



華景電通股份有限公司

BRILLIAN NETWORK & AUTOMATION INTEGRATED SYSTEM CO., LTD.



*Great works are performed not by strength, but by perseverance.
There are no shortcuts to any place worth going.*



株式会社トリコ

〒105-0004

東京都港区新橋3-6-6

H/P: www.torico-ltd.co.jp

TEL: 03-3503-1711

FAX: 03-3503-1755

SHOP: www.toricomall.com



TORICO SDN BHD (1170396-A)

20-1 JALAN PPM 13, PLAZA PANDAN MALIM BUSINESS PARK,
BALAI PANJANG, 75250 MELAKA, MALAYSIA.

Tel: 018-962 4588/01 012-532 7867

Website: www.torico-ltd.co.jp

Technology for Brilliant Productivity

產品應用

Products Catalog

華景電通擁有豐富經驗與技術，我們協助客戶提供專業且完整的客製化方案！

研發團隊追求卓越，同時超越自我，設計改良出更好的解決方案！

Brilliant have unique combination of technology, deep applications knowledge and critical materials know how

RFID Reader



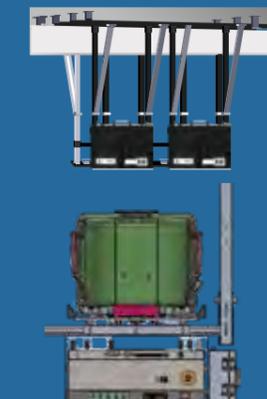
E-Rack



Dummy Loadport



OHB N2 / Embedded N2 / Mini STK N2



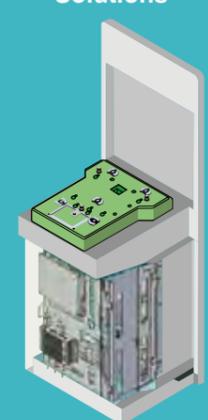
**Standalone Purge Systems
Wafer Carrier
N2 Purge Station**

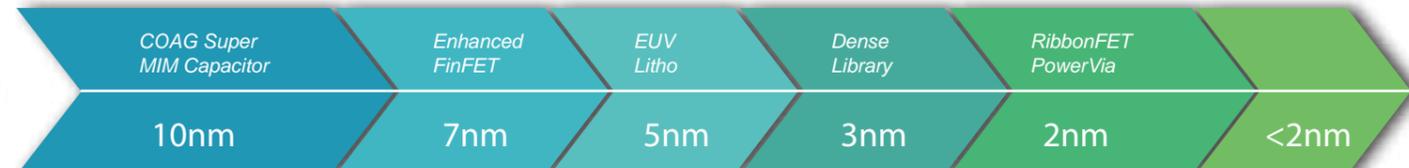


**Mobile Robot
E-Rack**



**Laminar Flow Device
BR Loadport
Solutions**





Brilliant inside

CO2 Fire Protection System

RFID System for Critical Material Tracking System

Mobile Robot E-Rack

E84 Sensor

Brilliant Tag

Advanced Material Handling Module and Integrated System

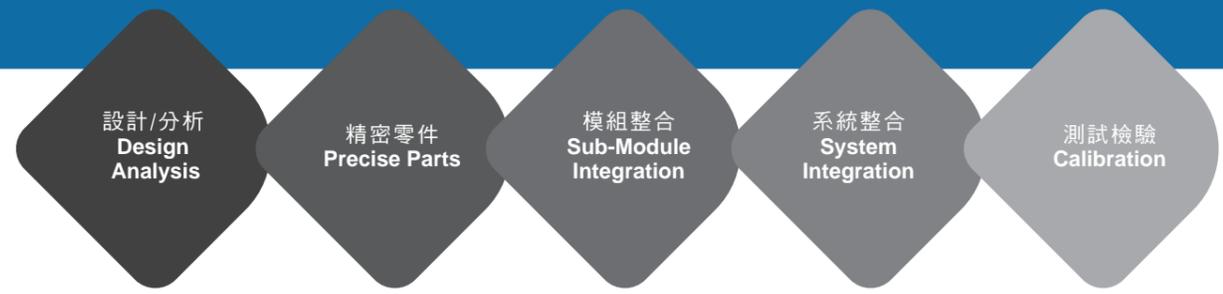
Advanced AMC free Handling System

Purge Unit for Loadport Solutions

Laminar Flow Device

BR Loadport Solutions

Smart EFEM



設計分析至生產檢驗，垂直整合

全球半導體先進製程越來越精密，華景電通在半導體生產過程中，對潔淨度及自動化高效率製程扮演極為重要的角色。並且設計專用於晶圓廠之高精準RFID整合派工系統，可在繁複的製程管理系統中，透過自動化辨識技術，提供精準的派送決策，減少人工失誤，提高產能良率。

*In the semiconductor manufacturing process
Brilliant plays an extremely important role in FOUP cleaning and automation processes.
The high-precision RFID integrated dispatching system is designed for accurate dispatching decisions through automatic identification technology in the complex management system.
This system can reduce manual errors and improve production yield.*

安裝設置服務 Installation & Service

專注在每個細節，堅持在每一個環節，用心每一項技術提升。協助您的智能設備完整的安裝設置服務是我們重視且品質保證的重要服務。

Brilliant pays attention to every detail and works with customers to provide service.

自動化 Automation

華景電通專業研發團隊致力提升工業機器人與智慧自動化之應用技術與供應鏈效能整合，物聯網與智慧監控導向專業物件。

Brilliant's R&D teams are committed to improving the performance and efficiency of intelligent automation and IoT real-time monitoring.

專業解決方案 Solution Projects

全球領先技術，先進製程，精密設計製造。多年業界實績。專精於提昇優化效能，華景電通提供您專業的優化解決方案。

Brilliant own a combination of unique technology, profound knowledge of applications and critical materials know-how.

客製化設計 Customization

華景電通嚴謹的研發團隊可依據您不同的需求成立客製化專案小組，提供前端研發設計，客製化量產，設備教育訓練，永續合作夥伴，全方位整合方案。

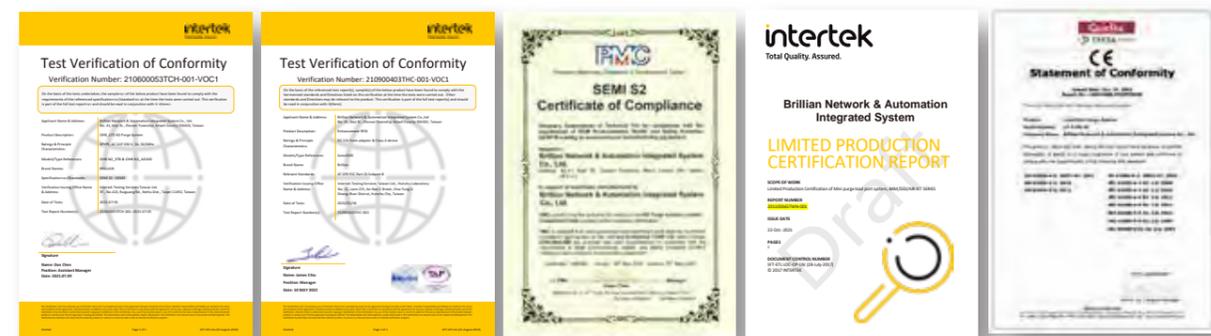
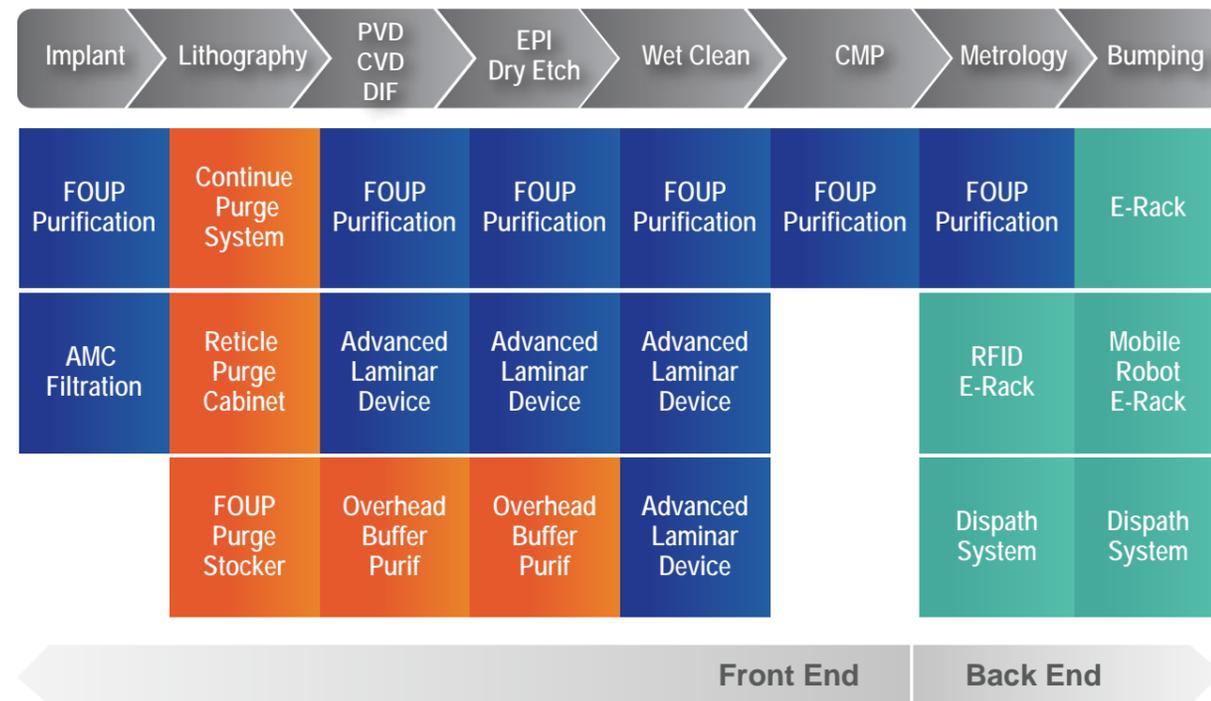
Brilliant designs, develops, manufactures, tests, installs and services according to customer specifications and needs.

Brilliant 在半導體的發展重點及地位

Brilliant Innovative Solutions

華景電通於半導體製程中，擁有全面性的製程優化解決方案，適用於其各個不同階段的FOUP/光罩存儲區和材料處理解決方案，貼近需求，提升產能。

Brilliant has the comprehensive solutions to contamination prevention and optimization on FOUP/Reticle storage areas. Enhance productivity with complete materials handling solutions in the markets.



We always believe that simplicity can be reliable and beautiful, but simplicity is not simple and requires a deep level of innovation and creativity.

Simple, Innovative & Reliable

高階製程微汙染防治傳載系統

Advanced AMC Free Handling System

Brilliant N2 Purge Solutions

N2微環境淨化系列產品，支援AMHS(Automatic Material Handling System)自動化物料搬運車OHT(Overhead Hoist Transport)以及支援AGV(Automated Guided Vehicle)自走物料搬運車傳送系統，整合Stocker 使用嵌入式Embedded N2 淨化系統，高空物料暫存區淨化系統OHB N2，以及設備機台端配置Standalone N2 Station等。

Brilliant Loadport Purge System

華景電通因不同類型的機台，加裝微汙染防治系統 (Load port Purge System)，提供晶圓在製程中於載具 (FOUP)內保持良好的環境，大幅降低AMC、濕氣、含氧量，避免化學汙染物產生損壞晶圓，增加良率。並且開發氣簾裝置，隔絕EFEM所帶進FOUP的汙染。

OHB/UTS Purge System

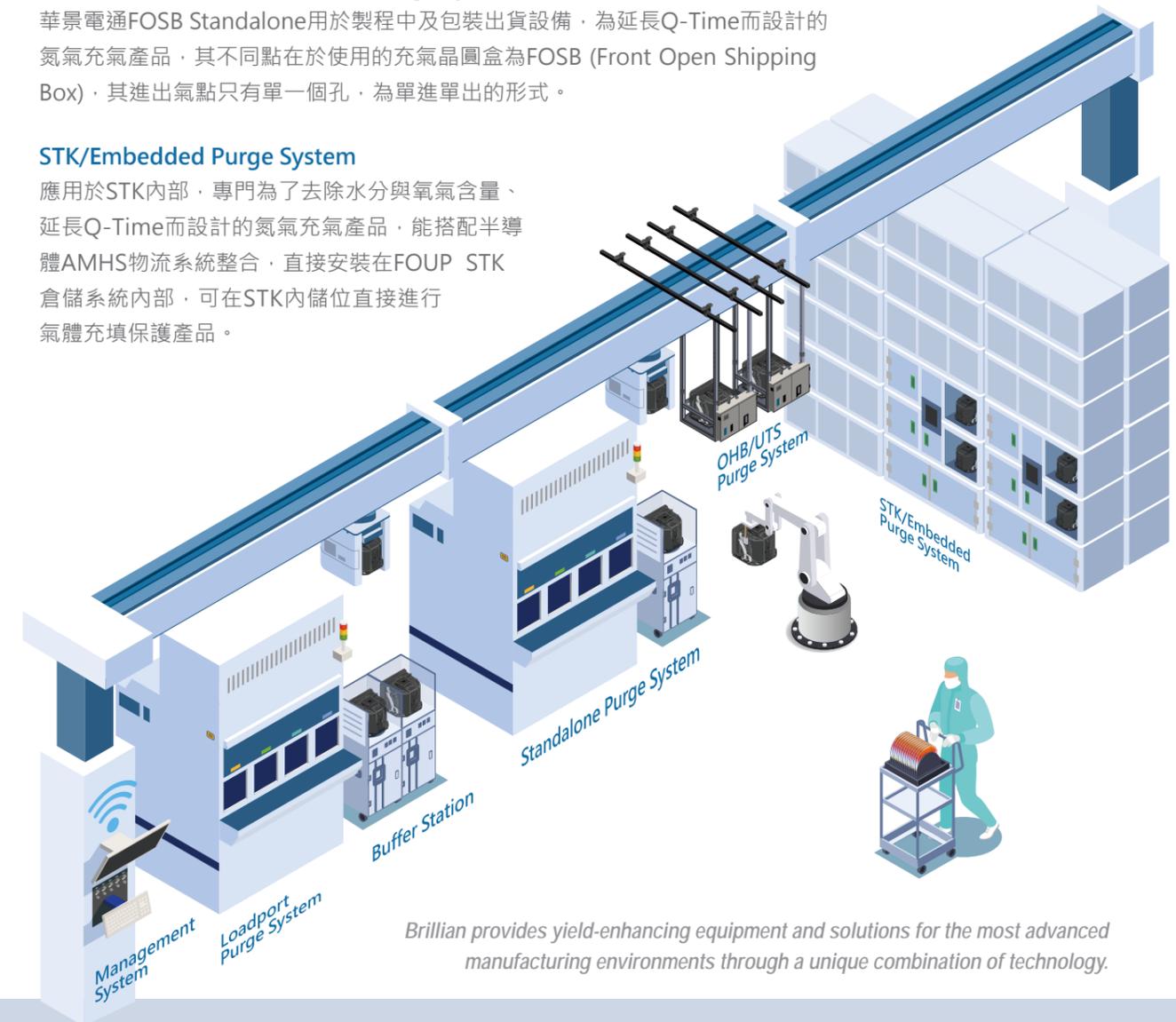
用於製程前段，安裝於自動化軌道下方，專門為了去除水分與氧氣含量、延長Q-Time而設計的氮氣充氣產品，能搭配半導體AMHS自動化設備使用，且體積小不佔空間，亦能配置在離倉儲系統較遠的製程設備旁，縮短OHT的運送時間。

FOUP/FOSB Reticle Standalone Purge System

華景電通FOSB Standalone用於製程中及包裝出貨設備，為延長Q-Time而設計的氮氣充氣產品，其不同點在於使用的充氣晶圓盒為FOSB (Front Open Shipping Box)，其進出氣點只有單一個孔，為單進單出的形式。

STK/Embedded Purge System

應用於STK內部，專門為了去除水分與氧氣含量、延長Q-Time而設計的氮氣充氣產品，能搭配半導體AMHS物流系統整合，直接安裝在FOUP STK倉儲系統內部，可在STK內儲位直接進行氣體充填保護產品。



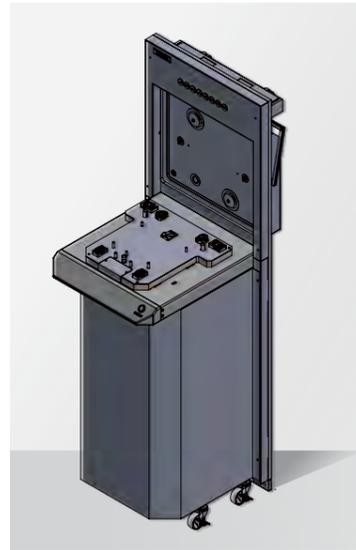
Brilliant provides yield-enhancing equipment and solutions for the most advanced manufacturing environments through a unique combination of technology.

● 系統整合

BR Loadport

整合Loadport、Purge Unit、Laminar Flow 完整微污染防治體系
Retrofittable contamination protection module for existing loadports and in compliance with SEMI standards.

本方案為將Brilliant自有之300mm晶圓卸載模組(Loadport)產品，於硬體機構設計時納入充氣模組 (Purge Unit) 做整合，盤面預留充氣孔位，具有可拆式側門板及方便拆卸的控制板模組。充氣模組可供安裝單流量計(Flow Meter)或MFC(Mass Flow Control)，同時透過溫濕度感測器、流量計及壓力計取得各項數值，監控FOUP內微環境條件，亦可搭載氣簾模組(Laminar Flow)，阻絕外部高濕氣體於FOUP 開門時滲入，將濕度大幅降低。



Function

- Gas purging on FOUP.
- Preventing contamination through purge.
- Monitor gas flow rate by flow meter.

Optional / Capability

- Standalone System (RH,Temp.,flow rate,pressure and data logging)
- Support RFID_SECS/GEM Solution
- Support HSMS Communication with MES.



本產品著重於設計初期就將充氣模組包含在機構及骨架內，易於拆卸的各模組元件搭配充氣模組與氣簾模組，可提升FOUP內的微環境監控，延長各製程間的可停留時間(Q-TIME)，並能有效提升產品良率。

Feature

- Flexibility : Operating as an independent process tool.
- Defense system : Control by EAP and full authority to implement more sensors.
- Full SPC chart / mechanism to ensure the quality and safety.

BR Loadport	Optional & Specification
Load Port (L/P)	Power (Max):DC24V/4A Communication: RS-232(D-Sub 9Pin)
E84 Control	D-Sub 25Pin
Brilliant RFID	D-Sub 9Pin Round Rod Antenna.
Function	Power (Max):DC24V/4A
Flow Meter	Flow Rate=0-200 LPM. Analog output:1~5V. Pressure resistance:1.0MPa. Power consumption below 55mA
Mass Flow Control	Flow Rate=0-200 LPM. communication:RS-485. Pressure resistance:1.0MPa. Power consumption below 200mA
Laminar Flow	Power (Max):DC24V/4A
Flow Meter	Flow Rate=0~500 LPM. Analog output:1~5V.
Gas Pressure	Inlet Pressure Max(0.5~1MPa) Power consumption below 25mA.
	Outlet Pressure Max(500KPa) Power consumption below 25mA.

● 晶圓有效傳送暫存汙染防治設備

Dummy Loadport

結合AMHS及人力運輸暫存，加速產品傳送生產晶圓裝載平台 (Dummy Loadport)為自動化傳輸模組設備中的基礎，能有效降低晶圓載具以人力取貨的時間、人力運輸的閒置、掉落的風險。現場人員可透過晶圓裝載平台正確辨識產品資訊，搭配AMHS系統快速完成產品傳送，減少人力運輸風險並降低營運成本。並可整合微環境淨化設備，當FOUP暫存時可同步提供淨化氣體，持續進行FOUP內晶圓微環境內汙染防治。

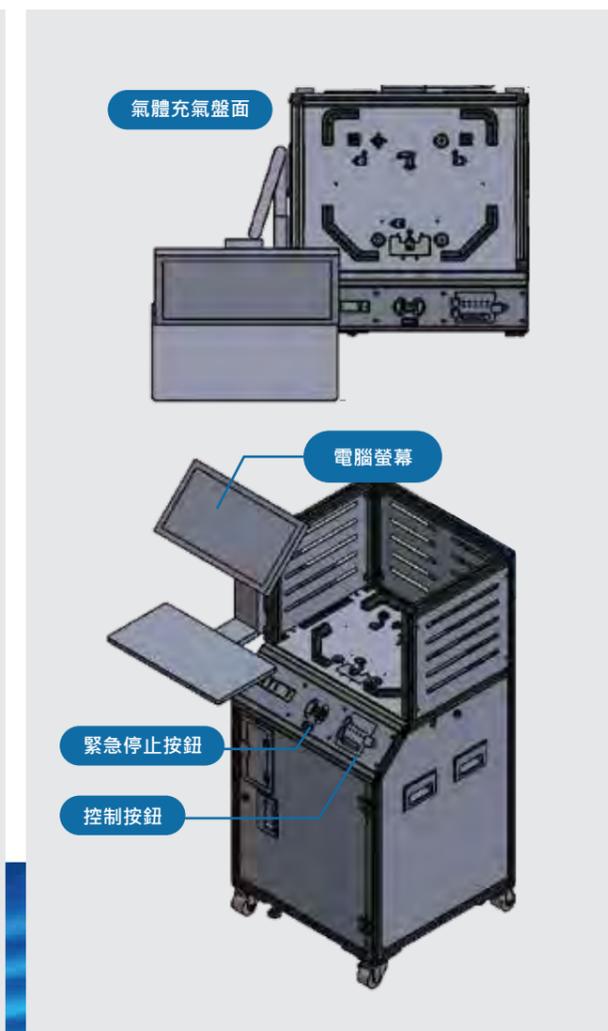
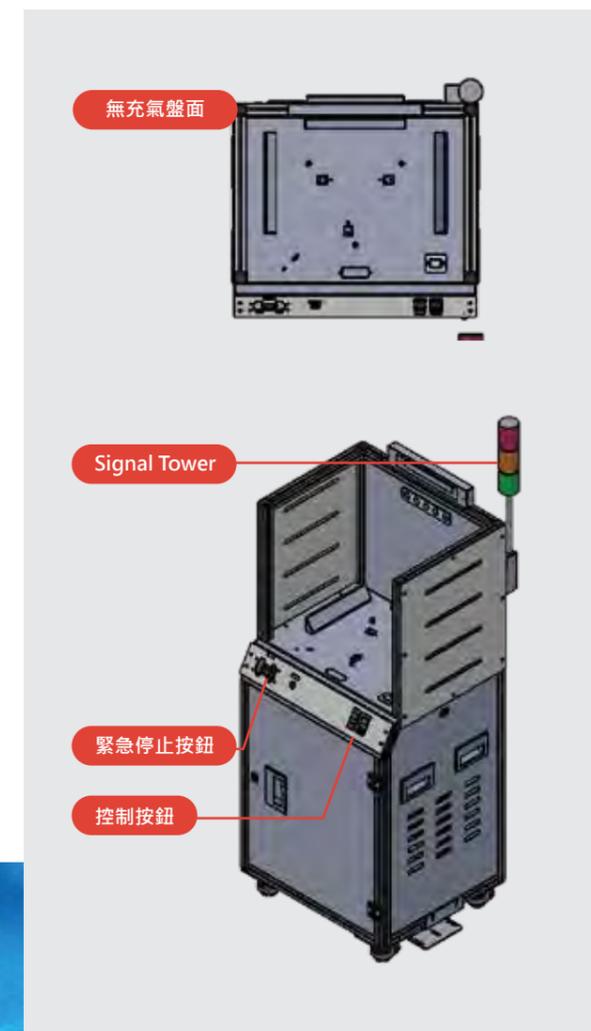
Dummy Loadport is a Fab OHT Systems load-unload transfer buffers station and it can be integrated with purging function.

產品特色

- 裝置便利
- 信息顯示
- 遠程監控與管理
- 掉落防護設計

Specifications

- Compat Design
- GUI Display
- Real-Time Monitoring and Sensing
- Disaster Avoidance



● 微污染防治

Airborne Molecular Contamination (AMC) Gas Purification Systems

華景電通提供整合微污染防治系統之方案，因應不同類型的晶圓載卸機台，透過加裝氣體充氣模組系統於製程機台中，使晶圓FOUP在生產過程中能保持淨化的微環境，避免AMC污染物與Particle等影響晶圓良率。

Brilliant provides solutions of contamination prevention Loadport Purge Systems. Retrofit the Loadport and install the gas purge system in the process tools. The system is suitable for different types of Loadports.

Keep the wafer in a clean mini-environment (FOUP) and avoid AMC and particles affecting wafer yield.

AMC Free

- Feasibility for all type of Loadports
- Disaster avoidance
- Particle Filtration $\geq 0.003\mu m$
- Support EAP controlled by CIM and integrate AMHS operations
- Equipped with monitoring sensor, pressure switch, flow meter, which can be displayed on the GUI upload to CIM/FDC in real time
- Comply with SEMI S22

產品特色

- ✓ 改造原有300mm Loadport 盤面，加裝N2/XCDA 充氣淨化功能。
- ✓ 支援各類型FOUP，可根據不同載具設計Loadport 盤面。
- ✓ 系統獨立，本體安置於Loadport下方，不佔無塵室空間。
- ✓ 模組化設計，不影響Loadport維修。
- ✓ 有效過濾 Particle $\geq 0.003\mu m$ 。
- ✓ EAP由CIM統一控管，整合AMHS自動化作業。
- ✓ 具備充氣監控，可顯示於GUI畫面並即時監控回傳至CIM/FDC。
- ✓ 提供0~500 SLM穩定氣流，大幅降低FOUP內濕度及AMC污染，有效延長Q-Time。
- ✓ 改造快速，並適用於各廠Loadport。
- ✓ 本產品通過SEMI S22認證。
- ✓ 產品可客製化設計。

Feature

- ✓ The original 300mm Loadport was modified and integrated the N2/XCDA purging function.
- ✓ Conduct design for different FOUP types.
- ✓ The system is independent, which does not occupy the clean room area.
- ✓ Particle filtration $\geq 0.003\mu m$.
- ✓ Support the unified control of EAP by CIM, and integrate AMHS operations.
- ✓ Displayed on the GUI and upload to CIM/FDC for real-time monitoring.
- ✓ Provide 0~500 SLM purge flow rate, greatly reduce the relative humidity and AMC in the FOUP and enhance Q-Time.
- ✓ Supports various Loadport types.
- ✓ This product has passed SEMI S22 certification.
- ✓ Customization.

● Loadport模組系統客製化

Retrofit Loadport Purge Systems

華景電通提供整合加裝微污染防治系統(Loadport Purge System)之方案，支援多款Loadport機台：

Brilliant provide Loadport Purge System retrofitting solutions, Compatible for various models :

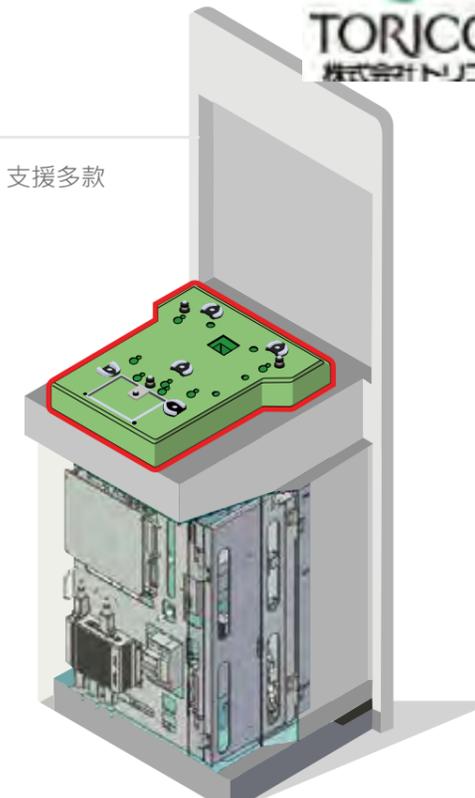
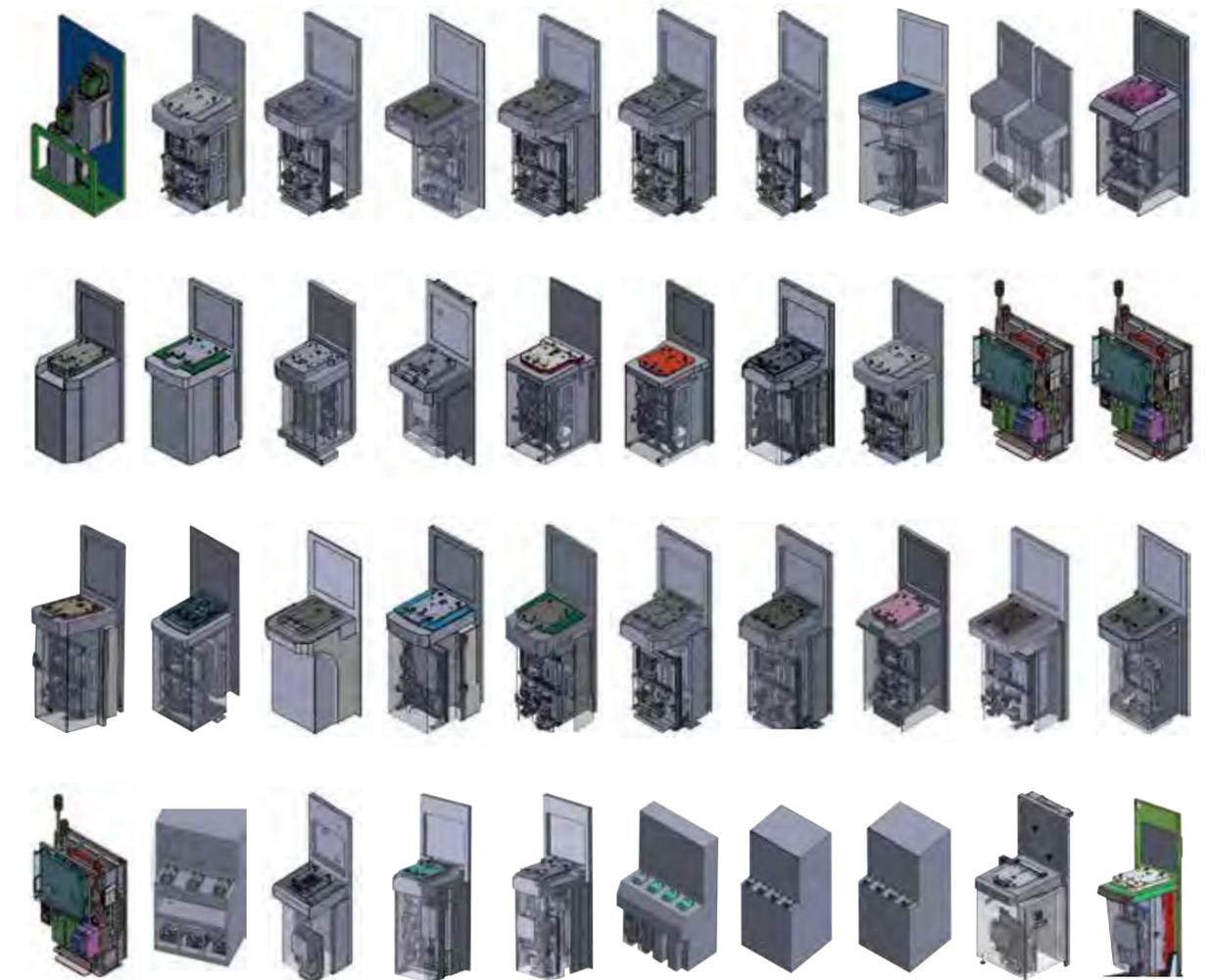
Loadport Type			
✓ Txx	✓ Sxxxxxx	✓ Axxxx	✓ Rxxxx
✓ Hxxxxx	✓ Bxxxxx	✓ Txxxx	✓ Others

Function

- Purging on FOUP
- Preventing Contamination Through Purge Port
- Gas-Filter at Inlet Port Side

Completely customized for almost all types of equipment

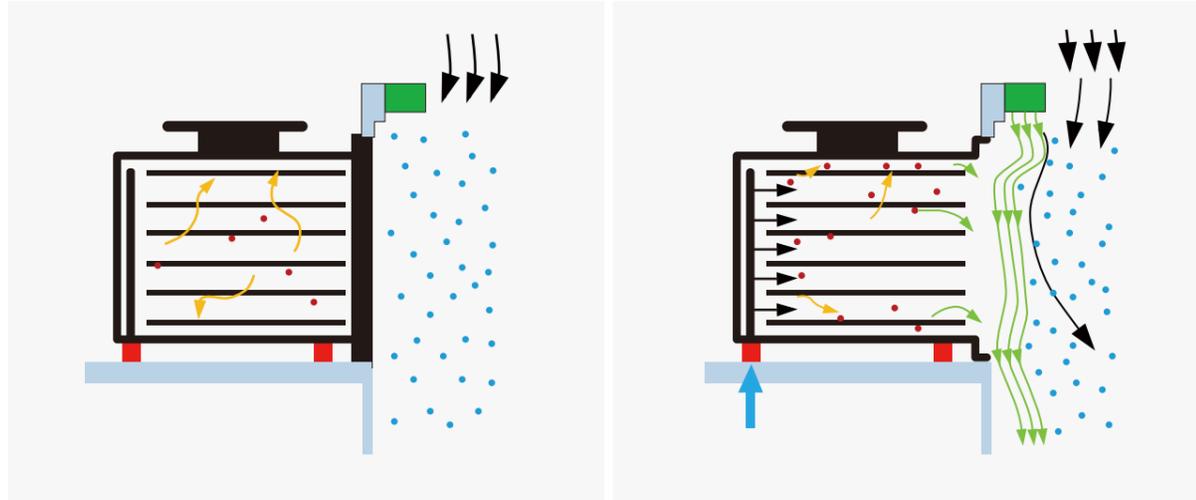
In-situ monitoring of RH / Temp / Pressure/ Flow Rate / Tool Status with Log & Chart



● EFEM流場污染防治最佳解決方案 Optimize EFEM Solutions

高效能、高品質、穩定性佳，EFEM流場污染防治最佳解決方案

The optimized solutions of contamination control for EFEM



當晶圓在晶圓傳送盒(FOUP)門開啟後，於微污染環境內待轉入製程的過程中非常容易受到污染，因此FOUP門開啟時，在FOUP門上方加裝氣簾裝置，裝置可產生層流氣簾均勻下吹，有效隔絕EFEM(Equipment Front End Module)氣流侵入FOUP內部，確保晶圓製程良率。

Laminar flow device can effectively keep from the invasion of down flow moisture and speeds up the decreasing of RH%.



利用Brilliant Purge Unit for Loadport迫淨方式，使FOUP門開啟時內部相對濕度達到約30%，再以層流裝置(Laminar Flow Device)產生一均勻氣簾，使晶圓前方位置相對濕度可達到15%以下，其餘位置晶圓表面相對濕度亦可控制在10%以下，結合此兩種方式為最佳解決方案。



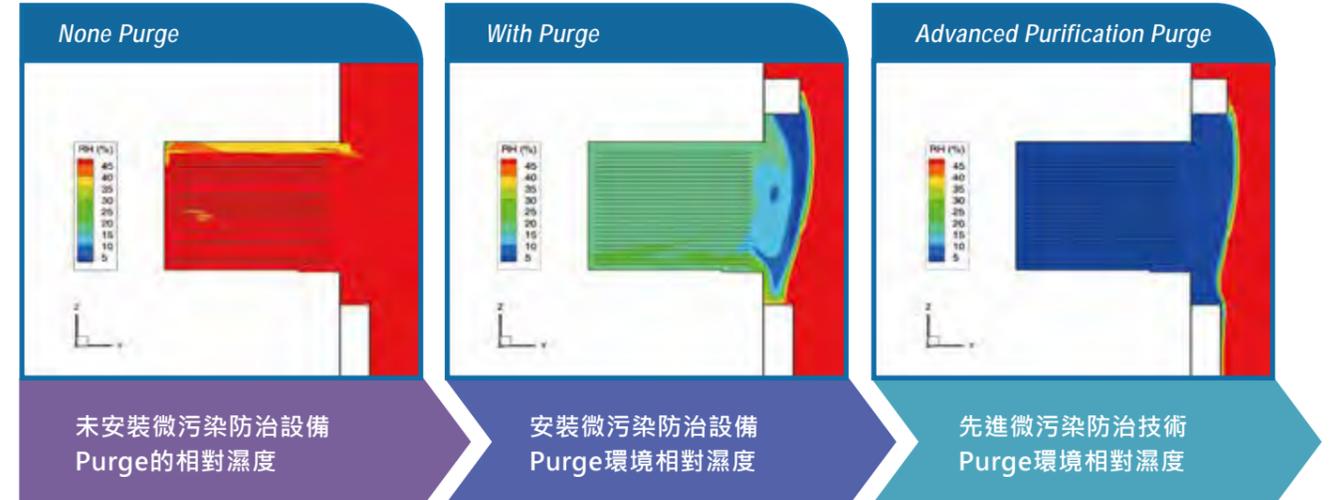
Feature

Flexibility: Operating as an independent process tool.
Defense system: Control by EAP and full authority to implement more sensors.
Full SPC chart / mechanism to ensure the quality and safety.

● 先進微污染防治技術 Advanced Gas Purifications

半導體先進奈米製程微污染防治技術

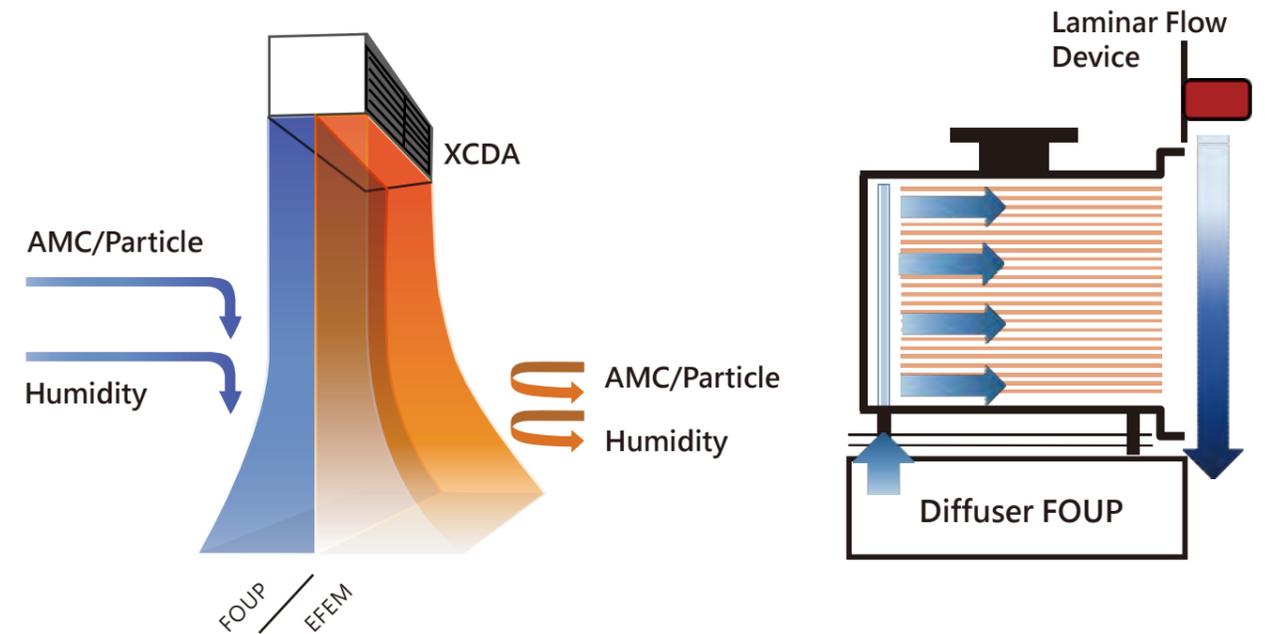
Advanced Gas Purification for technology node 5nm & beyond.



未安裝微污染防治設備
Purge的相對濕度

安裝微污染防治設備
Purge環境相對濕度

先進微污染防治技術
Purge環境相對濕度



華景提供客戶客製化服務的平台，向上服務客戶，向下供應鏈的管理
We provide a platform for customized services,
serving customers up and managing down the supply chain.

FOUP / FOSB 淨化氣體充填設備

FOUP / FOSB / Reticle Standalone Purge Systems

華景電通所設計的氣體充填站設備，為有效去除晶圓盒環境內的水氣及氣態汙染物等，延長晶圓製程Q-Time而設計的氣體充填設備，以AMHS設備特性區分為不同種類型產品，如OHB/UTS、Standalone等。Brilliant Purging Buffer Station for Wafer/Reticle Carrier Purification. Specially designed to remove moisture and oxygen content for extend Q-Time. Including OHB/UTS Standalone Purge Stations.



華景電通FOUP Standalone為延長晶圓製程Q-Time設計的氮氣充氣設備，可自動化配合晶圓生產製程進行FOUP氮氣充氣或於緊急狀況搭配GUI介面操作由人員手動進行充氣。

Brilliant FOUP Standalone is a nitrogen purge equipment designed to extend the Q-Time of the wafer process. It can automatically be scheduled during the wafer production process to carry out FOUP nitrogen purge. Or in emergency situations, it can be manually purged by technician with the control of GUI interface.

華景電通FOSB Standalone為用於製程中或晶圓包裝出貨，亦為延長Q-Time而設計的氮氣充氣產品，與FOUP Standalone不同點在於使用的充氣晶圓盒為FOSB (Front Open Shipping Box)，其充氣之進出氣孔位搭配FOSB設計。

Brilliant FOSB Standalone is a nitrogen gas purge product designed for in-process or wafer packaging/shipment. It is also designed to extend Q-Time of wafer. It is different from FOUP Standalone that the wafer box used is FOSB (Front Open Shipping Box) and its gas inlet and outlet path is compatible with FOSB.

OHB / UTS N2 PURGE SYSTEM

Overhead Hoist Buffer / Under Track Purge System

用於製程前段，安裝於自動化軌道下方或側邊，專門為了去除水分與氧氣含量、延長Q-TIME而設計的氮氣充氣產品，能搭配半導體AMHS自動化設備使用，且體積小不佔空間，亦能配置在離倉儲系統較遠的製程設備旁，縮短OHT的運送時間。

It is used in the front of the process and is installed under the Fab automation track. It is specially designed to remove moisture and oxygen content and extend Q-Time.



產品特色

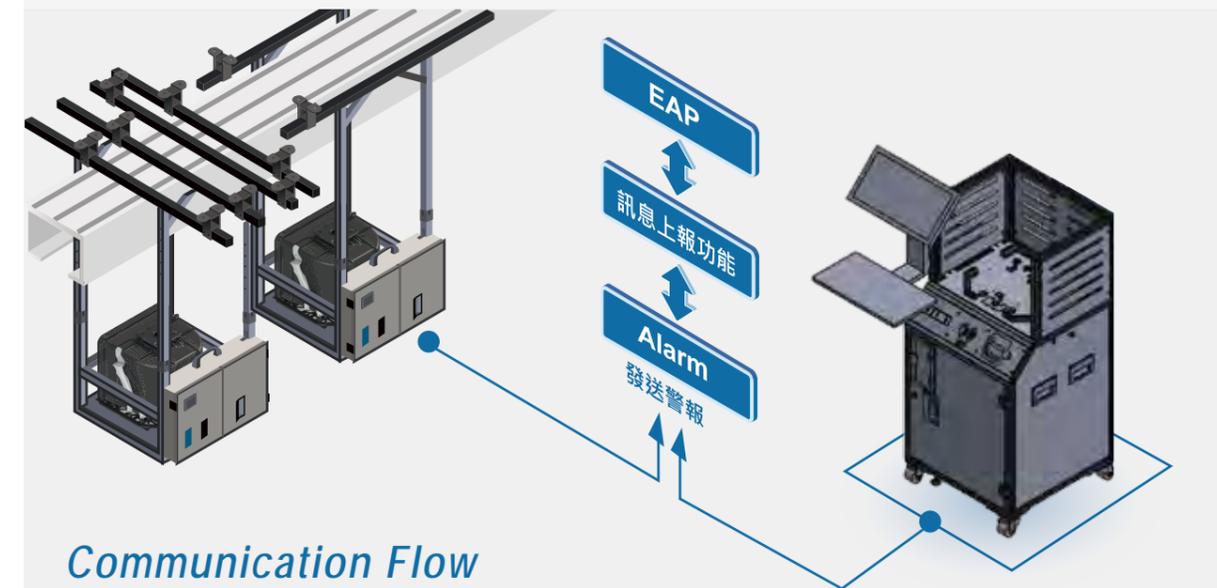
- ✓ 支援Recipe功能
- ✓ 質量流量控制器
- ✓ 濕度監測器
- ✓ FDC&報警功能
- ✓ 支援RFID功能

Feature

- ✓ Support Recipe Function
- ✓ FDC & Alarm Function
- ✓ Support RFID Function
- ✓ Relative Humidity Monitoring

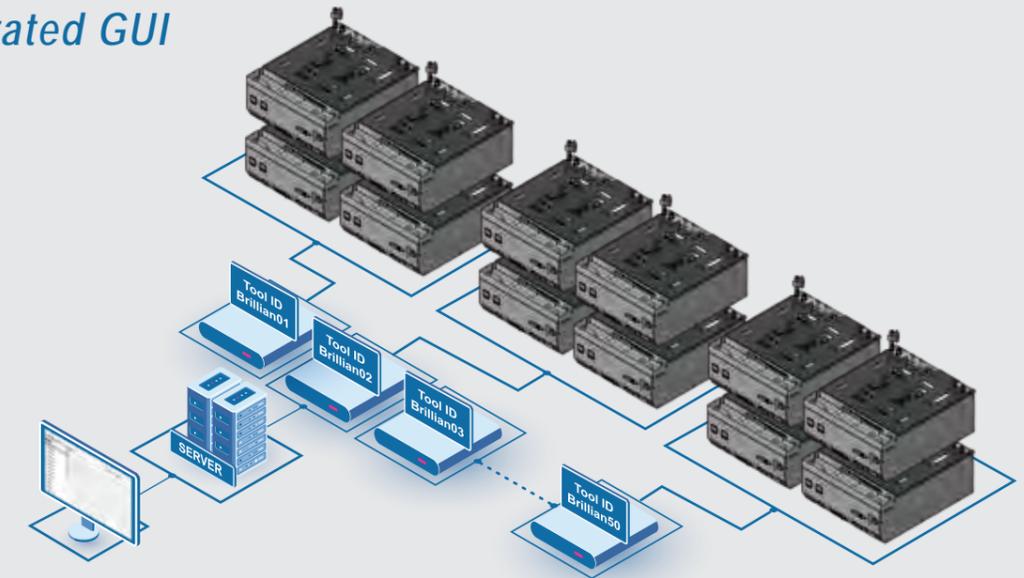
Brilliant N2 Purge Solution N2微環境淨化系列產品，支援AMHS(Automatic Material Handling System)自動化物料搬運車OHT(Overhead Hoist Transport)以及支援AGV(Automated Guided Vehicle)自走物料搬運車傳送系統，整合Stocker使用嵌入式Embedded氣體淨化系統，高空物料暫存區淨化系統OHB N2，以及設備機台端配置Standalone Station等。

- ✓ Purge Flow: 0~50 SLM
- ✓ Purge Time: 0~1800S
- ✓ RFID System Embedded
- ✓ Mass Flow Controller
- ✓ Recipe Setting Available
- ✓ Humidity Monitor
- ✓ FDC & Alarm Function
- ✓ EAP(SECS GEM)
- ✓ GUI / Displayed



Communication Flow

Integrated GUI



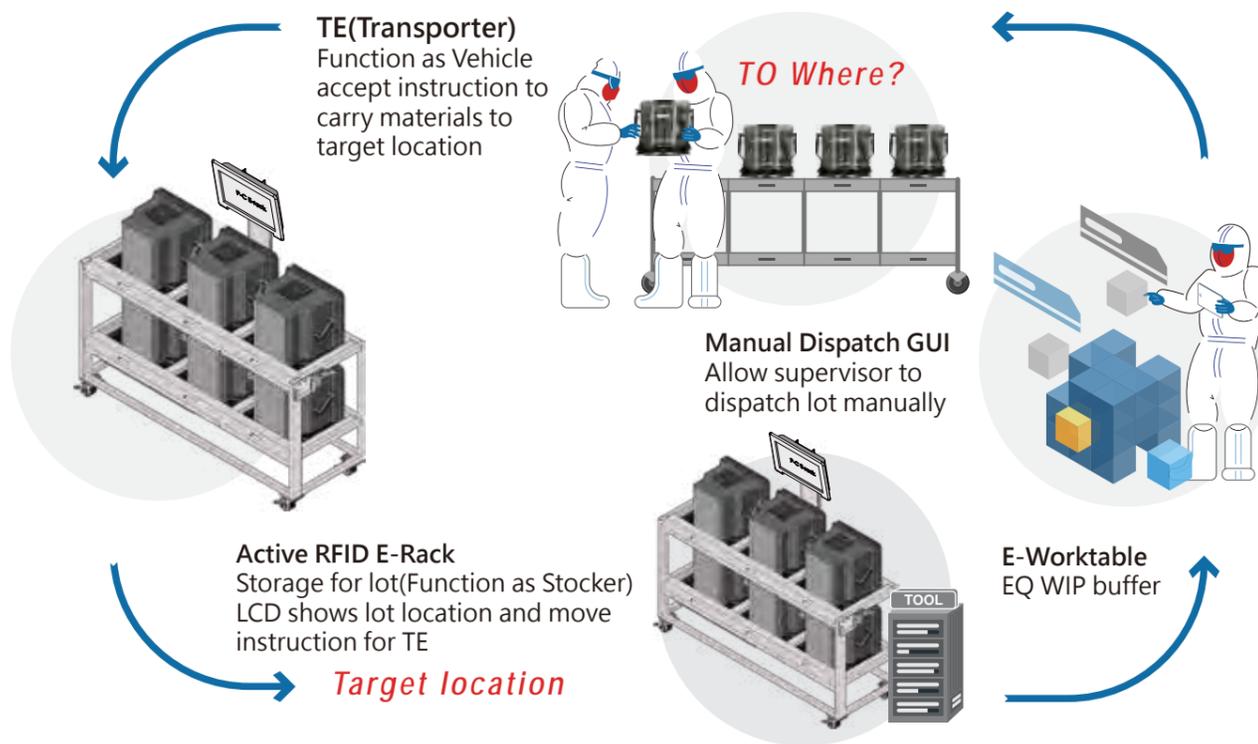
Optional Monitoring and Sensing for N ports.

每個Tool ID可控制N Ports並透過系統整合介面，收集各Port即時資訊。
Support : SECS、NRMS、SVID、CEID、FDC、LOG、ECS

關鍵材料傳載追蹤識別管理系統

Critical Material Tracking and Identification Management System

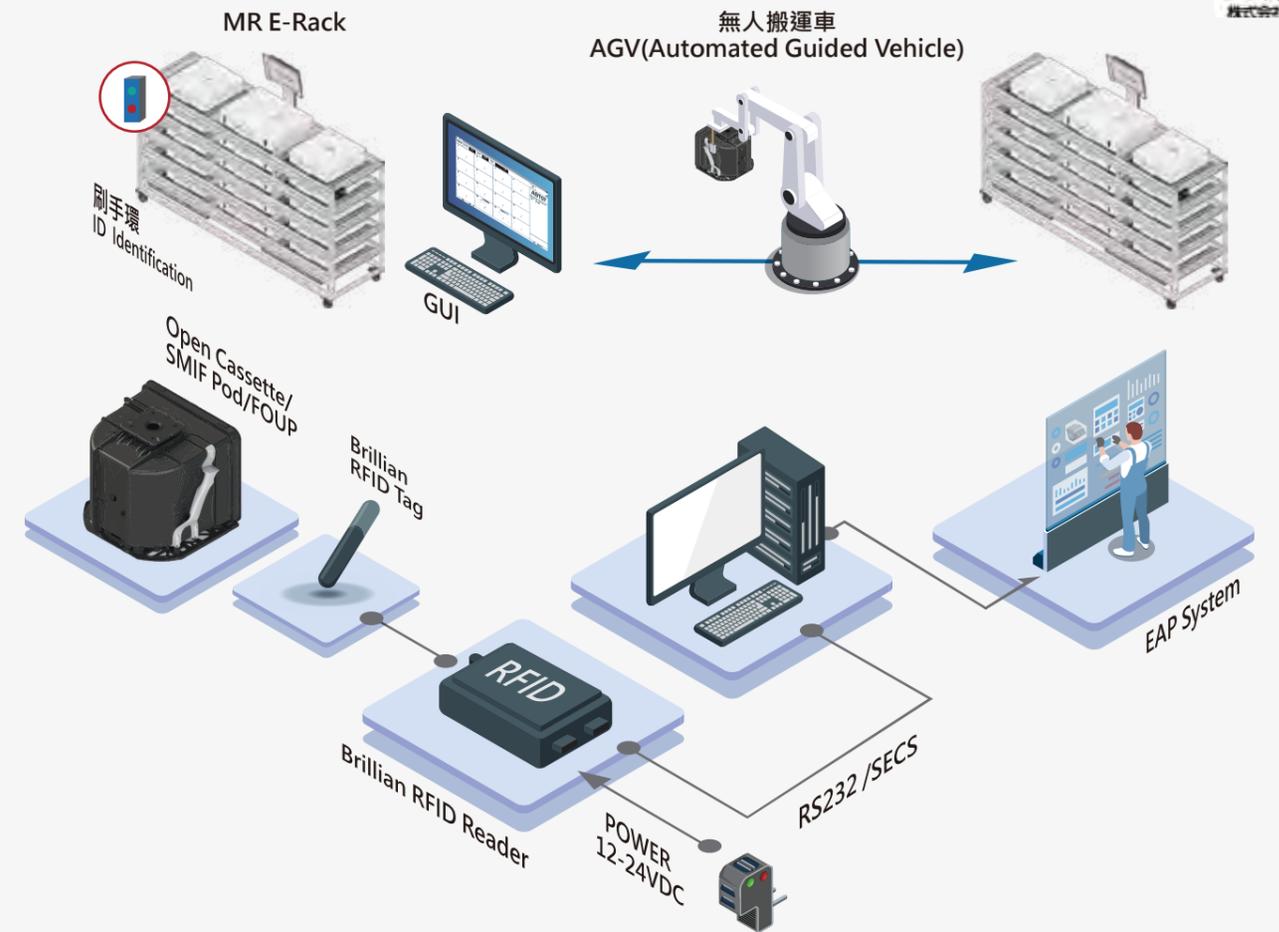
- 由BMHS系統中央控管各類型電子貨架及各類型智能儲放裝置。
 - 整合MES及BMHS管理系統，實時控管廠內所有物料。
 - 降低找貨時間70%以上，提高生產效率。
 - 移機方便，擴充快速容易，彈性配置電子貨架數量及區域，達到最佳使用率。
 - 提供各種統計數據，便於分析及決策進行，達到人員及儲位配置最佳化。
 - RFID Reader輔助生產前確認物料及站點檢查，減少錯誤風險。
- ✔ Integrate MES and BMHS management systems to control all materials in the plant in real time.
 - ✔ Significantly reduce the time for finding goods by more than 70% and improve production efficiency.
 - ✔ Easy to move, the expansion is fast and easy, and the number and area of electronic shelves can be flexibly configured to achieve the best utilization rate.
 - ✔ Statistical data facilitates analysis and decision-making, and optimizes personnel and storage allocation.
 - ✔ RFID Reader can confirm whether the material and site are correct before production, which can effectively reduce the risk of errors.



電子貨架 E-Rack
Mobile Roboter E-Rack

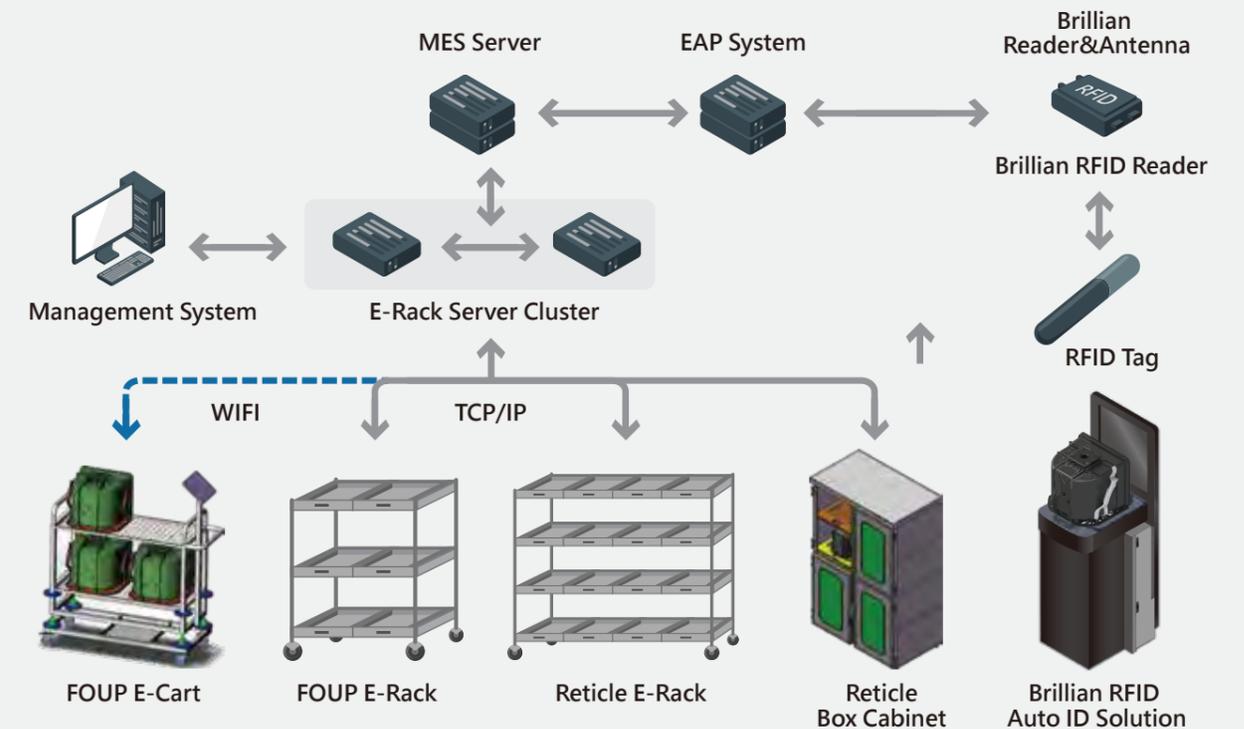


無人搬運車 AGV
Automated Guided Vehicle



電子廠自動化RFID管理系統

RFID Management Systems for 8", 12" Wafer Fab



● 晶圓載具電子貨架，各類型RFID自動化產品 Brilliant Material Handling Solution (BMHS)

一站式解決方案，可彈性配置，提高生產力、提升品質

One-stop solution, flexible deployment, improve productivity and quality

Brilliant推出之FAB半自動化物料搬運方案。

透過各種智能型物料儲存裝置，整合BMHS系統及數據庫，在第一時間定位物料位置並決定傳送路線，達到物料傳送最佳化設計，並透過數據分析提供決策建議及人員績效考核。

300mm Wafer E-Rack (12寸電子貨架RFID)	200mm Wafer E-Rack (8寸電子貨架RFID/Smarttag/Barcode)
Reticle E-Rack (光罩電子貨架RFID/Barcode)	Reticle Box Cabinet (光罩盒儲存櫃Barcode)
200mm /300mm RFID Read & Write Station	200mm/300mm/Reticle N2 Cabinet (氮氣櫃RFID/Barcode)
Brilliant Auto ID Series (RFID Reader)	200mm/300mm E-Cart (電子推車RFID/Smarttag/Barcode)

● 電子標籤 Brilliant Multipage 32mm Glass Transponders

用於晶圓盒管理、車輛識別、容器追蹤、資產管理和廢物管理應用。

Application in wafer Cassette, FOUP, FOSB, Reticle Pod management, Vehicle identification, container tracking, Asset Management etc.

能在134.2 KHz 頻率下運行，BR 電子標籤採用調諧工藝製造，提供一致的讀寫性能。

特定產品符合 ISO 11784 和 ISO 11785 全球開放標準，電子標籤經過完整的功能和參數測試。

Brilliant Multipage 32mm glass transponders provide superior performance and operate at a resonance frequency of 134.2 KHz. Specific products are compliant to ISO 11784 and ISO 11785 global open standards, the BR transponders are manufactured with tuning process to provide consistent read and write performance.

The transponder is well suited for use in a broad range of applications including, but not limited to, wafer cartridge management, vehicle identification, container tracking, asset management, and waste management applications.



Electrical Characteristics		
Parameter	Multipage Transponder	Unit
Memory	1360	bits
	17 Read / Write	pages
Operation Frequency	134.2	kHz
Modulation	FSK(frequency shift keying), 134.2kHz and 123.2kHz	
Transmission Principle	HXD(Half duplex)	
Power Source	Powered from the reader signal(batteryless)	
Typical Read Range	≥100	cm
Typical Programming Range	30% of specified reading range	
Typical Read-Time	86	ms
Typical Programming Time	293	ms
Typical Programming Cycles	100000	times

E-Rack管理系統 三大特色 E-Rack Management Systems

區域性 Regional

可監控各區域內貨架的使用情況，並可隨時進行微調，精準提升工作效率。

The usage of shelves in each area can be monitored, and fine-tuning can be made at any time to improve efficiency.

個體性 Individuality

獨立監控貨架的運行情況，觀察其貨架使用情形，能即時發現運作錯誤進行控管。

Independently monitor the operation of the racks to observe their usage and errors.

人員績效管理 Productivity Improvement

可輔以電子手環，紀錄搬運路線與批貨量，有利於人員績效考核。

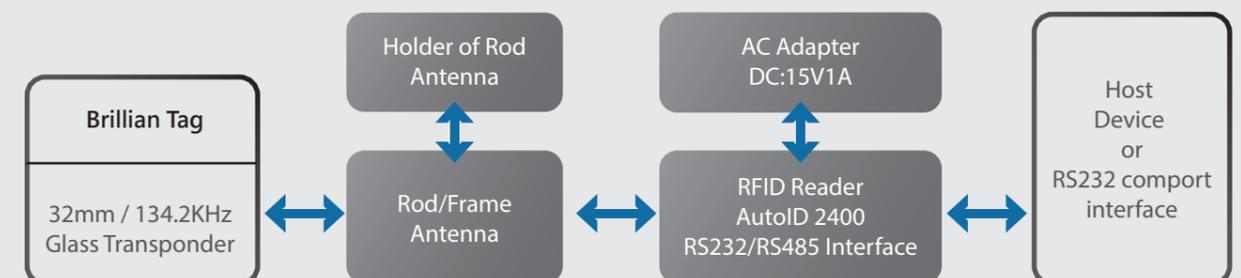
Auxiliary electronic bracelet to record handling routes and batches, which is convenient for personnel assessment.



● 自動化追蹤識別系統 RFID Management System

華景電通提供具備 RFID 的電子貨架、RFID Reader及 RFID 追蹤系統。RFID Reader可客製化裝載在需求設備上，運用RFID自動識別系統達到物料控管。電子貨架因應不同類型的晶圓、光罩尺寸，提供合適的晶圓載具標籤及具備 RFID 的電子貨架，使晶圓或光罩的儲存得以即時監控與追蹤，避免晶圓的遺失與錯置，提升物料管理的追蹤能力。

Brilliant integrates E-Rack, RFID Readers and RFID tracking systems. The RFID Reader can be customized and installed in the required equipment, and the RFID automatic identification system can be used to handle the materials. Brilliant's E-Rack are designed according to different types of wafers (8",12") and mask sizes, so that the storage of wafers or masks can be monitored and tracked in time, avoiding the loss and misplacement of wafers, and improving the tracking ability of material management.



客製化ODM、IDM專業服務

CM, ODM and IDM Model Service

Brilliant 擁有豐富經驗與技術，我們協助客戶提供專業且完整的客製化方案！
研發團隊追求卓越，同時超越自我，設計改良出更好的解決方案！

Brilliant is close to its customers for collaboration and access to services.



CONTRACT MANUFACTURING

Customer design and provides drawing, formulas, BOM and specification
Brilliant manufactures and tests



ORIGINAL DESIGN MANUFACTURER

Customer provide concept, requirements and specification document
Brilliant designs, drafts, manufactures and tests.



INTEGRATED DESIGN AND MANUFACTURING

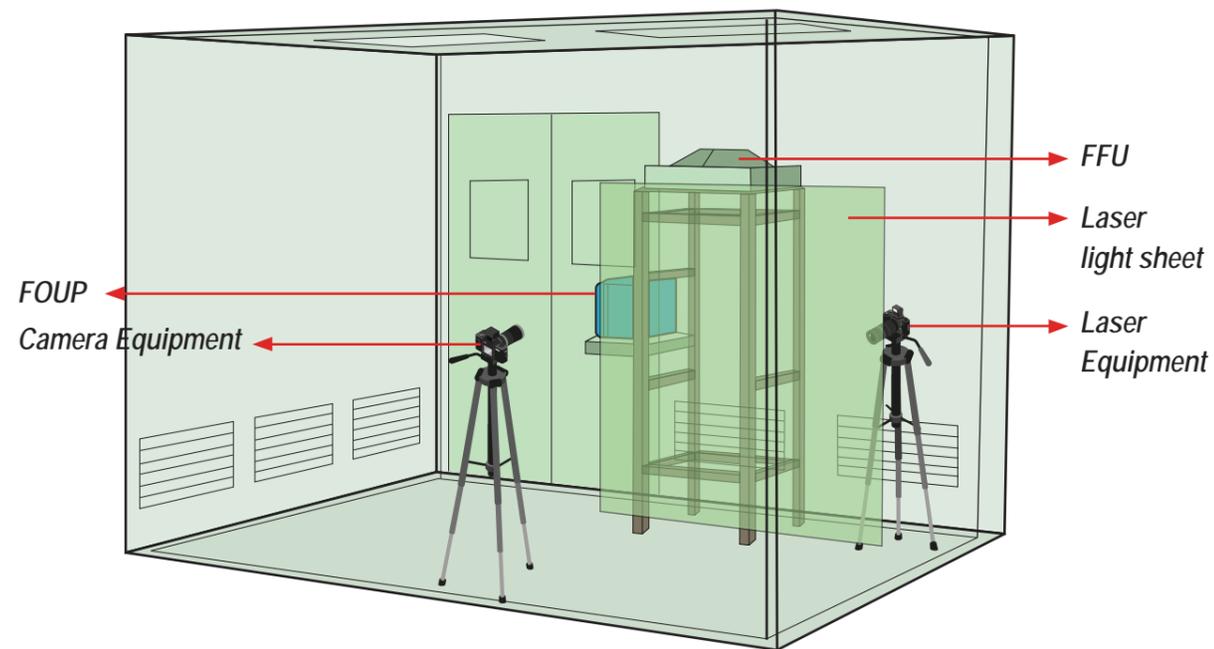
Customer provide RFQ and specification document
Brilliant designs, develops, manufactures, tests, installs and services

● 流場可視化模擬系統

Flow Visualization System

流場可視化模擬系統搭配HEPA及FFU重現微環境EFEM內部流場，作為開發環境實驗的利器。

Brilliant develops a way to visualize the cross-effect of EFEM down flow and the FOUP purging flow.
This system was conducted to investigate the feasibility of the EFEM down-flow and FOUP opening purge.



產品特色

利用EFEM模擬環境架設雷射光頁產生器，搭配水霧器產生流場，當雷射光幕照射在流場時，流線即可清晰顯示，並可利用高速攝影機製作流場分析數據。

Feature

- ✔ This system is a feasibility study of the FOUP purging performance improvement as an attachment on the EFEM and the FOUP door-open purge.
- ✔ Optimize design parameters since the EFEM flow can be affected by various EFEM conditions during FOUP purging.

● FOSB嵌式氣體充填系統

Embedded FOSB Standalone Purge System

配合半導體AMHS倉儲系統，設計整合嵌式充氣設備系統。

安裝位置在倉儲(Stocker)系統一側安裝此機台，針對FOSB進行充氣，可保持FOSB內低濕度、低含氧並監控所有數值回饋與客戶端。

Stocker integrated FOSB N2 purge system, can be 180° rotationable. The equipment is for FOSB purge.
It is a customization designed to remove moisture and oxygen content.



產品特色

FOSB嵌式氣體充填系統新增盤面旋轉180度功能，克服機械手臂下貨時FOSB無法轉向的問題，研發團隊不斷測試所有動作流程以及模擬下貨時會發生的異常狀況，滿足客戶客製化需求。

Feature

- ✔ Support SECS/GEM Communication E84
- ✔ OHT-Load / Unload
- ✔ FOUP/FOSB Carrier
- ✔ RFID, Barcode

● E84模擬器&光學收發器

E84 Sensor (PIO:Parallel Input/Output)

Brilliant E84模擬器符合SEMI E84 標準規範，用於模擬Active(模擬器)對自動化設備端E84 Passive Sensor進行輸入及輸出的傳輸訊號驗證、測試、除錯(通過DB-25接口連接E84收發器)。

E84 模擬器 & 光學收發器完全符合SEMI 標準E84 規範，並兼容符合SEMI 標準E84規範的收發器。在光學上延伸主動和被動端之間進行I/O通信。

E84 Sensor(PIO : Parallel Input/Output)

It is a device for conducting training and control between the fully automatic transmission device Vehicle (AGV/OHT) and equipment used in the semiconductor. High stability for RF (wireless communication) and IR (Infrared communication), with a strongly anti-interference.



Brilliant E84 模擬器 & 光學收發器可單機操作，也可透過RS232連接電腦，即時圖形化顯示訊號時序，同時提供明確的訊號錯誤碼與訊號時間資訊，以利快速分析。

資料儲存則提供2種方式：

方式一：為單機資料儲存功能（無須其他電腦設備）。

方式二：為連接電腦端的儲存資料。

Brilliant E84 Sensor can be a unit operation or connected to a computer by RS232, which can display the signal timing in real-time graphically. It also provides signal error code and signal time data for quick analysis.

Provides 2 ways of data storage:

Method 1: Stand-alone data storage (don't need other equipment).

Method 2: Connect to a computer to store data.



Feature

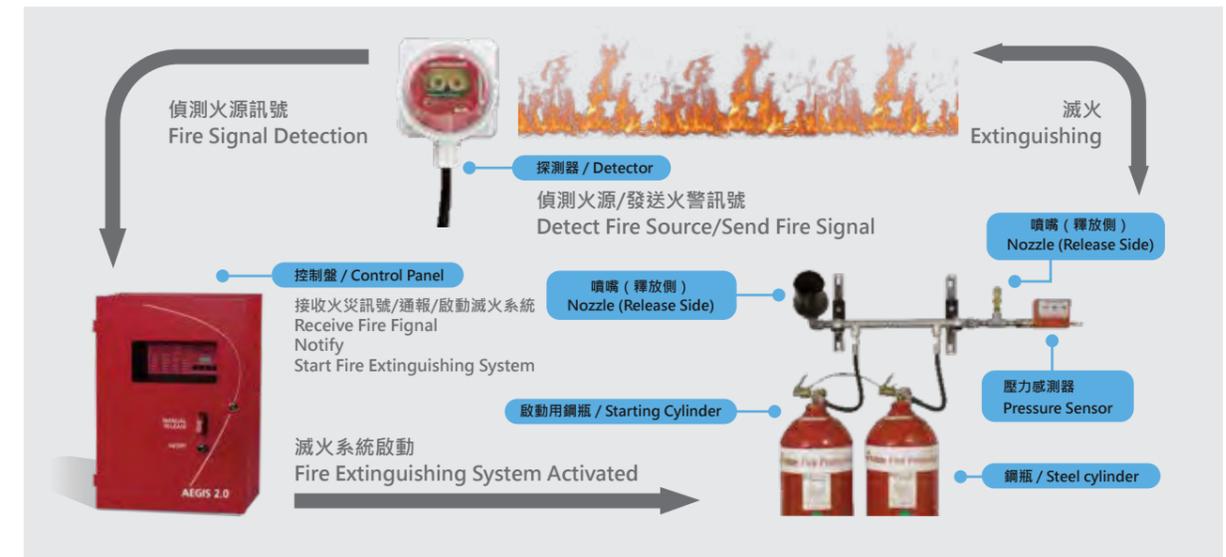
- ✔ Compatible with the parallel input and output parts of SEMI standard E84.
- ✔ 100% optical and mechanical compatibility with DMS-HX1 and DM-HX1 optical data transmission equipment.
- ✔ Provide indicator LEDs for input, output and wiring signals, and power status indicator.

● 火警監視控制系統

Fire Protection System

火警監視控制系統的CO2滅火系統為無色無味的乾燥氣體，釋放後不留下任何的殘餘物，無保存年限，主動回報設備動作同時機台停機以及訊號移報通知ERC或廠務系統，適合預防B類及C類火警。

The CO2 fire extinguishing system of the fire alarm monitoring and control system is a colorless and odorless dry gas, which does not leave any residue after release, and has no shelf life. Prevention of Class B and Class C fires.



- 滅火類型：降低防護區含氧量，以阻絕助燃物，達到滅火效果。
- 儲存裝置為高壓鋼瓶，需謹防碰撞以致鋼瓶傾倒造成人員傷害。
- 需要注意因噴放之藥劑無色無味，如噴放時無警示，可能會導致人員缺氧窒息。
- Type of fire extinguishing: reduce the oxygen content in the protective area to block the combustion aids and achieve the fire extinguishing effect
- The storage device is a high-pressure steel cylinder, and it is necessary to prevent collisions so that the steel cylinder may fall and cause personal injury.
- It should be noted that the sprayed chemicals are colorless and odorless. If there is no warning during spraying, it may cause suffocation due to lack of oxygen.

產品規格

- ✔ 火焰探測器：光、火焰探測器&紫外線/紅外線偵測器。
- ✔ 溫度探測器：雙金屬差動/金屬膜定溫偵測器/線性偵測器。
- ✔ 煙霧探測器：光電遮蔽偵煙型/離子偵煙型/雷射光電型。
- ✔ 儲存裝置 & 啟動裝置：高壓鋼瓶&啟動電磁閥。

Feature

- ✔ Flame Detector : Light, flame detector & ultraviolet/infrared detector.
- ✔ Heat Detector : Bimetallic differential/Metal film constant temperature detector/Linear detector.
- ✔ SSmoke Detector : A photoelectric type smoke detectors and shielding/ Ion type smoke detectors / Laser photoelectric type.
- ✔ Storage Device& Actuator : High pressure steel cylinder & Start the solenoid valve.