EL AUTO IMAGE RECOGNITION SYSTEM

EL影像自动识别系统
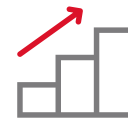
我们在检测什么？　What are we inspecting?

破 片
Broken Cell

虚 焊
Not Solder

黑 斑
Dark Spot

隐 裂
Crack

断 栅
Bus-bar Interrupt

混 档
Mix Cell Grade

短 路
Short Circuit
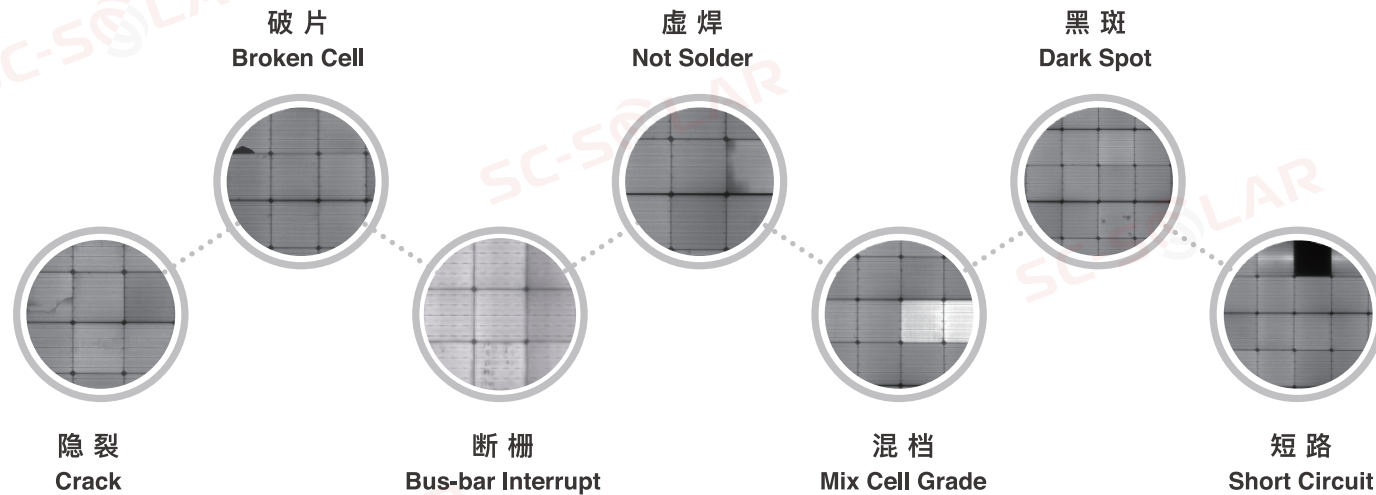
可以测试的组件类型　Compatible Cell Type

单晶全片
Mono Full Cell

单晶半片
Mono Half Cell

密 栅
Multi-Busbar (MBB)

多晶全片
Multi Full Cell

多晶半片
Multi Half Cell

外 观
Outlook Inspection

敬请期待！
To Be Continue

叠 瓦
Shingled
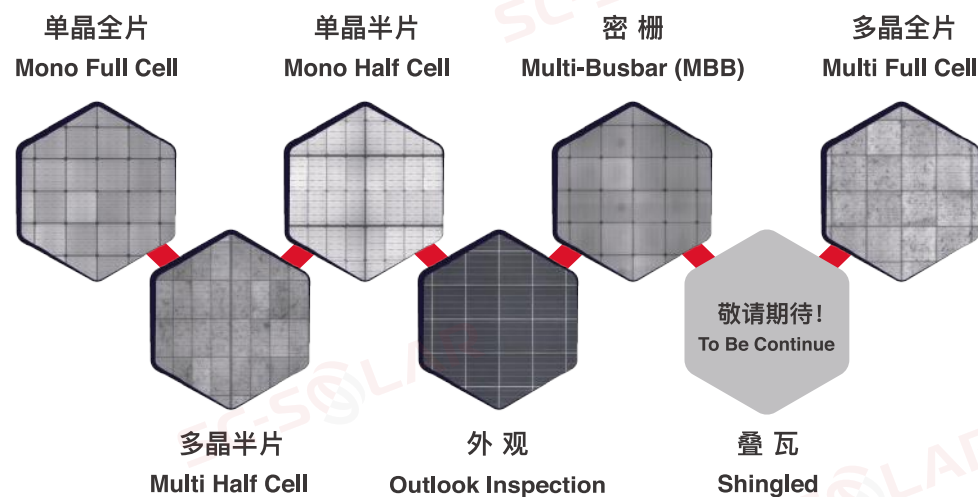
新产品快速爬坡　Fast Ramping Time for New Product

密栅、叠瓦、双面等产品焊接点检测
串EL自动判定快速定位异常发生点，缩减工艺窗口寻找周期

Multi-Busbar, Shingled, Bi-facial & ect. product welding point detection
Automatic detection of abnormal occurrence points by String EL function and reduction of searching period on monitor.

判定、返修人力精简　Lean on Manpower for Manual Detection & Rework

串EL自动判定可将缺陷串卡控在串返修处
减少了组件返修的数量和难度，精简了组件返修人力

With string EL AI, defective strings can be repaired beforehand and therefore reduces workload at the panel repair station.

电池片损失降低　Reduce Loss of Cell

串EL自动判定引入避免焊机至层前EL过程中的WIP批量不良，从而有效降低因焊机批量不良导致的破片率

Automatic String EL Detection can avoid massive defect WIP occurrences from Stringer to Pre-Lamination EL, it can prevent massive detect string produced by stringer.

质量良率提升　Improve Quality Yield

前后道组件EL自动判定统一质量标准，避免人员因疲劳操作导致的漏检，从而消除前道EL漏检提升良率

With standardized of detection protocol, Pre & Post Lamination module EL automatic detection can reduced human dependent factor which cause miss detection due to fatigue for long operation can improve yield.

产线快速切换　Fast Change-over Time

小量多样的市场需求愈发明显，通过智能判定快速定位并解决异常，帮助客户不再为虚焊隐裂而担忧

Multiple type product market demand is becoming more and more obvious, the core role of rapid positioning and intelligent judgment in solving abnormal situations is to help customers stop worrying about hidden cracks in virtual welding.

Time Resource
Defect Resource
Manpower Resource

常规线
Regular Line

AI 整合
AI Detection Line
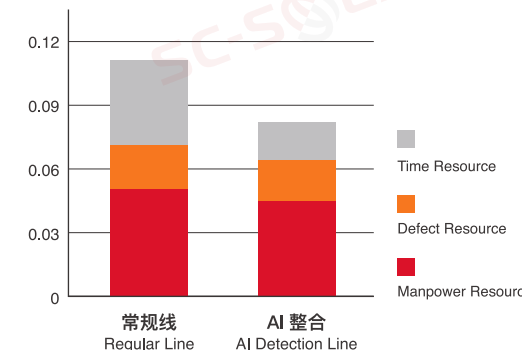
A 公司密栅产品引入智能判定前后对比
Comparisons of AI Detection before and after of Multi-Busbar

单线生产指标　Single Line KPI	原模式 Original	智能判定 AI Detection
组件日产量（块）　Daily Module Output (piece)	1800	2330
满产达成时间（天）　Reach Full Product Capacity (day)	5	2
组件返修率（%）　Module Rework Rate (%)	18.2	5.7
组件返修人力（人）　Module Rework Manpower (pax)	12	4
串返修率（%）　String Rework Rate (%)	4.3	3.8
串返修人力（人）　String Rework Manpower (pax)	5	5
破片率／工损率（%）　Defect Rate (%)	0.32	0.28
串焊机日均故障时间(h)　Stringer Daily Downtime (h)	1.87	1.15
焊接不良成品降级率（%）　String Down Grade Rate (%)	0.15	0.05
年创造收益（万元）　Annual revenue generation (10K RMB)		354