置一體式	5/8"	1 1/8"	1919	400	320	1458	380
ET300-5F□□	Integrated 外置一體式	5/8"	1 1/8"	2389	400	320	1928	380
ET108-1H□□	Integrated 外置一體式	1/2"	7/8"	949	575	400	488	460
ET162-1H□□	Integrated 外置一體式	1/2"	7/8"	949	575	400	488	460
ET216-2H□□	Integrated 外置一體式	5/8"	1 1/8"	1404	575	400	943	460
ET324-2H□□	Integrated 外置一體式	5/8"	1 1/8"	1404	575	400	943	460
ET338-3H□□	Integrated 外置一體式	5/8"	1 1/8"	1919	575	400	1458	460
ET508-3H□□	Integrated 外置一體式	7/8"	1 3/8"	1919	575	400	1458	460
ET450-4H□□	Integrated 外置一體式	7/8"	1 3/8"	2389	575	400	1928	460
ET336-2J□□	Inside type 內置型	5/8"	1 1/8"	1556	750	460	1095	520
ET420-2J□□	Inside type 內置型	7/8"	1 3/8"	1556	750	460	1095	520
ET504-2J□□	Inside type 內置型	7/8"	1 3/8"	1556	750	460	1095	520
ET499-3J□□	Inside type 內置型	7/8"	1 3/8"	2070	750	460	1609	520
ET625-3J□□	Inside type 內置型	1 1/8"	1 5/8"	2070	750	460	1609	520
ET750-3J□□	Inside type 內置型	1 1/8"	1 5/8"	2070	750	460	1609	520

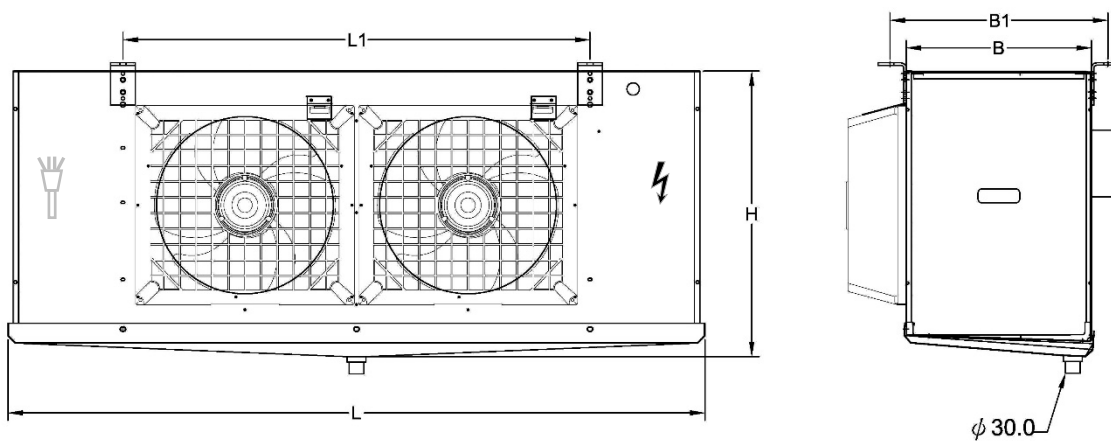
ET043-1F□□ ~ ET072-1F□□



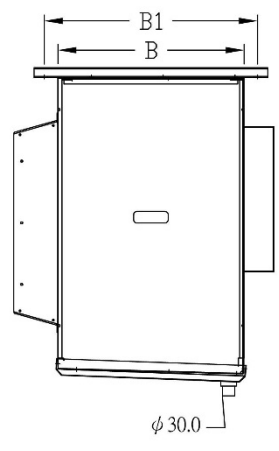
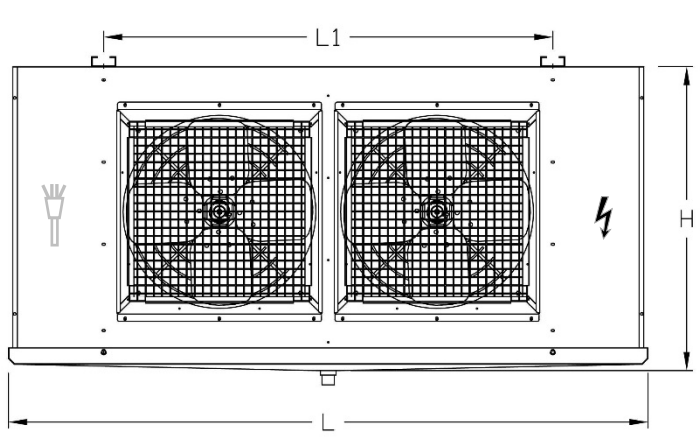
ET090-1F□□ ~ ET300-5F□□



ET108-1H□□ ~ ET450-4H□□



ET336-2J□□ ~ ET750-3J□□



## Capacity Selection 能力選擇

All the capacity data listed on the catalog is based on R404A, air inlet condition and the temperature difference between inlet air temperature of coil and evaporating temperature. The condition is listed on Table 1.

For the condition differs from above should be modified by following equation.

$$Q_r = Q_c \times f$$

$Q_r$ : Rating capacity of unit cooler  
 $Q_c$ : Capacity of unit cooler listed on catalog  
 $f$ : Correction factor for refrigerant on Table 2

We also provide the anti corrosion coils (EnergyGuard® technology), if select the EnergyGuard coating, the capacity should time 0.975 correction factor again.

本型錄所有的能力資料是依據使用 R404A、空氣進入熱交換器的條件以及表 1 所列的熱交換器進口空氣溫度與蒸發溫度差所計算。

當條件與表 1 所列不同時，請依照下式進行能力修正：

$$Q_r = Q_c \times f$$

$Q_r$ : 蒸發器的額定能力  
 $Q_c$ : 蒸發器的型錄能力  
 $f$ : 表 2 的冷媒修正係數

我們也提供防蝕處理的盤管(衛能防蝕技術®)，如果選購衛能防蝕處理，則能力必須要再乘上 0.975。

Table 1 Catalog capacity conditions  
表 1 型錄性能條件

Application 應用	Evap. Temp. 蒸發溫度 °C	Inlet Air Temp. 空氣溫度 °C	Temp. Difference 溫度差 °C	Inlet Air Humidity 空氣濕度 %RH
Storage for 3 °C 冷庫庫溫 3 °C	-5	3	8	82
Storage for -18 °C 冷庫庫溫 -18 °C	-25	-18	7	95

Table 2 Correction factor  $f$  for different refrigerants  
表 2 不同冷媒修正係數  $f$  值

Evap. Temp. 蒸發溫度 °C	R404A/R507	R134a
-5	1	0.91
-25	1	0.85

## Fan Set Performance

### 風車性能

Our fan set is designed for the better air throw in cold room. All performance listed is for free outlet. It is not designed for installing duct. If you have requirement for install air duct at the air outlet of unit cooler, please contact with us for special design.

The fan set is equipped with streamer to smooth the air flow, this will enhance air throw in refrigerated space. The streamer is for normal cold storage condition. For those heavy frost conditions, please do not hesitate to contact with us.

我們具有導風罩的風車設計是為了獲得冷庫內最佳的氣流揚程，所有的表列風車能力是依據出口端無障礙物時所獲得，並不是為安裝風管所設計。如果需要於風車出口安裝風管，請與我們聯絡。

風車組出口使用導風罩可以將氣流平順，使冷空氣可以在庫內傳送得更遠。導風罩僅適用於正常使用的儲存條件，如果會有結霜嚴重的情形時，請向本公司洽詢。

Table 3 Performance table of fan set (for 1set)

表 3 風車組性能表(單組)

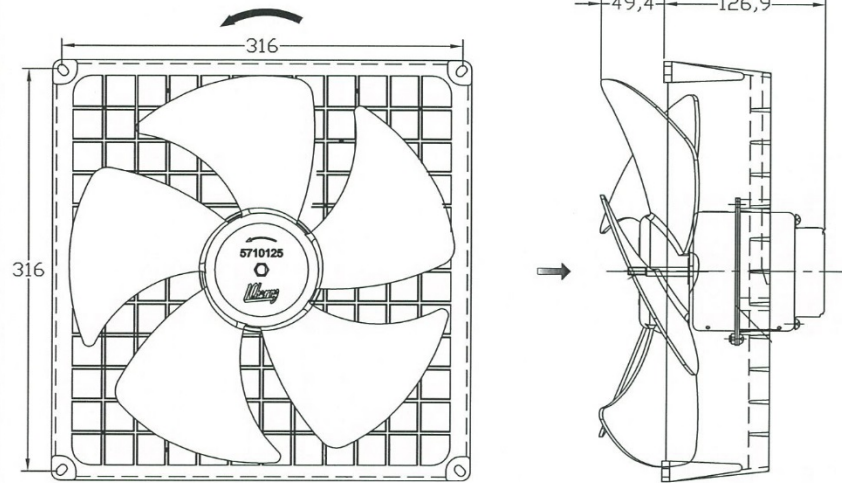
Hz 頻率	Fan Set Model 風車型號	Fan dia. 葉徑 mm	Input 入力 W	Voltage 電壓 V	Rating Current 額定電流 A	Air Throw* 揚程* m
60Hz	660C6	304	105	1φ 220V	0.47	12
	660C5		105	3φ 380V	0.24	
	660FA	370	150	1φ 220V	0.35	16
	660FC			3φ 380V	0.34	
	660HQ	450	220	1φ 220V	0.95	18
	660HN			3φ 380V	0.41	
	660NC	610	650	3φ 220V	2.22	24
	3φ 380V			1.22		

\* @ velocity=1.5m/sec 風速=1.5 公尺/秒

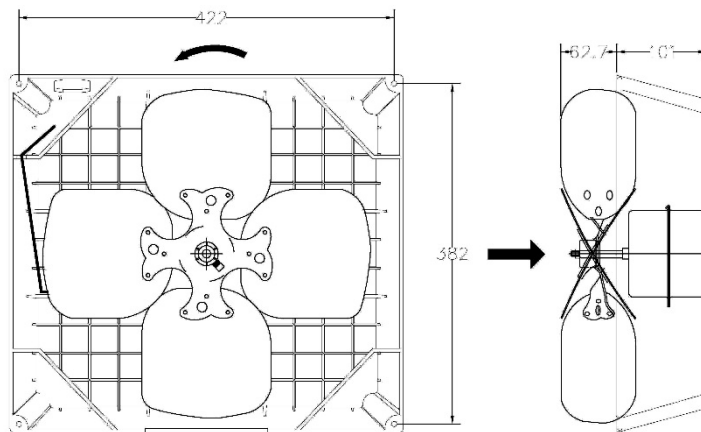


## Dimension of Fan set 風車組尺寸

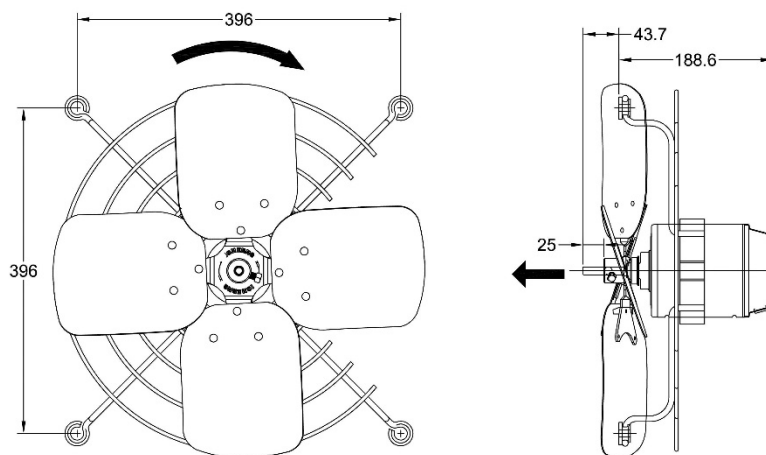
660C6



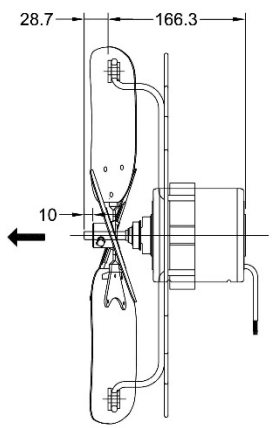
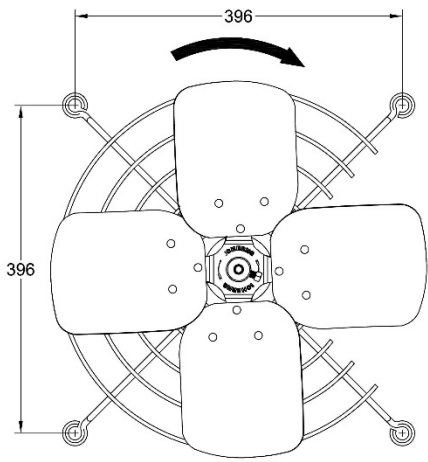
660FE/660FG



660HQ



660HN



## Heater

### 電熱

Our heaters are all CE certificated. For highest safety requirement, we strongly recommend to ground the unit cooler and install the overheat protector. (Does not come with our product.)

All the defrosting heaters are placed in the coil to achieve the best defrosting result. Our flexible heater is flexible, could be easily replaced. But be sure to reserve the maintenance space 400mm at each side for install the unit cooler.

所有電熱皆符合 CE 安全規範，為確保最高的安全要求，我們強烈建議將蒸發器接地，並安裝過熱保護器（需客戶自行購買產品）。

所有的除霜電熱皆安裝於熱交換器內部以獲得最佳的除霜效能。除霜電熱為可撓性，但安裝蒸發器時，左右請各預留 400mm 的維修空間。

## Parts Specification of our unit cooler

### 熱交換器部品規格

Parts 部品	Specification 規格
Fins 鰭片	Aluminum Alloy 1100 鋁合金 1100
Tubes 管	Copper C1220T—3/8" 紫銅管 C1220T—3/8"
Casing 箱體	Painted Galvanized Steel G3302 SG-CC 烤漆鍍鋅鋼板 G3302 SG-CC
Fan motor 風車馬達	IP 23
Anti Corrosion(Optional) 鰭片防蝕（選購）	EnergyGuard® 衛能防蝕技術

Version 2017.0.1 Subject to change without notice! 資料變更恕不另行通知！



**I-Cherng Refrigeration Industrial Co., Ltd.**

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*Heat Exchanger Taiwan*

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