

HML Coater™

WIDE APPLICATION IN THIN FILM



產業概況 THIN FILM INDUSTRY OVERVIEW



The flexible electronics market is demanding thin film materials with an ever increasing range of functionality for applications like: consumer electronics, semiconductors, optics, building materials and alternative energy.

The Daryl Hybrid Multi-Layer (HML™) Vacuum Web Coater is leading the way for innovation of vacuum deposited organic and inorganic coatings on film substrates. The continuous roll- to-roll HML™ process is suitable for large scale production of high quality thin films with unmatched production efficiency and product development

薄膜具有輕薄柔韌之特性，近年來廣泛運用於半導體、民生、光電、材料及能源產業，尤其在軟性電子產業中更是扮演著關鍵性角色。

Darly Custom Technology以創新、領先的科技，結合最新表面處理及真空鍍膜技術，研發出HML™(Hybrid Multi-Layer)有機/無機材料混合多層膜製程，並導入R2R卷對卷連續式軟性基材真空鍍膜設備，進而開發出HML Web Coater混合式多層膜真空鍍膜設備。HML™技術突破傳統濕式塗佈工藝，在軟性基材上實現連續的真空塗佈和無機鍍膜，形成有機及無機膜層交錯堆疊的多層薄膜；真空塗佈製程提高塗佈精度與材料純度的同時，亦能大幅降低原料成本、減少環境污染，衍生出更多獨特的應用。

HML™製程可應用於硬化膜(Hard Coat Film)、包裝材料(Packaging Materials)、阻隔膜(Barrier Film)、電容薄膜及更多的功能型複合薄膜產業；R2R連續式製程適合大量生產，兼具生產效率及品質穩定，預期將為薄膜產業帶來更多發展及效益。

capability. A multi-layer, organic - inorganic - organic, structure is deposited on films at high speeds in a single pass with zero pinholes. The HML™ process utilizes a method for coating 100% solids with superior precision that provides significant advantages over traditional solvent based deposition methods thus decreasing production costs and reducing environmental impact.

The HML™ Web Coater can be used for variety of applications such as: hard coat films, packaging materials, barrier films and many other functional coatings.

設備特色 KEY FEATURES

- + 無需溶劑，環保無污染
- + 真空環境塗佈有機高分子薄膜
- + 膜厚均勻可控制，實現超薄膜層
- + 在同一製程中完成有機與無機膜層
- + 膜層高純無殘雜，表面平滑無針孔
- + 製程超越傳統大氣塗佈無法實現之功效
- + 表面性能改質（防刮、高透光、親/疏水等）

- + Organic coating in the vacuum environment
- + Clear, transparent and pinhole free films
- + Complete organic and inorganic process in one step
- + High uniform and coating thickness control for very thin layers
- + Contained, solvent free process with no environmental impact
- + A wide range of surface properties available from hydrophilic to super hydrophobic
- + Coating formulations can be utilized that are unavailable with traditional coating methods



關鍵組件 KEY COMPONENTS



Main Chamber



Film Winding Drive System



UL Computer Operation Station

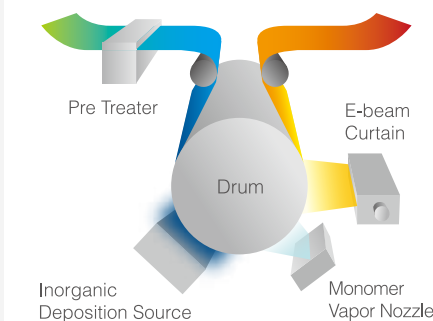
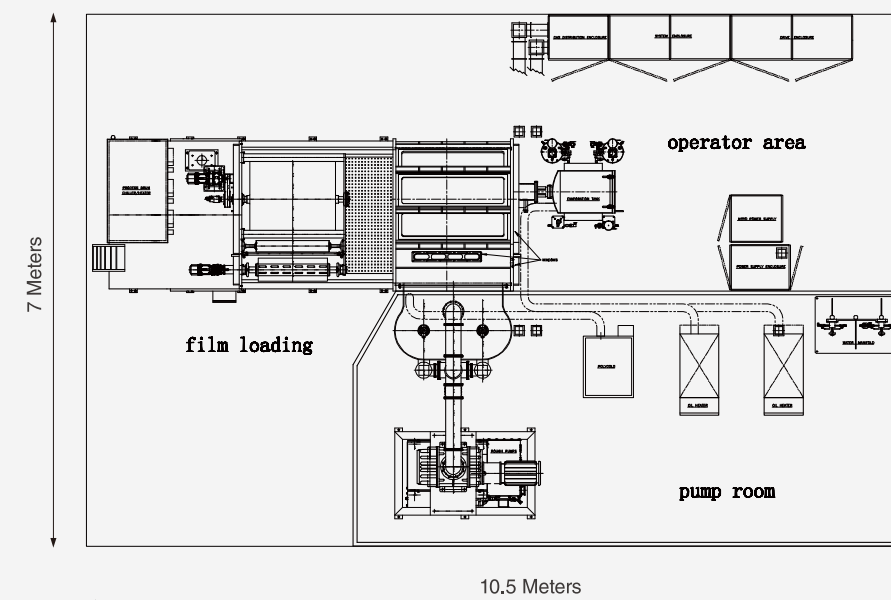


Pumping System



Polycold

配置圖 LAYOUT



Hybrid Coating Process
*Multi-layer Available

主要規格 SPECIFICATION

Basic Unit

Coating Width	17" to 80" (450mm ~ 2,000mm)
Roll Diameter	24" max.
Process Drum	40" max.
Rough Pumping	Rotary Pump Plus Blower
High Vacuum Pumping	Diffusion Pump
Moisture Pumping	Water vapor cryopump
Power Source	380V, 3 ph, 50/ 60 Hz
Cooling Water	20 gpm @ 30 psi 20 ± 2 °C
Compressed Air	70 psi Filtered

Selection component

Monomer Delivery	Vapor or Liquid Monomer
Curing Tool	E-Beam or Plasma
Deposition Tool	Thermal or Sputtering or E-Beam Gun
Measurement & Monitor System	On-line PEM Thickness Monitor