



(주)엔비코어 제품 카탈로그

회사소개

업체명

(주) 엔비코어

설립일

2010.04.26

소재지

본사 : 대전광역시 유성구 테크노2로 199, 미건테크노월드 1차 314호

기업부설연구소 : 대전광역시 유성구 테크노2로 199, 미건테크노월드 1차 315호

홈페이지

<http://www.nbcore.com>

이메일

nbcore@nbcore.com

생산품

- 인쇄 전자 장비 사업부
 - 실험용 / 생산용 인쇄 전자 장비 코팅(Slot-die, Bar Coater, Micro Gravure)
- 계측 & 제어 시스템 사업부
 - 3D Printing System & EHD Printing System
 - Machine Vision & A.I SW
 - System Integration
 - 3차원 생산 설비 제어 및 모니터링
 - 중력 가속도 모션 시스템(KOLAS 인증 기기)

주요이력

POSCO, ADD, KATECH, KIMM, ETRI, LGD, SAMSUNG, DOOSAN etc

System 설계 및 Software 개발 및 납품

PBF, BJ, PolyJet 타입의 3D 프린팅 시스템 개발(Slicing Alg & EXOR Alg etc)

POSCO 소프트웨어 소싱 그룹(계측 & 제어, Vision)

로고



사업영역

재료 실험 장비

- R2R 인쇄 / 코팅 장비
 - 인쇄 : 그라비아 오프셋, 리버스 오프셋, 플레소, Imprint
 - 코팅 : Slot-die, Bar Coater, Micro Gravure
- R2P / P2P 인쇄 장비
 - 인쇄 : 실린더 그라비아 오프셋
 - 코팅 : Slot-die, Bar Coater, Micro Gravure
- Roll to Roll 인쇄/코팅 장비
 - 인쇄 : 그라비아 오프셋, 리버스 오프셋, 플렉소, Imprint
 - 코팅 : Slot-die, Bar Coater, Micro Gravure

복합 실험 장비

- R2R 인쇄 + R2R 인쇄 장비
 - 1도 인쇄 : 그라비아 오프셋, 리버스 오프셋, Imprint
 - 2도 인쇄 : 그라비아 오프셋, 리버스 오프셋, Imprint
- R2R 인쇄 + 코팅 장비
 - 1도 인쇄 : 그라비아 오프셋, 리버스 오프셋, Imprint
 - 2도 코팅 : Slot-die, Bar Coater, Micro Gravure
- R2P / P2P 인쇄 + 코팅 장비
 - 1도 인쇄 : 실린더 / 플레이트 그라비아 오프셋
 - 2도 코팅 : Slot-die, Bar Coater, Micro Gravure

계측&제어 장비

- 3D Printing System
 - 산업용 3D Binder Jet System
 - 중/대형 Build Volume
- Machine Vision & A.I
 - 영상 처리 및 분석, 예측 SW 개발
- System Integration
 - 다관절 로봇 및 계측&제어 시스템 SW 개발
- 3차원 생산 설비 시스템 모니터링 및 제어



주요제품

Printed Electronic Equipment Division



Plate Bar Coater



Roll to Roll
Micro Gravure Coater



Roll to Plate
Gravure Off-Set Printer



Roll to Roll
Imprinter



Roll to Plate
Gravure Off-Set Printer



Roll to Roll
Slot-Die Coating Printing



Roll to Roll
Imprinting System

Measurement & Control System Division



Multi Piezo Header
3D Printer



중력 가속도 모션
시스템



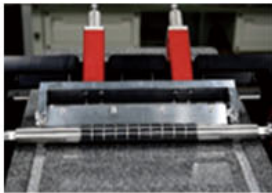
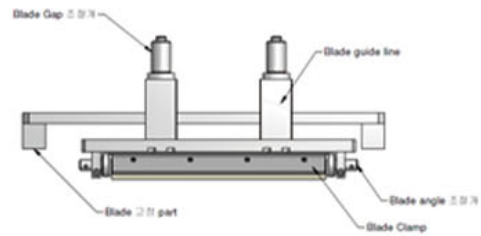
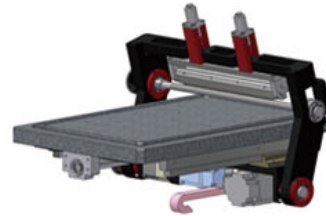
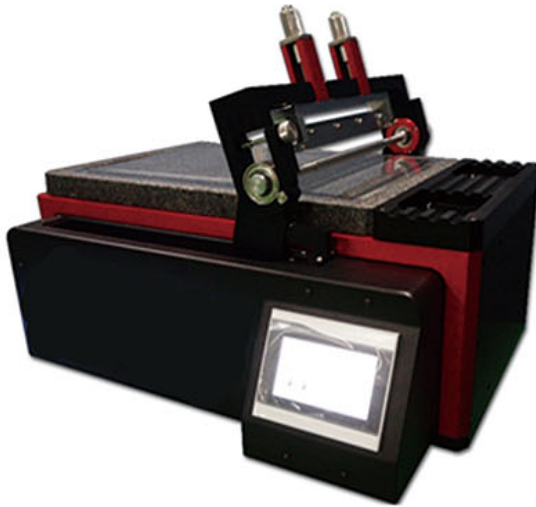
산화층 두께 측정
시스템



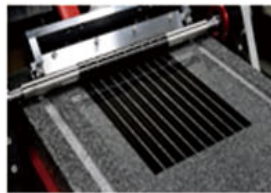
Binder 3D Printer



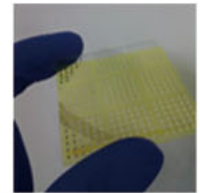
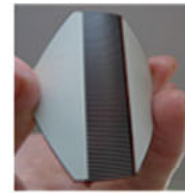
NB-PBC-200 Plate Bar Coater



Bar coater



Coating sample



Application

Specifications

- Bar diameter
 - $\varnothing 12.7 \sim \varnothing 19.05$
- Bar length
 - 400mm
- Coating width
 - ~ 240 mm
- Coating thickness
 - 1.5~200um (Spec)

Technical Specifications

- Coating speed
 - 200mm/s (Max)
- Bar rotation speed
 - 200rpm (Max)
- Machine size
 - 600(L) x 540(W) x 450(H)
- Machine weight
 - 60kg
- Power requirement
 - Single-phase 220V 6A



NB-PMC-300 Plate Multi Coater



Specifications

Mask shim thickness

- 50~300micro

Coating width

- 450mm (Max) / 18 inch

Mounting

- 700mm (Max) / 28 inch

Technical Specifications

Coating type

- Slot-die, D-bar

Coating speed

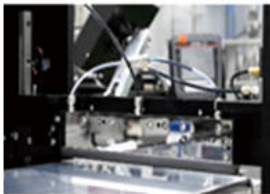
- 300mm/sec

Machine size

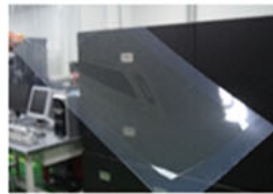
- 1640(L) x 1120(W) x 1145(H)

Machine weight

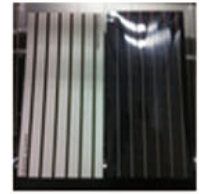
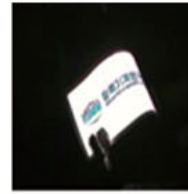
- 400kg



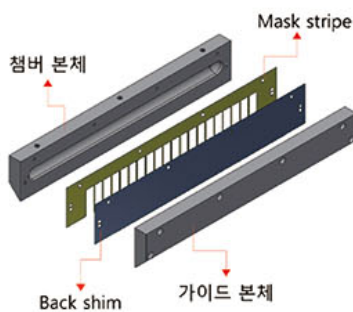
Slot-die coater



Coating sample



Application



Slot-die Head

Size - 368 x 40 x 60 (mm)

재질 - SUS 420j2

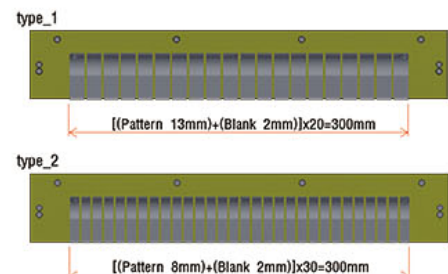
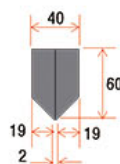
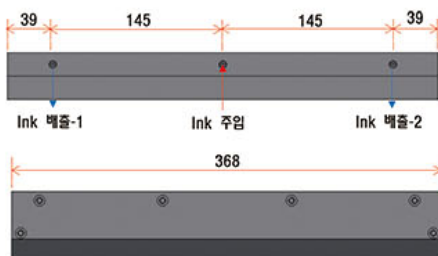
내부 저장 챔버 - 80cc

액 주입구 1EA / 배출구 2EA

마스크 : 2가지 타입 (SUS)

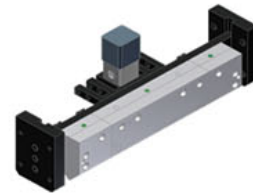
- type_1 : 0.05mm(스트라이프) / 13-2 + back shim

- type_2 : 0.05mm(스트라이프) / 8-2 + back shim

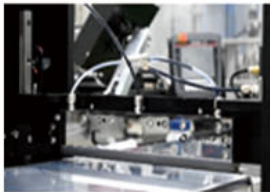
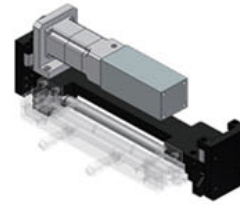




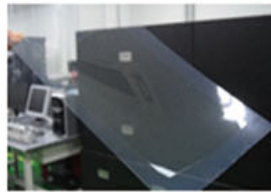
NB-PMC-200 Plate Multi Coater



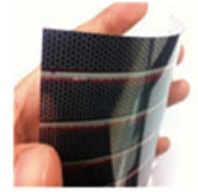
[슬롯다이 제작협의](#)



Slot-die coater



Coating sample



Application

Specifications

- Mask shim thickness
 - 50~300micro
- Slot-die width
 - 250
- Coating width
 - 200
- Mounting
 - Slot Type
- Slot-die
 - Stainless steel

Technical Specifications

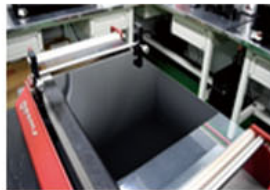
- Coating type
 - Slot-die, D-bar
- Coating speed
 - 200mm/sec
- Machine size
 - 655(L) x 475(W) x 455(H)
- Machine weight
 - 50kg
- Power requirement
 - Single-phase 220V 15A



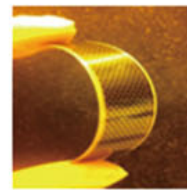
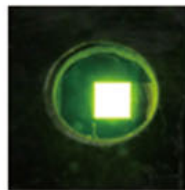
NB-PSC-300 Plate Stripe Coater / Float Coater



Slot-die coater



Coating sample



Application

Specifications

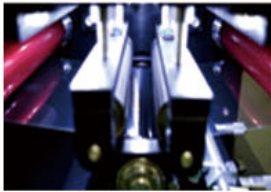
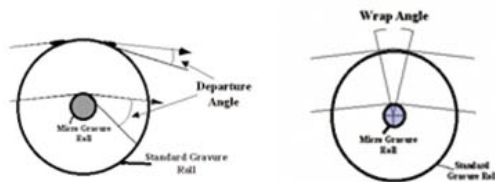
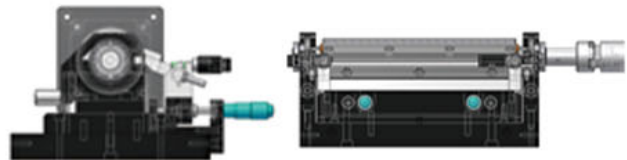
- Bar diameter
 - Ø12.7
- Bar length
 - 400mm
- Coating width
 - ~300mm
- Coating thickness
 - 1.5~200um (Spec)

Technical Specifications

- Coating Speed
 - Slot-die, D-bar
- Coating speed
 - 200mm/sec
- Machine size
 - 655(L) x 475(W) x 455(H)
- Machine weight
 - 50kg
- Power requirement
 - Single-phase 220V 15A



NB-RGC-150 Roll to roll Micro gravure Coater



Micro Gravure coater



Coating sample



Application

Specifications

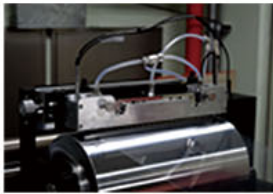
- Roll diameter
 - Ø30
- Roll length
 - 160
- Pattern form
 - Bar (Spec)
- Coating thickness
 - 1.5~200um (Spec)

Technical Specifications

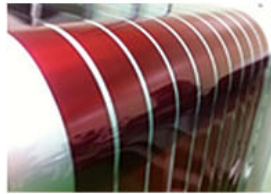
- Coating speed
 - 3m/min (Normal)
- Curing type
 - UV, thermal
- Dry length
 - 190mm
- Machine size
 - 426(L) x 630(W) x 460(H)
- Machine weight
 - 60kg
- Power requirement
 - Main : Single-phase 220V 6A
 - Dry : Single-phase 220V 2.5A



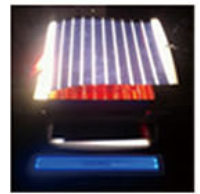
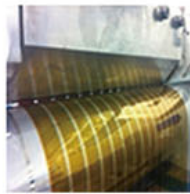
NB-RSC-300 Roll to roll Slot-die Coating



Slot-die coater



Coating sample



Application

Specifications

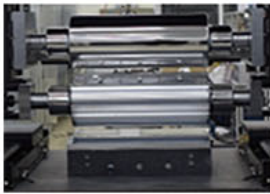
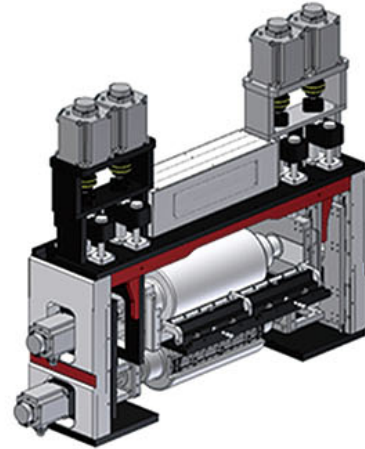
- Mask shim thickness
 - 50~300micro
- Slot-die width
 - 550mm (Max) / 22inch
- Coating width
 - 450mm (Max) / 18inch
- Mounting
 - 700mm (Max) / 28inch
- Slot-die
 - Stainless steel

Technical Specifications

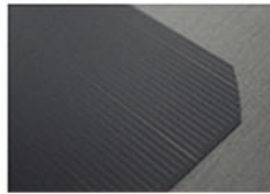
- Coating speed
 - 0.5m / sec (700mm/s)
- Dry length
 - 16m
- Machine size
 - 3900(L) x 1100(W) x 1850(H)
- Machine weight
 - 3000kg
- Power requirement
 - Main : Single-phase 20A
 - Dry : Three-phase 220V 40A



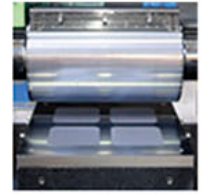
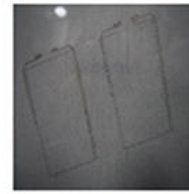
NB-RGP-500 Roll to plate Gravure off-set Printer



Gravure off-set printer



Printing sample



Application

Specifications

Pattern roll size

- Ø250 x 520

Printing size

- 500 x 500

Pattern width

- 20um

Pattern depth

- 10um

Technical Specifications

Printing speed

- 60sec / 1cycle

Printing force

- 50kg(L) + 50kg(R) = 100kg

Machine size

- 1200(L) x 1800(W) x 2400(H)

Machine weight

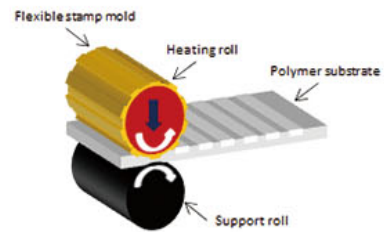
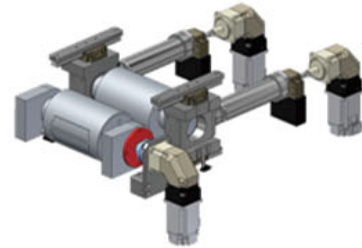
- 2000kg

Power requirement

- Three-phases 220V 40A



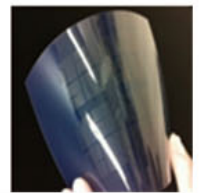
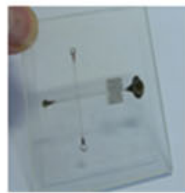
NB-RIP-200 Roll to roll Imprinter



Imprinter



Printing sample



Application

Specifications

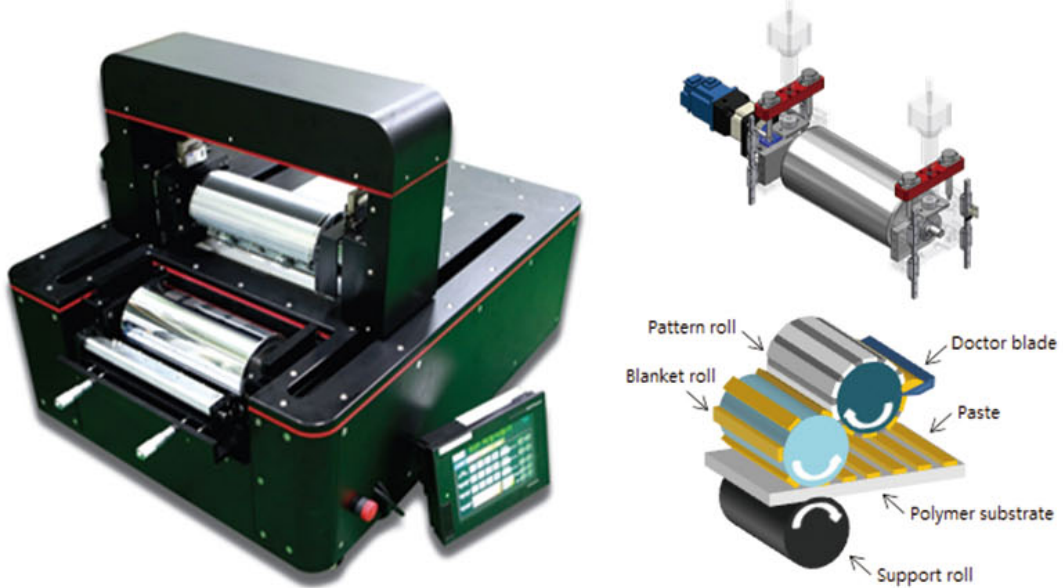
- Mask size
 - 110 x 360
- Pattern size
 - 100 x 150
- Pattern width
 - 15um
- Pattern depth
 - 10um
- Mask
 - Stainless steel

Technical Specifications

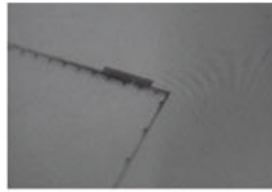
- Imprinting speed
 - 300mm / sec
- Heating Temp
 - ~200°C
- Imprinting force
 - 500kg(L) + 500kg(L) = 1000kg
- Machine size
 - 880(L) x 563(W) x 425(H)
- Power requirement
 - Main : Single-phase 220V 9A
 - Thermal roll : Single-phase 220V 7.5A



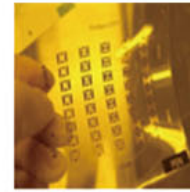
NB-RGP-200 Roll to plate Gravure off-set Printer



Gravure off-set printer



Printing sample



Application

Specifications

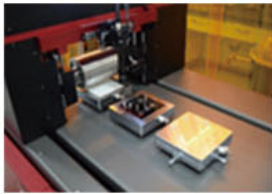
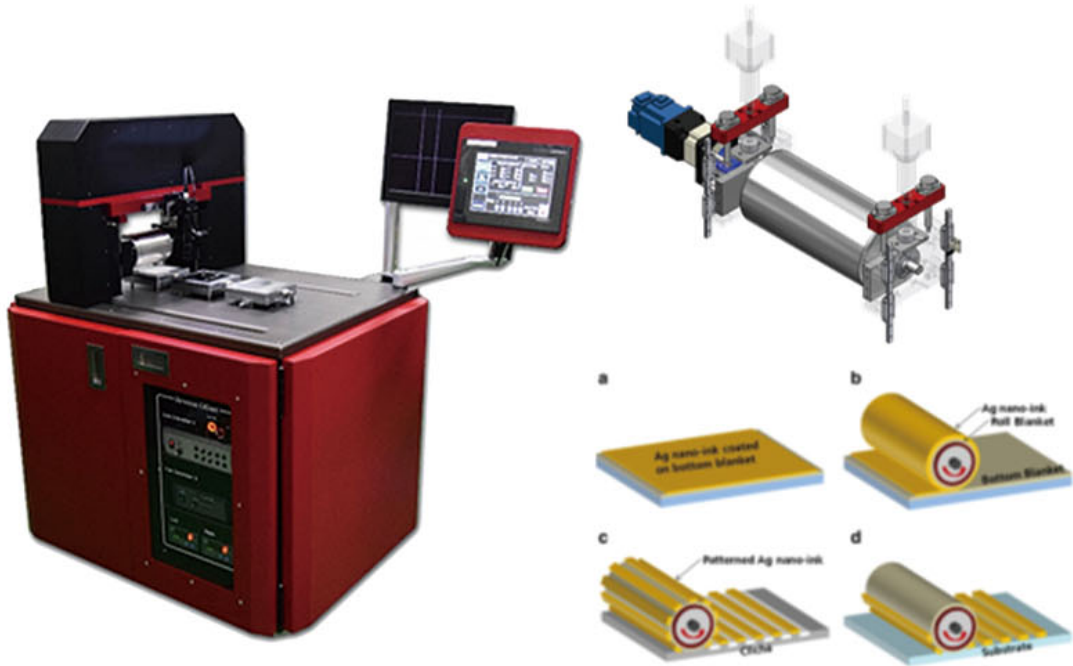
- Pattern roll size
 - Ø120 x 260
- Printing size
 - 200 x 200
- Pattern width
 - 20um
- Pattern depth
 - 10um

Technical Specifications

- Printing type
 - Gravure, Gravure off-set, Flexo
- Printing speed
 - 30sec / 1cycle (100mm/s)
- Printing force
 - 10kg(L) + 10kg(R) = 20kg
- Machine size
 - 870(L) x 680(W) x 770(H)
- Machine weight
 - 150kg
- Power requirement
 - Single-phase 220V 12A



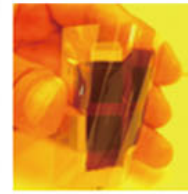
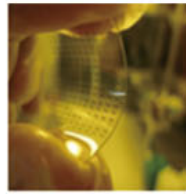
NB-RRP-100 Roll to plate Reverse off-set Printer



Gravure off-set printer



Printing sample



Application

Specifications

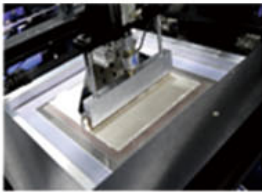
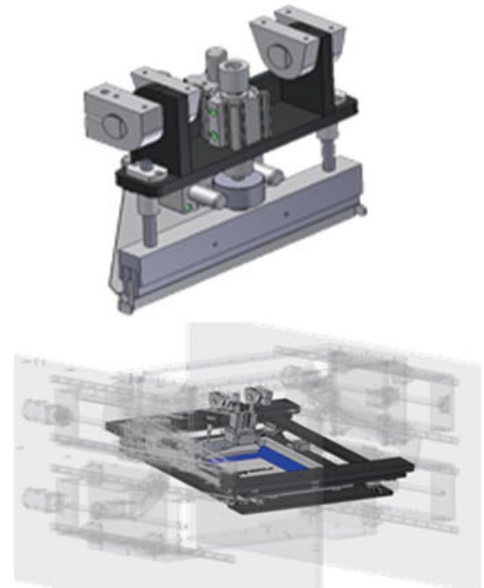
- Pattern roll size
 - Ø100 x 150
- Printing size
 - 100 x 100
- Pattern width
 - 30um (SUS)
- Pattern depth
 - 30um

Technical Specifications

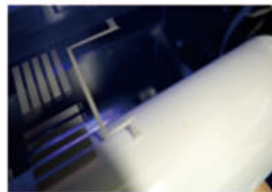
- Printing type
 - Reverse off-set, Off-set
- Printing speed
 - 60sec / 1cycle (50mm/s)
- Printing force
 - 50kg(L) + 50kg(R) = 100kg
- Machine size
 - 1000(L) x 800(W) x 1330(H)
- Machine weight
 - 300kg
- Power requirement
 - Single-phase 220V 12A



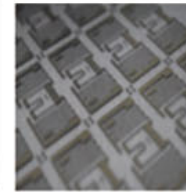
NB-RSP-300 Roll to roll Slot-die Coating / Gravure Printing



Screen printer



Printing sample



Application

Specifications

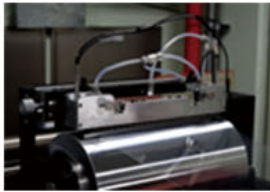
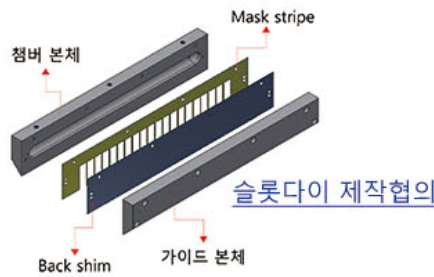
- Mask size
 - 600 x 600
- Printing size
 - 300 x 300

Technical Specifications

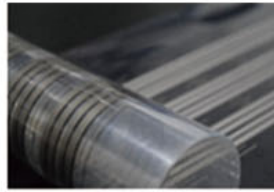
- Printing type
 - Continuous (R2R)
- Printing speed
 - 500mm / sec (Normal)
- Curing type
 - UV, thermal
- Dry length
 - 14m
- Machine size
 - 7850(L) x 1600(W) x 1920(H)
- Machine weight
 - 5000kg
- Power requirement
 - Three-phases 220V 60A



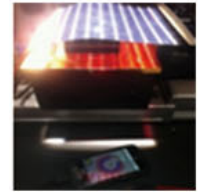
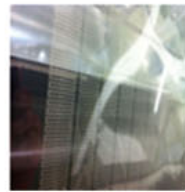
NB-RSH-300 Roll to roll Slot-die Coating / Gravure Printing



Slot-die coater



Coating sample



Application

Specifications

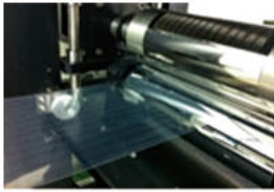
- Mask shim thickness
 - 50~300micro
- Slot-die width
 - 550mm (Max) / 22inch
- Coating width
 - 450mm (Max) / 18inch
- Pattern roll size
 - Ø100mm
- Printing size
 - Continuity
 - Width 200mm

Technical Specifications

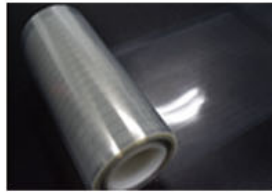
- Coating speed
 - 0.5m / sec (Normal)
- Dry length
 - 14m
- Printing speed
 - 0.5m / sec(Normal)
- Printing force
 - 50kg(L) + 50kg(R) = 100kg
- Machine size
 - 6000(L) x 1100(W) x 1400(H)
- Machine weight
 - 3000kg
- Power requirement
 - Main : Single-phase 220V 20A
 - Dry : Single-phase 220V 50A



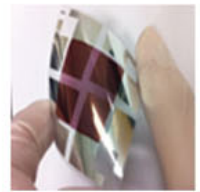
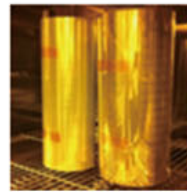
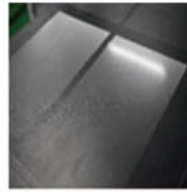
NB-RIP-300 Roll to roll Imprinting system



Imprinter



Printing sample



Application

Specifications

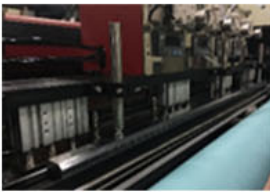
- Mask size
 - 280 x 550
- Pattern size
 - 280 x 400
- Pattern width
 - 15um
- Pattern depth
 - 10um
- Mask
 - Stainless steel

Technical Specifications

- Imprinting speed
 - 110mm / sec
- Heating Temp
 - ~200°C
- Imprinting force
 - 2ton(L) + 2ton(R) = 4ton
- Machine size
 - 3100(L) x 1250(W) x 1800(H)
- Machine weight
 - 3000kg
- Power requirement
 - Main : Single-phase 220V 40A
 - Thermal roll : Single-phase 220V 50A



NB-PBC-1200 Plate Bar Coater



Bar Coating Module



IR Dryer



Roll Conveyor



Cleaning Roll



Cooling Module

Specifications

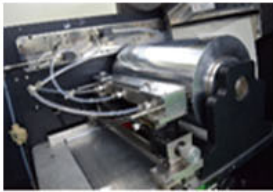
- Bar diameter
 - Ø4~Ø30
- Bar length
 - 1500mm
- Coating width
 - 1200mm
- Coating thickness
 - 1.5~200um (Spec)

Technical Specifications

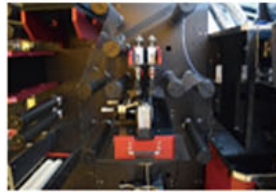
- Coating speed
 - 900mm/s (Max)
- Bar rotation speed
 - 900mm/s (Max)
- Machine size
 - 6000(L) x 3000(W) x 2,600(H)
- Machine weight
 - 1ton
- Power requirement
 - Main : Three-phase 220V 60A
 - Dry : Three-phase 440V 155A



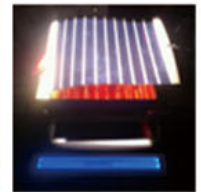
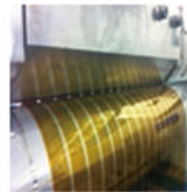
NB-RSC-300 Roll to roll Slot-die Coater



Slot-die Coating Module



Micro-Gravure Coating Module



Application

Specifications

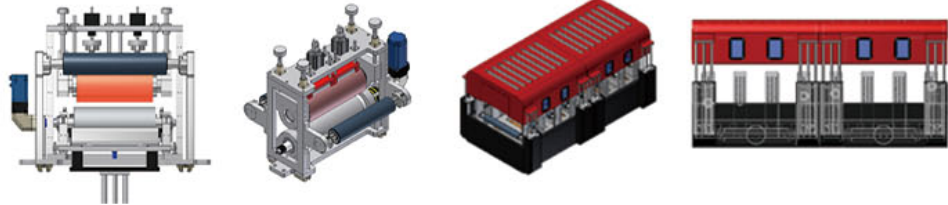
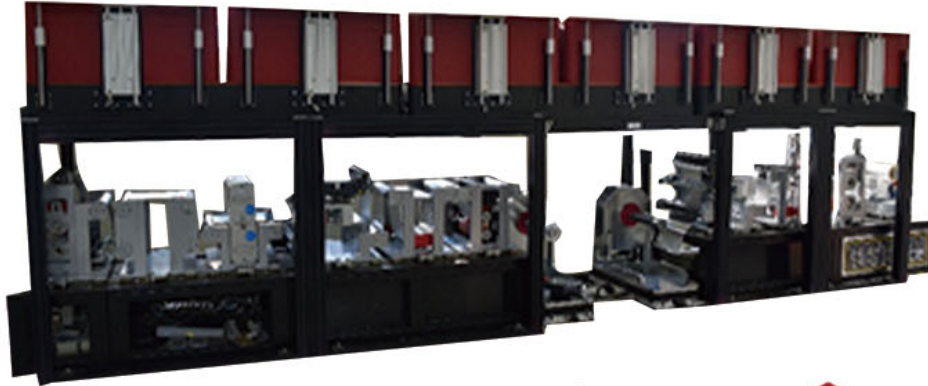
- Mask shim thickness
 - 50~300um
- Slot-die width
 - 550mm (Max) / 22inch
- Micro-gravure depth
 - 1.5~200cm³ / m²
- Coating width
 - 450mm (Max) / 18inch
- Mounting
 - 700mm (Max) / 28inch
- Slot-die
 - Stainless Steel

Technical Specifications

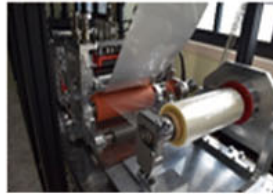
- Coating speed
 - 700mm/s (Max)
- Dry length
 - 16m
- Machine size
 - 3900(L) x 1100(W) x 1850(H)
- Machine weight
 - 3000kg
- Power requirement
 - Main : Single-phase 20A
 - Dry : three-phase 220V 40A



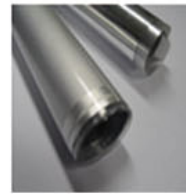
NB-RGC-300 Roll to roll Gravure Coater



Gravure Coating Module



Lamination Module



Application

Specifications

- Roll diameter
 - Ø120
- Roll length
 - 300mm
- Pattern form
 - Bar (Spec)
- Coating thickness
 - 1.5~200um (Spec)

Technical Specifications

- Coating speed
 - 250mm/s (Max)
- Curing type
 - UV, Thermal
- Dry length
 - 12m (Other sizes available upon request)
- Machine size
 - 6600(L) x 1300(W) x 2400(H)
- Machine weight
 - 1.5ton
- Power requirement
 - Main : Single-phase 220V 30A
 - Dry : Three-phase 220V 60A



NB-BJ-400, NB-BJ-1000 3D Binder jet Printer



Outlet



Special Pipe



Pipe Connector

NB-BJ-400 Specifications

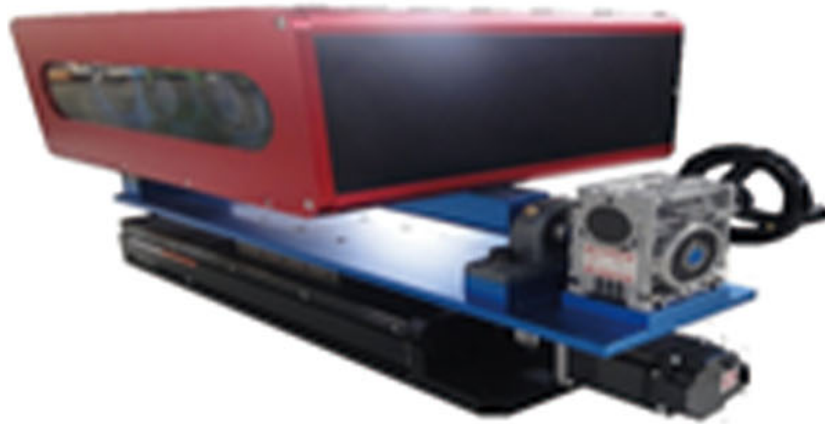
Build Volume (Max)
- 300 x 420 x 250mm
Layer Thickness
- 100~150um
Build Speed
- 3.5 Liter/h
Resolution
- 600 x 600 dpi

NB-BJ-1000 Specifications

Build Volume (Max)
- 1100 x 650 x 600
Layer Thickness
- 100~300um
Build Speed
- 15 Liter/h
Resolution
- Up to 400 dpi



NB-LTM Spectrum Measurement System



Analysis Program



Control Program

Specifications Pulsed Xenon Light Source

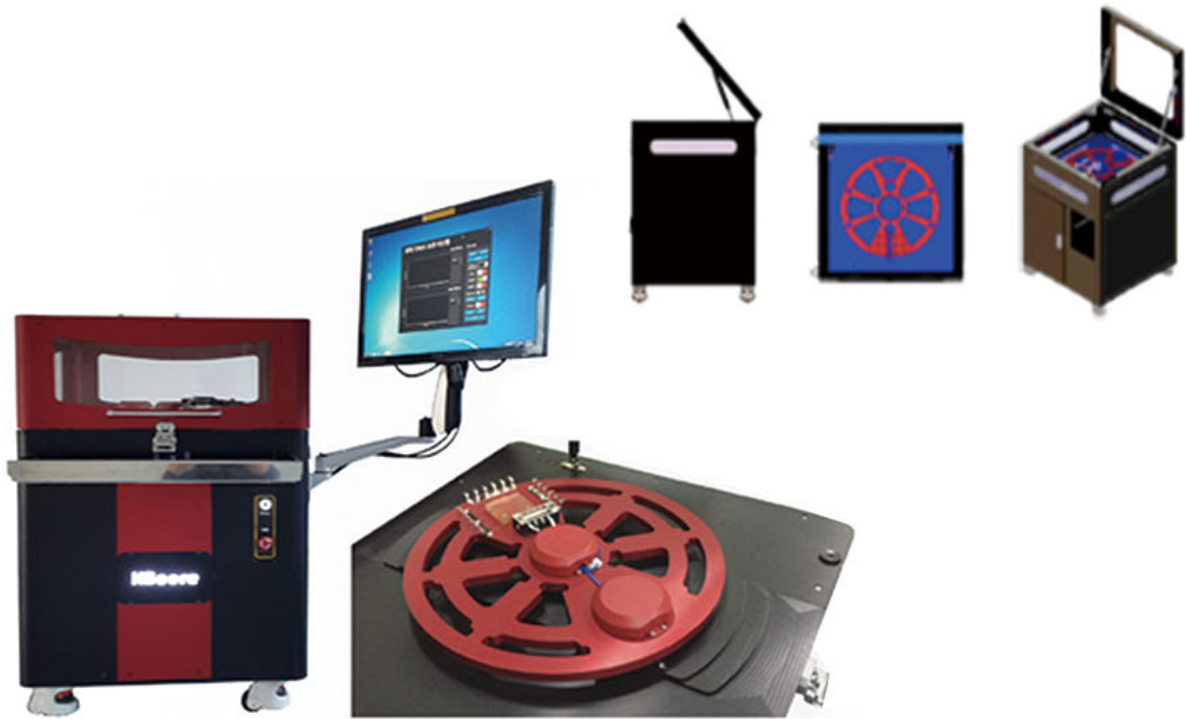
- Spectral Output : 200~1000nm
- Pluse Delay : 6 μ s
- Pulse Rate : 100Hz (Max)

Detector

- Optical Bench : ULS, symmetrical Czerny-Turner, 75 mm focal length
- Wavelength Range : 200~1160nm
- Detector : Back-thinned CCD image sensor 2048 pixels



NB-AGS Acceleration of gravity motion system



Specifications

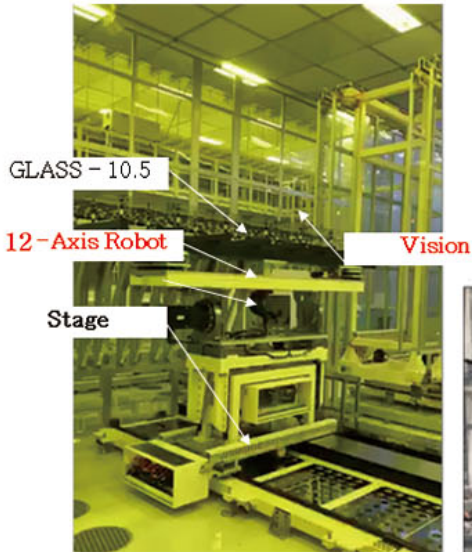
- KOLAS 인증 기기
- 국내 유일 KOLAS 인증
 - KSC5078 규격 제품
 - 블랙박스 및 가속도 기기 평가 시스템

Technical Specifications

- Gravity acceleration measurement
- within 1% error
- Allowable Weight
- 5kg (Max)
- Motor Speed
- -8g~+8g
- Driving Method
- Electric motor



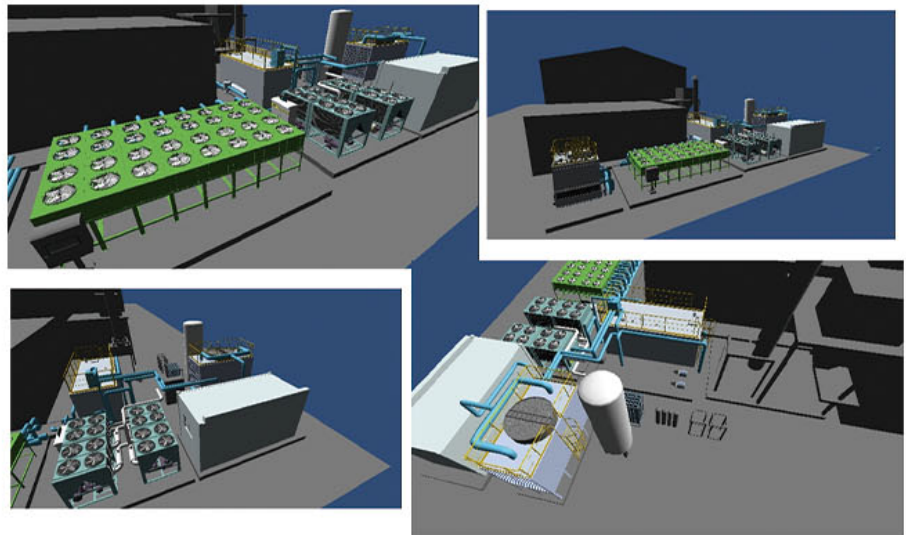
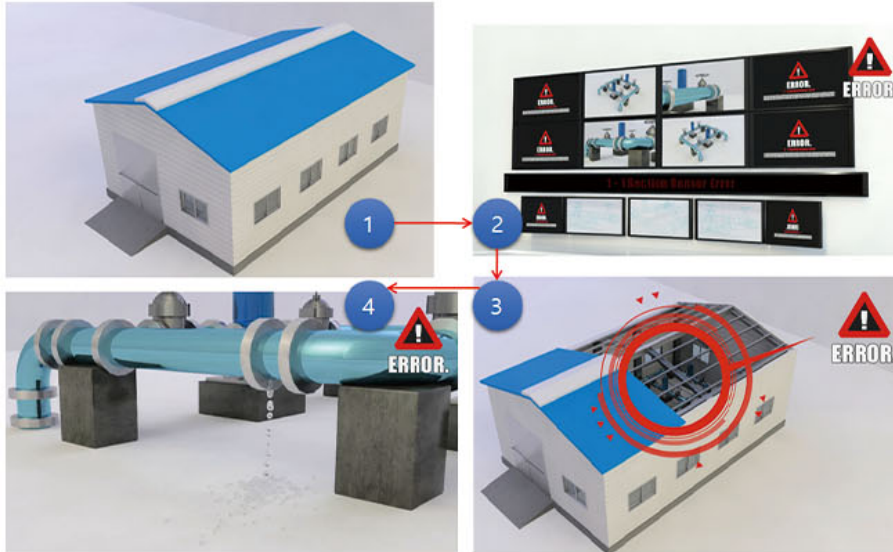
FLIPPER 12Axis Robot SPATA (LGD, SDP, CSOT)



- Characteristic
- 10.5세대 LCD GLASS 이송 로봇 장치
 - 양산 설비
 - GLASS Error Detection (Vision)
 - 자체 SW 기술 적용



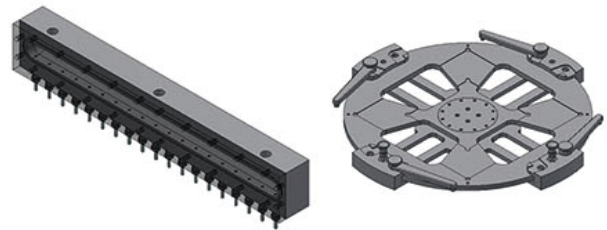
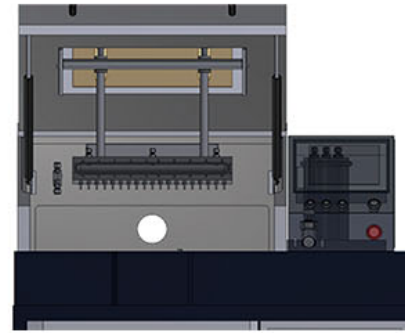
OTOS Visualizer (Ovis) 3D 3차원 생산 설비 제어 및 모니터링



Explanation | 생산 주요 설비 시스템 제어 및 모니터링
ISA-95 기반 생산 자동화 시스템 (One touch operation System)



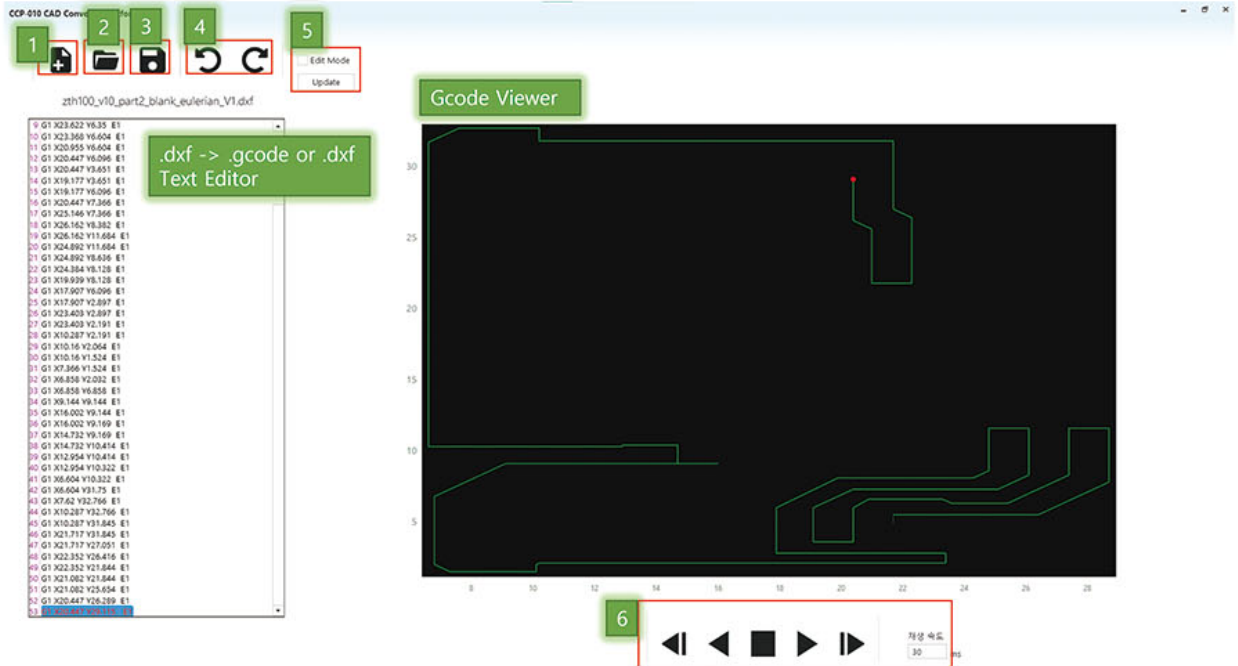
NB-RCQS-1000 Rotation Coating Quator System



Specifications	Substrate Gripper 1
	- 320 x 320
Specifications	Substrate Gripper 2
	- 170 x 170

Technical Specifications	Machine size (mm)
	- 1000(L) x 1350(H) x 800(W)
	Machine weight
	- 250kg
	Power requirement
	- Single-phase 220V 5A
	Dispenser
	- Chamber
Pneumatic	- 6 bar
	Servo motor
- PLC Control (750W)	

CCP-010 CAD Converter Platform

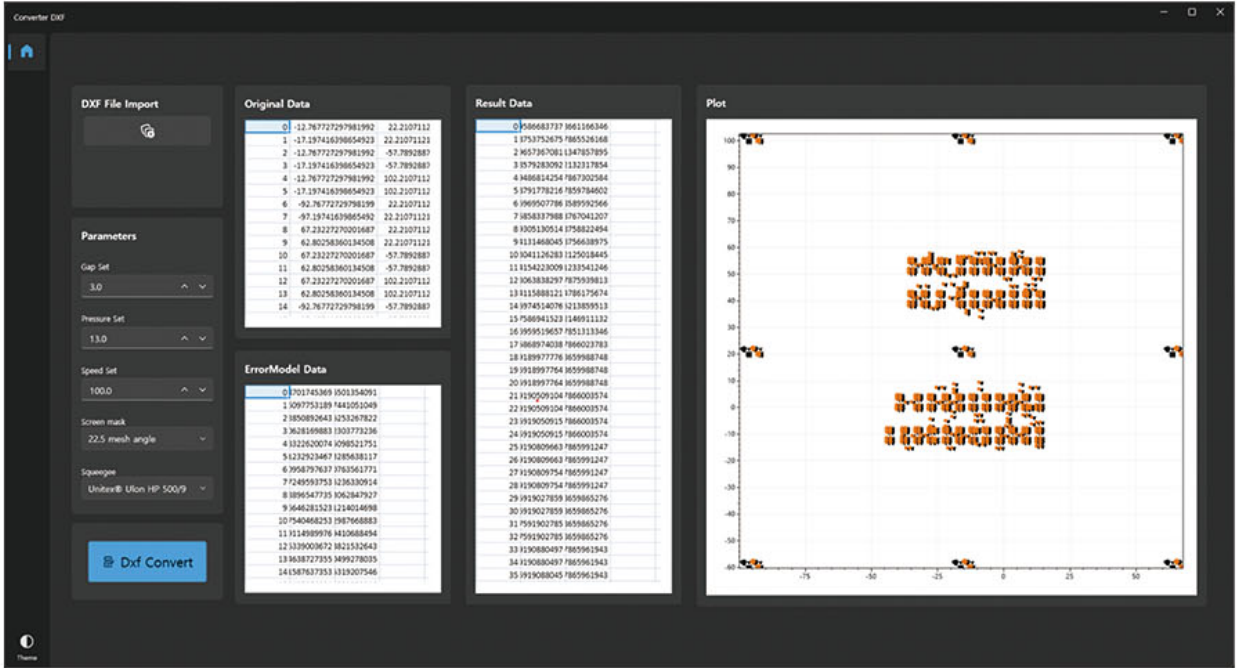


Explanation (ETRI dxf To gcode 생성 프로그램)

1. 새 파일
 - Click 시 Gcode Text Editor의 내용들이 모두 사라지게 되며 새로운 작업할 때 사용 가능
2. 불러오기
 - 선택된 .dxf 해당 파일을 Gcode로 변환하여 TextEditor에 변환된 Gcode를 출력
 - 선택된 .dxf 해당 파일을 CAD(.dxf)로 변환하여 TextEditor에 변환된 .dxf를 출력
3. 저장하기
 - 불러오기에서 출력된 결과를 .gcode 또는 CAD(.dxf) 파일로 저장 가능
4. 실행 취소 / 다시실행
 - 불러오기에서 출력된 결과(Gcode)를 .gcode 파일로 저장 가능
5. Edit Mode / Update Button
 - Edit Mode Check 시 TextEditor의 위치 값 내용들을 수정 가능
 - Update Button Click 시점의 TextEditor의 내용을 그래프에 갱신하여 보여줌
6. Points Play Control
 - ▶ - Editor의 내용을 한 줄씩 읽어가며 순차적으로 재생하는 기능
 - 경로는 파란색 선으로 나타나며 해당 위치는 빨간점으로 표현
 - 재생 속도로 한줄 씩 갱신되는 속도를 조절 가능
 - - Points Play 재생을 멈추는 기능
 - ▶ - Click 시 다음줄로 넘어가 해당 Point를 재생하는 기능



제판 CAD 보정 SW



Explanation

제판 CAD(dxf) 파일 레이아웃 위치 정보 값을 파라미터(Gap, Pressure, Speed)에 따라 인쇄 오차 보정하여 변환(AI Model)하여 제판 CAD 보정 파일 생성

.dxf 지원 레이아웃

- Point, Line, Polyline, Circle

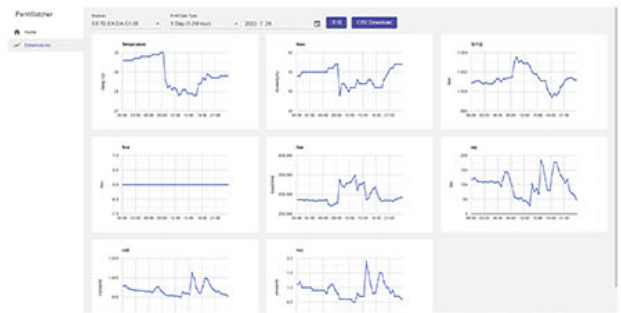
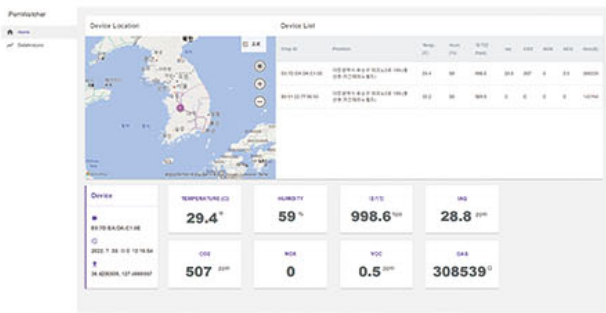
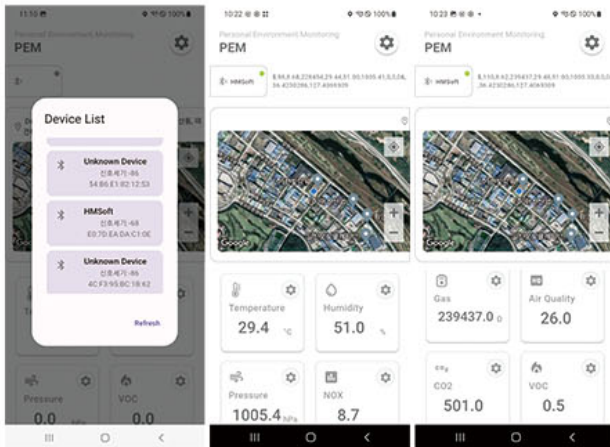
Screen Mask 종류

- SUS
- 325 mesh count (58 μm mesh, 14 μm emulsion thickness)
- 22.5 mesh angle

Squeegee 종류

- Unitex® Ulon HP 500/9
- D-cut with Land
- 300 mm width

센서 데이터 수집용 IoT 앱 SW



Explanation

IoT 센서 수집 종류

- 위치 정보(위도, 경도), 온도, 습도, 기압, NOx, Gas, Air Quality, co2, voc

IoT 센서 수집 스마트폰 OS

- Andorid

수집 데이터 처리(서버)

- MongoDB

서버에서 스마트폰으로 laq, voc, co2 결과가 수신되면 기본 로그 저장 폴더에 기록 수집 데이터를 확인 및 이력조회 가능한 웹페이지



NB-RSGC-300 Roll to roll Slot-die Gravure Coater



Specifications

적용 Web 폭 : 300~340mm (PET / Al web 적용가능)

Web 이송 속도 : 1,000mm/sec(Max) (공정과 무관한 속도)

장비 Size (mm) : 8,000(l) x 2,550(w) x 1,950(h) [건조길이: 6m]

설치 공간 (mm): 10,000(l) x 4,000(w) x 2500(h)

전기 용량 : 삼상 220v / 180A(CV케이블/50SQ)

공압 : bar 이상 (Ø8) / 질소 / 아르곤 / 산소

제어 방식 : PC 제어 (EtherCAT통신) / 이동형 Handy Touch 사용

장비 무게 : 5-Ton



NB-RSC-300 Roll to roll Slot-die Coater



Specifications

Size(mm) : 1200x1200x800

Weight (Kg) : 800

제어 방식 : PC 제어

공압 : 6bar 공급

전기 : 단상 220v 20A

배기 작업 미포함

Web : 폭 (max:100mm) / 재질(구리) / 적재무게(20Kg)

Web 이송속도 : max 100mm/s



일하는 사람을 중심으로 하는

반도체 장비 및 로봇틱스 기술 기반과 (AI, Vision, SI) 기술 기반으로
2차전지 및 롤투롤 인쇄 전자 장비 정문 회사입니다.

NBcore (주)엔비코어

Neoblast : 새로운 돌풍

Core : 핵심