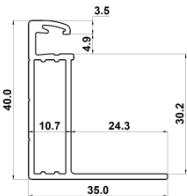
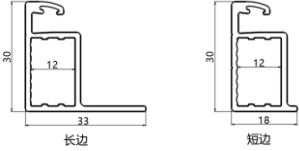
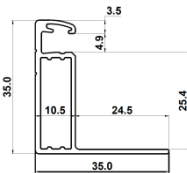
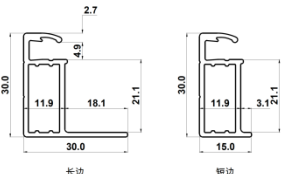


工程更改通知书 (ECN)

工程变更名称: B 面高度变更 Engineering change name: B-side height change	ECN 编号: 2019120911 ECN No.: 2019120911
申请部门/单位: 晶科能源组件技术开发管理部 Department of Application: Jinko Solar module Technology Development Management Department	发出日期: 2019 年 12 月 09 日 Date of Issue: 9th December 2019
工程变更类型: 组件产品设计变更 Engineering Changing Type: Design changing of Module Product	
<p>更改原因及方案: Reason for change and plan:</p> <p>工厂内部设计调整, 将型材边框高度从 40mm 和 35mm 降低为 30mm, 加强现有边框壁厚及优化设计, 保持原有组件机械强度并覆盖现所有安装方式, 兼容市场常规支架; 新边框设计组件已在厂内实验室通过 IEC 新标-5400/2400Pa 静载及 IEC 动载测试验证。</p> <p>30mm 高度边框组件各测试条件下满足 IEC 及特殊安装标准要求; 在各安装测试条件下表现与现用 40 和 35 边框趋于一致, 未见明显降低; 个别安装情况下表现甚至优于现有边框</p> <p>Adjust the internal design from the factory, that reduce the profile frame height from 40mm&35mm to 30mm, strengthen the existing frame wall thickness and optimize the design, maintain the mechanical strength of the module and cover all existing installation methods, compatible with the market's conventional mounting; the new frame design of module already has passed the new IEC-5400 / 2400Pa static load and IEC dynamic load test verification in the internal laboratory of factory.</p> <p>The 30mm height frame of module meets the requirements of IEC and special installation standards under each test condition; under each installation and test condition, the performance tends to be consistent with the current use of 40 and 35 frame, and there is no significant reduction; And the performance of individual installation conditions even better than that of the existing frame.</p>	
<p>此次变更的要点如下: The key points of this change are as follows:</p> <ol style="list-style-type: none"> 1. 型材边框高度从 40mm 及 35mm 降低为 30mm, 同步对壁厚及设计进行加强; 2. 提高单托盘功率 13%~29%, 有效提升集装箱(货车)装载效率, 降低全段运输成本; 3. 组件重量降低, 提高操作轻便性, 同时也为客户降低终端运输成本; 4. 组件截面变化: <ol style="list-style-type: none"> 1. The profile frame height is reduced from 40mm and 35mm to 30mm, and the wall thickness and design are strengthened simultaneously; 2. Increase the power of single pallet by 13% ~ 29%, effectively improve the loading efficiency of containers (trucks), and reduce the transportation cost of the whole section; 3. Reduce the weight of the modules, improve the portability of the operation, and also reduce the back-end transportation cost for customers; 4. Module cross-section changes: 	

组件版型 Module type	现用边框截面 Current frame cross-section	差异 Difference	优化边框截面 Frame cross-section after changing
72P		B 面高度从 40mm 变更为 30mm B-side height changed from 40mm to 30mm	
		C 面长边与短边长度分别为 32 & 18mm C-side long and short side lengths are 32 & 18mm respectively	
		边框型腔设计增大 50%，提升边框设计强度 50% increase in frame cavity design, enhance the strength of frame design	
		B 面高度虽然降低，但边框各壁厚均为设计加强 (B/C 面壁厚提升约 20%) Although the height of the B surface is reduced, the wall thickness of the frame is designed to strengthen (the wall thickness of the B / C surface is increased by about 20%)	
60P		B 面高度从 35 变更为 30 B-side height changed from 35 to 30	
		C 面长边与短边长度分别为 30 & 15mm C-side long and short sides are 30 & 15mm in length	
		改善 A 面溢胶结构，增加 B 面腔体宽度，提升边框设计强度 Improve the glue overflow structure on the A side, increase the width of the cavity on the B side, and increase the strength of the frame design	
		B 面高度虽然降低，但边框各壁厚均为设计加强 (B/C 面壁厚提升 22%) Although the height of the B surface is reduced, the wall thickness of the frame is designed to strengthen (the wall thickness of the B / C surface is increased by 22%)	

切换计划:

工厂从 2019 年 2 月 1 日开始逐步在订单中进行切换，望得到客户的支持。

Switch plan:

The factory will gradually switch in the order from February 1, 2019, and hope to get the support from customer.

更改生效时间: 2019 年 12 月 09 日

Availability date: 9th December 2019