

MARINE HVAC/R SOLUTIONS

UNIT COOLER

Engineered for Marine Performance.

Stainless Steel – Cold Room Type

Single Discharge

Marine Cold Rooms and Refrigeration Spaces



COLD ROOM TYPE

12,000–84,000 BTU (3.5–24.6 KW)

HEAVY DUTY
working at
MAXIMUM CAPACITY
Guaranteed Performance
www.cigblusolutions.com

CIG
HERESITE P-413

CIG BLUSOLUTIONS CO., LTD.

ADVANCING SUSTAINABILITY

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www.cigblusolutions.com

COLD ROOM

MARINE HVAC/R SOLUTIONS



Innovating for Marine & Heavy-Duty Applications

- Proven track record in naval HVAC/R projects and critical climate control solutions
- Custom-engineered systems built for durability and long-term reliability
- Compliance with international safety, environmental, and military-grade standards

About CIG BluSolutions

Engineering Excellence in HVAC/R Solutions

CIG BluSolutions is a trusted name in advanced HVAC/R technologies, delivering high-performance solutions for commercial, industrial, and specialized applications worldwide. With over 40 years of engineering expertise, we are committed to designing systems that excel in marine-grade environments and withstand the most demanding operational conditions.

Advancing Sustainability

Our vision, "Advancing Sustainability", drives everything we do—from selecting eco-friendly materials to engineering energy-efficient designs. We continuously invest in innovative technologies that reduce environmental impact while maximizing performance and operational safety.

Global Certifications

CIG BluSolutions products are manufactured under ISO 9001:2015 standards, ensuring strict quality control and compliance with UL, RoHS, and REACH certifications. Our dedication to sustainability is recognized by the EcoVadis Bronze Rating and Carbon Footprint Organization (CFO) certification.

- UL Certified for Maximum Capacity and Safety
- Carrier Q+ Level 3 Approved
- cURus Safety Compliance
- EcoVadis Sustainability Bronze Rating
- ISO 9001:2015 Certified
- Carbon Footprint Organization (CFO) Recognized
- REACH Compliant
- RoHS Certified
- Material Safety Data Sheet (MSDS) Compliant



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UNIT COOLER

Stainless Steel – Cold Room Type

Quiet operation. Energy saving. Durable. High efficiency.

Design for Marine Applications

Engineered for Performance, Fire Safety, and Marine-Grade Reliability

Experience & Expertise

- Over 40 Years of Engineering and Marine HVAC Expertise
- Proven track record in naval and heavy-duty applications
- Commitment to sustainable, eco-friendly engineering solutions



Core Features

- **Customized Design for Navy Applications:** Tailored solutions engineered to meet demanding naval requirements.
- **Selection Program Support:** ARI Standard 410-compliant sizing and selection
- **Certified Pressure Vessel (UL):** Pressure vessels are UL-certified, ensuring compliance with strict safety and performance standards.
- **ISO 9001 & RoHS Certified Factory:** Manufactured under internationally recognized quality and environmental standards.
- **High-Quality Components:** Ensuring maximum reliability in harsh marine conditions.
- **Factory-Assembled and Tested:** Each unit undergoes rigorous testing in accordance with international standards.
- **Closed-Cell Insulation:** Free from toxic substances such as hydrogen cyanide, carcinogenic nitrosamines, and ozone-depleting CFCs.

Evaporator Coil

- Maximizes cross-sectional area utilization for compact and efficient unit design
- Seamless, inner-grooved copper tubes for improved heat transfer
- Corrugated aluminum fins with anti-corrosion coating or optional copper fins, mechanically expanded and securely bonded
- Stainless steel coil casing and end plates
- Copper headers with threaded pipe connections, drain plug, and air vent as standard
- Factory-tested at 350 PSIG (2400 KPa), operating up to 380 PSIG (2620 KPa)
- Coil capacity and water pressure drop designed to ARI Standard 410
- Standard coil face velocity kept below 500 FPM (2.5 m/s)

Model Nomenclature



Casing

Stainless Steel (GRADE 304) corrosion resistance. Design for easier maintenance.

COLD ROOM

MARINE HVAC/R SOLUTIONS



Maintenance & Quality Control

- **Easy Installation and Service:** – Designed for user-friendly access and maintenance.
- **Factory Airflow Testing:** – Each unit undergoes airflow performance verification.
- **Optional Special Performance Testing*:**
 - Shock Test: MIL-STD-901D
 - Vibration Test: MIL-STD-167-1A
 - Noise Test: MIL-STD-740-1/2

** Equivalent to Navy standards. If official certification is required, testing costs must be covered by the purchaser.*



Protect corrosion Evaporator Coil

In marine environments, salt-laden air accelerates coil corrosion, leading to refrigerant leakage and efficiency loss. Our factory-applied **HERESITE P-413** coating ensures long-term durability, rigorously tested under severe corrosion conditions.

With over 40 years of expertise and manufacturing experience, we proudly offer a reliable solution to combat corrosion and enhance the performance and durability of evaporator coils. Our coils are fully coated with a specialized protective material, ensuring that every surface is shielded against the harsh effects of salt-laden marine environments. This coating, combined with our advanced production technology, has been rigorously tested and proven effective under severe corrosion conditions. Certified test documentation is available to support this performance, giving you confidence in the long-term durability of our factory-produced evaporator coils.

***CIG BluSolutions is a HERESITE Certified Applicator – the only one in Southeast Asia.**



SWAAT Results	
	Bare 1,000 hour SWAAT
	P-413 1,000 hour SWAAT
	P-413 + Inpaint 1,000 hour SWAAT



UNIT COOLER

COLD ROOM

Stainless Steel – Cold Room Type

Quiet operation. Energy saving. Durable. High efficiency.

Design for Navy Applications

Engineered for Performance, Fire Safety, and Marine-Grade Reliability

Stainless Steel (Grade 304) Unit Cooler designed for Cold Room Applications. Easy to operate, clean, and maintain. Ideal for marine and industrial cold rooms where dust protection and corrosion resistance are essential.



Easy to Service



Swing open-close door for cleaning and maintenance easily

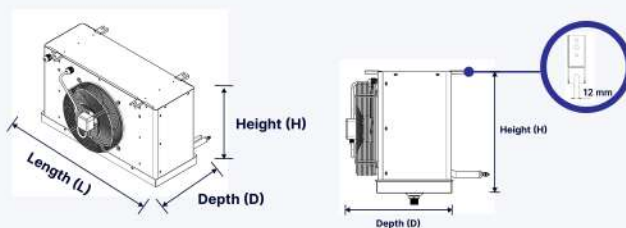
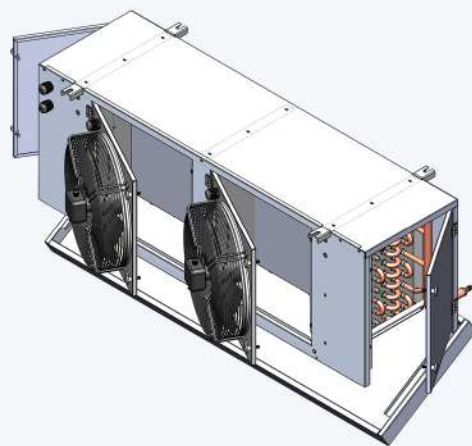
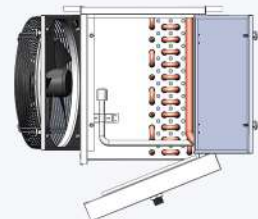


Figure 1

Condensation Protection

- Double Layers Drain Tray with 13 mm insulation



Fan

- High-efficiency external rotor axial fan motor.
- Optimized airflow delivery for improved cooling performance.
- Available in multiple configurations with 1–4 fans.
- Fan blade diameters from 300 mm to 500 mm for flexible application needs.

Drain Tray

- Designed to enhance water drainage efficiency.
- Prevents condensation build-up and ensures reliable operation in marine environments.

COLD ROOM MARINE HVAC/R SOLUTIONS

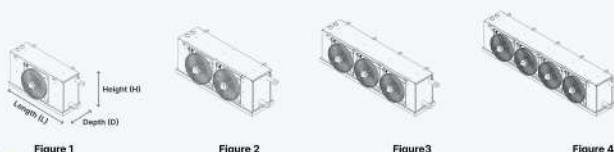
Room temp -6 to -25 °C

Fin space 7.0 mm



Technical Data												
Fin Space 7.0 mm Power Supply: 3 Phase, 380V, 50 Hertz Room temp -6 to -25 °C												
Model	Fig.	External Axial Fan			Dimension			Electric Defrost		Connection		Wgt. (KG)
		Dia. (mm)	Qty. (pcs)	Current (A)	L (mm)	D (mm)	H (mm)	Coil (nxW)	Drain pan (mm)	In (in.)	Out (in.)	
UCL-SG-3017-H-3	1	300	1	1x0.26	735	360	460	4x400	400	1/2"	5/8"	23
UCL-SG-3027-H-3	2	300	2	2x0.26	1125	360	460	4x800	800	1/2"	7/8"	39
UCL-SG-3037-H-3	3	300	3	3x0.26	1515	360	460	4x1200	1200	1/2"	1-1/8"	56
UCL-SG-3047-H-3	4	300	4	4x0.26	1905	360	460	4x1300	1300	5/8"	1-3/8"	72
UCL-SG-3517-H-3	1	350	1	1x0.30	795	360	460	4x450	450	1/2"	3/4"	23
UCL-SG-3527-H-3	2	350	2	2x0.30	1245	360	460	4x850	850	1/2"	1-1/8"	39
UCL-SG-3537-H-3	3	350	3	3x0.30	1695	360	460	4x1300	1300	5/8"	1-3/8"	60
UCL-SG-3547-H-3	4	350	4	4x0.30	2145	360	460	4x1500	1500	5/8"	1-5/8"	74
UCL-SG-4017-H-3	1	400	1	1x0.48	845	360	535	4x500	500	1/2"	3/4"	29
UCL-SG-4027-H-3	2	400	2	2x0.48	1345	360	535	4x1000	1000	1/2"	1-1/8"	50
UCL-SG-4037-H-3	3	400	3	3x0.48	1845	360	535	4x1300	1300	5/8"	1-3/8"	72
UCL-SG-4047-H-3	4	400	4	4x0.48	2345	360	535	4x1800	1800	5/8"	1-5/8"	94
UCL-SG-4517-H-3	1	450	1	1x0.58	1135	360	600	5x750	750	1/2"	7/8"	38
UCL-SG-4527-H-3	2	450	2	2x0.58	1920	360	600	5x1350	1350	5/8"	1-1/8"	72
UCL-SG-4537-H-3	3	450	3	3x0.58	2705	360	600	5x2000	2000	5/8"	1-3/8"	104
UCL-SG-4547-H-3	4	450	4	4x0.58	3490	510	600	5x2800	2800	5/8"	1-5/8"	137
UCL-SG-5017-H-3	1	500	1	1x0.93	1480	510	650	4x900	900	1/2"	1-1/8"	60
UCL-SG-5027-H-3	2	500	2	2x0.93	2510	510	650	4x1800	1800	5/8"	1-3/8"	108
UCL-SG-5037-H-3	3	500	3	3x0.93	3540	510	650	4x2300	2300	5/8"	1-5/8"	157
UCL-SG-5047-H-3	4	500	4	4x0.93	4570	510	650	4x3500	3500	7/8"	2-1/8"	205

* Remark: Calculate cooling capacity at R404A condition, TD = 10K, 8K, 7K, SH5K, SC5K



Room Temp. (°C)	Evaporating Temp (°C)	TD (K)
10	0	10
0	-8	8
-18	-25	7
-25	-31	6

UNIT COOLER

Stainless Steel – Cold Room Type

COLD ROOM

Room temp -6 to -25 °C



Design for Navy Applications

Engineered for Performance, Fire Safety, and Marine-Grade Reliability

Fin space 7.0 mm

Technical Data							
Fin Space 7.0 mm Power Supply: 3 Phase, 380V, 50 Hertz Room temp -6 to -25 °C							
Model	Fig.	Cooling Capacity			Cooling Surface	Air Flow	Air Throw
		Te = -8°C TD= 8 k	Te = -25 °C TD= 7 k	Te = -31 °C TD= 6 k	(m²)	(m³/h)	(m)
UCL-SG-3017-H-3	1	1.37	1.12	0.93	6.6	1325	9
UCL-SG-3027-H-3	2	3.33	2.52	2.08	13.2	2650	10
UCL-SG-3037-H-3	3	5.11	3.92	3.23	19.9	3975	11
UCL-SG-3047-H-3	4	7.2	5.44	4.43	26.5	5300	15
UCL-SG-3517-H-3	1	2.13	1.66	1.35	7.6	2060	11
UCL-SG-3527-H-3	2	4.29	3.34	2.74	15.3	4120	12
UCL-SG-3537-H-3	3	7.01	5.35	4.48	22.9	6180	13
UCL-SG-3547-H-3	4	9.21	7.23	6.03	30.6	8240	14
UCL-SG-4017-H-3	1	3	2.35	1.94	9.9	2800	12
UCL-SG-4027-H-3	2	6.2	4.57	3.78	19.8	5600	13
UCL-SG-4037-H-3	3	9.33	6.71	5.92	29.7	8400	14
UCL-SG-4047-H-3	4	12.44	8.83	7.14	39.6	11200	15
UCL-SG-4517-H-3	1	4.91	3.36	3.2	17.8	4200	13
UCL-SG-4527-H-3	2	9.76	7.59	6.24	35.5	8400	14
UCL-SG-4537-H-3	3	14.32	9.44	9.23	53.3	12600	15
UCL-SG-4547-H-3	4	19.65	13.18	11.34	71.1	16800	16
UCL-SG-5017-H-3	1	6.92	5.17	4.22	35	6100	15
UCL-SG-5027-H-3	2	13.53	10.95	9.03	70	12200	16
UCL-SG-5037-H-3	3	20.59	14.74	13.02	105	18300	17
UCL-SG-5047-H-3	4	27.81	20.23	16.37	139.9	24400	18

* Remark: Calculate cooling capacity at R404A condition, TD = 10K, 8K, 7K, SH5K, SC5K

REFRIGERANT CONVERSION FACTOR		
Freon		
Te(-8°C)	TD=8K : R134a	= R404a x 0.91
Te(-8°C)	TD=8K : R22	= R404a x 0.95
Te(-25°C)	TD=7K : R134a	= R404a x 0.85
Te(-25°C)	TD=7K : R22	= R404a x 0.95

Sample select model

Requirements room temp:

" -18 °C Cooling capacity at 3 kw R404a "

1. Select TD = 7k
2. Select model : UCL-SG-3037-H-3 (3.34 kW)

COLD ROOM

Room temp +10 to -5 °C

MARINE HVAC/R SOLUTIONS

Fin space 4.5 mm



Technical Data

Fin Space 4.5 mm | Power Supply: 3 Phase, 380V, 50 Hertz | Room temp +10 to -5 °C

Model	Fig.	External Axial Fan			Dimension			Electric Defrost		Connection		Wgt. (KG)
		Dia. (mm)	Qty. (pcs)	Current (A)	L (mm)	D (mm)	H (mm)	Coil (nxW)	Drain pan (mm)	In (in.)	Out (in.)	
UCL-SG-3014-H-3	1	300	1	1x0.26	735	360	460	4x400	400	1/2"	5/8"	24
UCL-SG-3024-H-3	2	300	2	2x0.26	1125	360	460	4x800	800	1/2"	7/8"	41
UCL-SG-3034-H-3	3	300	3	3x0.26	1515	360	460	4x1200	1200	1/2"	1-1/8"	59
UCL-SG-3044-H-3	4	300	4	4x0.26	1905	360	460	4x1300	1300	5/8"	1-3/8"	76
UCL-SG-3514-H-3	1	350	1	1x0.30	795	360	460	4x450	450	1/2"	3/4"	25
UCL-SG-3524-H-3	2	350	2	2x0.30	1245	360	460	4x850	850	1/2"	1-1/8"	43
UCL-SG-3534-H-3	3	350	3	3x0.30	1695	360	460	4x1300	1300	5/8"	1-3/8"	66
UCL-SG-3544-H-3	4	350	4	4x0.30	2145	360	460	4x1500	1500	5/8"	1-5/8"	82
UCL-SG-4014-H-3	1	400	1	1x0.48	845	360	535	4x500	500	1/2"	3/4"	31
UCL-SG-4024-H-3	2	400	2	2x0.48	1345	360	535	4x1000	1000	1/2"	1-1/8"	54
UCL-SG-4034-H-3	3	400	3	3x0.48	1845	360	535	4x1300	1300	5/8"	1-3/8"	78
UCL-SG-4044-H-3	4	400	4	4x0.48	2345	360	535	4x1800	1800	5/8"	1-5/8"	102
UCL-SG-4514-H-3	1	450	1	1x0.58	1135	360	600	5x750	750	1/2"	7/8"	42
UCL-SG-4524-H-3	2	450	2	2x0.58	1920	360	600	5x1350	1350	5/8"	1-1/8"	80
UCL-SG-4534-H-3	3	450	3	3x0.58	2705	360	600	5x2000	2000	5/8"	1-3/8"	116
UCL-SG-4544-H-3	4	450	4	4x0.58	3490	360	600	5x2800	2800	5/8"	1-5/8"	153
UCL-SG-5014-H-3	1	500	1	1x0.93	1480	510	650	4x900	900	1/2"	1-1/8"	67
UCL-SG-5024-H-3	2	500	2	2x0.93	2510	510	650	4x1800	1800	5/8"	1-3/8"	122
UCL-SG-5034-H-3	3	500	3	3x0.93	3540	510	650	4x2300	2300	5/8"	1-5/8"	178
UCL-SG-5044-H-3	4	500	4	4x0.93	4570	510	650	4x3500	3500	7/8"	2-1/8"	233

* Remark: Calculate cooling capacity at R404A condition, TD = 10K, 8K, 7K, SH5K, SC5K

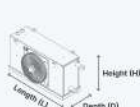


Figure 1



Figure 2



Figure3



Figure 4

Room Temp. (°C)	Evaporating Temp (°C)	TD (K)
10	0	10
0	-8	8
-18	-25	7
-25	-31	6

UNIT COOLER

Stainless Steel – Cold Room Type

COLD ROOM

Room temp +10 to –5 °C



Design for Navy Applications

Engineered for Performance, Fire Safety, and Marine-Grade Reliability

Fin space 4.5 mm

Technical Data							
Fin Space 4.5 mm Power Supply: 3 Phase, 380V, 50 Hertz Room temp +10 to –5 °C							
Model	Fig.	Cooling Capacity			Cooling Surface (m ²)	Air Flow (m ³ /h)	Air Throw (m)
		Te = 0°C TD= 10 k	Te = -8 °C TD= 8 k	Te = -25 °C TD= 7 k			
UCL-SG-3014-H-3	1	2.84	1.77	1.4	9.9	1200	9
UCL-SG-3024-H-3	2	5.97	3.94	3.07	19.8	2400	10
UCL-SG-3034-H-3	3	9.11	6.03	4.66	29.7	3600	11
UCL-SG-3044-H-3	4	12.89	8.42	6.54	39.5	4800	15
UCL-SG-3514-H-3	1	4.02	2.63	2.13	11.4	1960	11
UCL-SG-3524-H-3	2	8.09	5.29	4.32	22.8	3920	12
UCL-SG-3534-H-3	3	12.69	8.42	6.34	34.2	5880	13
UCL-SG-3544-H-3	4	16.91	11.16	8.65	45.6	7840	14
UCL-SG-4014-H-3	1	5.43	3.58	2.76	14.8	2600	12
UCL-SG-4024-H-3	2	10.89	7.26	5.25	29.6	5200	13
UCL-SG-4034-H-3	3	16.17	10.83	7.63	44.4	7800	14
UCL-SG-4044-H-3	4	21.39	14.39	9.98	59.1	10400	15
UCL-SG-4514-H-3	1	8.36	5.64	3.76	26.5	4000	13
UCL-SG-4524-H-3	2	18.72	12.25	9.68	53.1	8000	14
UCL-SG-4534-H-3	3	23.87	16.17	11.77	79.6	12000	15
UCL-SG-4544-H-3	4	33.09	22.38	15.92	106.1	16000	16
UCL-SG-5014-H-3	1	12.59	8.5	6.11	53.1	5850	15
UCL-SG-5024-H-3	2	25.85	17.31	13.81	106.1	11700	16
UCL-SG-5034-H-3	3	36.52	24.78	17.01	159.2	17550	17
UCL-SG-5044-H-3	4	49.81	33.76	23.59	212.2	23400	18

* Remark: Calculate cooling capacity at R404A condition, TD = 10K, 8K, 7K, SH5K, SC5K

REFRIGERANT CONVERSION FACTOR			
Freon			
Te(-8°C)	TD=8K : R134a	= R404a x 0.91	
Te(-8°C)	TD=8K : R22	= R404a x 0.95	
Te(-25°C)	TD=7K : R134a	= R404a x 0.85	
Te(-25°C)	TD=7K : R22	= R404a x 0.95	

Sample select model

Requirements room temp:

" 0 °C Cooling capacity at 12 kw R404a "

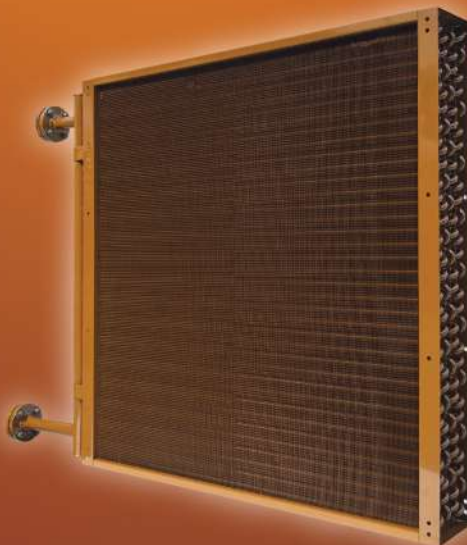
1. Select TD = 8k
2. Select model : UCL-SG-4044-H-3 (14.39 kW)

HERESITE
PROTECTIVE COATINGS, LLC
World Class Phenolic Epoxy Coating

OVER **980** TEST RESULTS

Over 20 Different Tests

- Salt Spray (ASTM B117) : 20,000 hours
- ISO 12944-6 high durability C5-M
- ISO 12944-6 high durability C5-1
- SWAAT (ASTM G85 A3; acidified synthetic seawater) : 1,000 hours
- ISO 12944-9 offshore cyclic weathering (4,200 hours; formerly ISO 20340)
- Humidity (ASTM D4585; Cleveland Condensing) : 2,000 hours



**HERESITE
P-413**



Resist to corrosion

The most extensive test data set with 980 chemical test results



Superior Protection

Pass ASTM B-117: 20,000+ hours and other 20 different tests.



Long Lasting

The Coating Film provides Class 5H-6H hardness with flexibility and adhesive ability under extreme temperature tests.



Meets FDA 175.300

for indirect food contact
Compatible with a food processing line

Premium benefits of coating with the CIG Certified Applicator.

- We pass the readiness of the production process assessment from **HERESITE**.
- We prepare and train our employees by **HERESITE** standards.
- We inspect the quality of the coating before delivery.
- We are the only **HERESITE Certified Applicator** in the Southeast Asia region.



Rest assured that your HVACR protection is the same quality as the coating made by HERESITE USA.

ASTM B117

Salt Spray Test:
20,000+ hrs

ASTM G85

Modified Salt Spray
Test: 1000 hrs
using pressurize coil.

ISO-12944-9 (Previously ISO20340)

- Cyclic test
- Test run on 4,200 hrs
- 1 test cycle is a combination of
 - a. 72 hrs UV
 - b. 72 hrs of salt spray
 - c. 24 hrs of freezing

Days
1-3

UV/Condensation
ISO-11507

Days
4-6

Salt Spray
ISO-9227

Day
7

Low - Temp.
Exposure at
(-20 ± 2) °C

ISO-12944-6

Corrosion protection
of steel structures by
protective paint
systems

Passed: C5-M (Marine)
and C5-I (Industrial)
with High durability



D-COAT™

Reduce your maintenance costs with a special coating that upgrades your coil to be a self-cleaning coil.

**SELF
CLEANING**

NSF P1 Registration plus FDA
antimicrobial approval

=

**SUPER
HYDROPHOBIC**



MAXIMUM PROTECTION WITH
D-COAT | D-COAT UV
SUPER HYDROPHOBIC
SURFACE

UNCOATED
SURFACE

HYDROPHOBIC
SURFACE



Full Corrosion Protection For HVAC/R Equipment

D-COAT™ treatment series are designed for use on commercial air conditioning coils, refrigeration, industrial coils, transportations and other air conditioning equipment; coils, fins, tubes and all internal metal surfaces.

These products can be installed on units before installation or on previously installed field units with equal success.

D-COAT™ HVAC/R protective treatments retard corrosion on the non-ferrous metal fins and tubes, thus, extending the life of the equipment asset and helping to maintain good airflow efficiencies.

D-COAT UV™ offers UV protection which helps the coating to last longer. Best for outdoor units to preserve the performance and longevity of the coils.



www.cigblusolutions.com



Line OA @CIGCare



CIG BLUSOLUTIONS CO., LTD.

บริษัท ซีไอจี บลูโซลูชันส์ จำกัด

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