AGC艾杰旭特种玻璃(大连)有限公司
AGC Flat Glass (Dalian) Inc.

地址／ADD：大连市金州新区铁山西路5号
No.5 TieShanXi Road Development Zone Dalian, P.R.China
邮编／ZIP CODE：116600
电话／TEL：+86 411 87614190－113
传真／FAX：+86 411 87614197
邮箱／E－MAIL：Inquirydalian@agc.com
网址／WEB：www.agc-flatglass.cn

太阳能超白浮法玻璃

光热发电 至佳选择

AGC SOLAR EXTRA CLEAR FLOAT GLASS
YOUR PREMIUM CHOICE FOR CSP APPLICATIONS

"Look Beyond"

艾杰旭特种玻璃（大连）有限公司 是AGC集团的全资子公司。
本资料仅作为产品的一般介绍描述以供参考，最终性能参数请以本公司正式文件为准。
本资料如有修改更新，恕不另行通知。
更多详细信息请登录本公司网站或致电咨询。

AGC FLAT GLASS (DALIAN) INC. IS A WHOLLY OWNED SUBSIDIARY COMPANY OF AGC GROUP.
THE INFORMATION ABOVE IS ONLY A GENERAL DESCRIPTION OF THE PRODUCTS FOR REFERENCE.
THE ACTUAL DATA IS SUBJECT TO OUR FINAL CONFIRMATION IN OFFICIAL DOCUMENTS.
THE INFORMATION MAY BE UPDATED WITHOUT PRIOR NOTICE.
FOR MORE INFORMATION, PLEASE VISIT OUR WEBSITE OR CONTACT US.

版本：2019.4.10

AGC集团艾杰旭特种玻璃(大连)有限公司太阳能超白浮法玻璃

采用世界尖端浮法玻璃技术制造，并针对太阳能光热发电应用领域做了特别的工艺优化，将高效的光能透过、易加工性、优异的耐久性和极低的自爆率完美地结合在一起，是一款应用于太阳能发电的理想产品。

AGC Flat Glass (Dalian) Inc. Solar Extra Clear Float Glass

is manufactured by cutting-edge float glass technology of the world, specially optimized for solar applications in CSP. With high light & energy transmission,excellent durability, easy-processing performance and extremely low spontaneous breakage ratio perfectly combined, it is an ideal product aiming for solar application.

AGC 产品优势 PRODUCT BENEFITS

▶ 极高的太阳光透过率
High Solar Transmittance

特殊设计的玻璃窑炉和工艺控制使太阳光全光谱透过率在普通低铁超白浮法玻璃的基础上进一步提高了1.5%，显著提高CSP的光热转换效率和PV的光电转化效率 。

Thanks to the specially-designed furnace and processing control, the solar transmittance is 1.5% higher than normal low iron glass, which significantly improves the solar energy conversion efficiency of CSP and PV.

▶ 极易加工以获得平滑的光学表面
Easy processing to obtain the optical flat surface of mirror

最佳的浮法玻璃生产线及工艺设备，生产出易弯曲和热强化/钢化的玻璃产品，以获得制镜后平滑的光学表面，为高反射率和高面型精度提供保障。

The superb float glass line and well equipped-facilities contribute to produce the fabricated glass with easy curving and heat strengthened/tempered property. It finally ensures the optical flat surface of mirror and realize the higher reflectivity and concentrating accuracy.

▶ 极佳的耐久性，极强的抗风化能力
Excellent Durability and Weatherability

优化的原料配方和熔制工艺，大幅提升了玻璃的抗风化能力，保证了极好的耐久性，使CSP反射镜及光伏电池板在大温差、多风砂、多雨雪等恶劣气候环境下稳定运行，显著延长设备的使用寿命。

Optimized raw material formula and melting process highly improves the weatherability and ensures the outstanding durability of the glass, which supports CSP mirror and PV module to keep stable operation under rainy, snowy, windy and sandy weather conditions as well as large temperature difference, and thus extends the operation life of the power station significantly.

▶ 极低的自爆率
Extremely Low Spontaneous Breakage Ratio

精细的原料控制，使硫化镍及其他杂质的含量大大降低，将自爆率降到极限，达到世界一流控制水平。

Refined control of raw materials, greatly reduces the content of NiS and other impurities, which contributes to very low spontaneous breakage ratio, achieving the world first-class level .

主要参数 Main Performance

厚度（毫米）THICKNESS	透过率% TRANSMITTANCE %		
	可见光 TL (380-780nm)	全光谱 TE (300-2500nm)	全光谱TE批次平均值 (300-2500nm)
2.0	≥91.6	≥91.2	≥91.4
3.0	≥91.6	≥90.9	≥91.1
4.0	≥91.5	≥90.8	≥91.0

可提供厚度：1.8mm、2.0mm、2.5mm、3.0mm、3.2mm、4.0mm、5.0mm

* 可根据需要提供非标准厚度、定制尺寸及透过率更高的产品。详细信息请联系我们

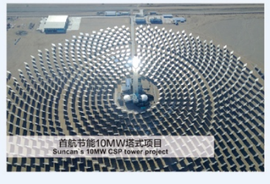
  We can supply products with non-standard thickness, customized size and higher TL/TE

* 批次平均值是指订单量超过1500tons时性能参数的平均值。Batch average value refers to the average performance value under the condition that the order quantity exceeds 1500 tons.

AGC 应用领域 APPLICATIONS

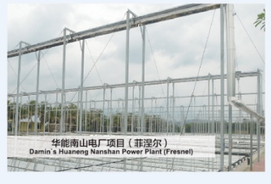
太阳能光热发电: 反射镜基板 Solar CSP: Substrate for Mirror

可制成平面镜（线性菲涅尔、塔式光热发电）和曲面镜（槽式、碟式光热发电） Flat Mirror(CLFR, Tower) and Curved Mirror(Parabolic Trough, Dish)

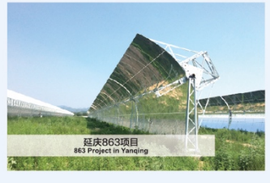


塔式太阳能光热发电
Tower Concentrating Solar Power

线性菲涅尔式太阳能光热发电
CLFR Concentrating Solar Power



线性菲涅尔式太阳能光热发电
CLFR Concentrating Solar Power

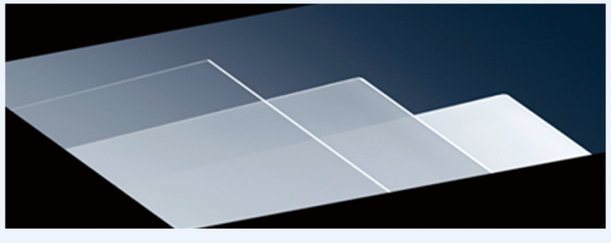


槽式太阳能光热发电
Parabolic Trough Concentrating Solar Power

截止目前，全球已完成的 CSP 项目装机容量约 6.07GW，使用 AGC 太阳能超白玻璃的聚光反射镜至少占65%。

In the completed CSP projects of 6.07 GW till now,CSP mirrors using AGC Solar extra clear glass accounts for more than 65%.

太阳能光伏发电: TCO玻璃基板 Solar PV: TCO Substrate



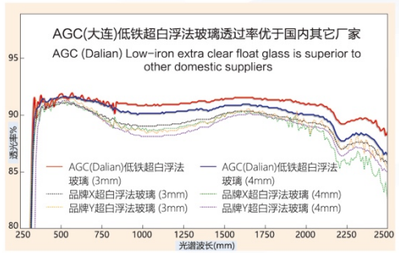
太阳能光伏发电: 电池板盖板 Solar PV: Cover Glass for PV

其中 AGC 大连在目前已建、在建和已接的国内外光热项目订单总量已超过 890MW ！

AGC Dalian has received more than 890MW orders in the completed,ongoing and new projects from domestic and overseas solar market by now!

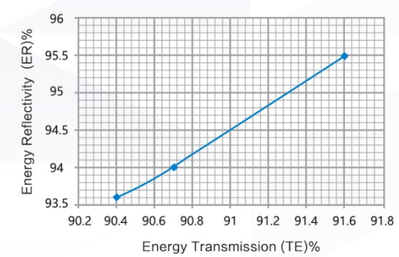
AGC 低铁超白浮法玻璃 高透过率 额外经济效益

AGC LOW IRON EXTRA CLEAR FLOAT GLASS HIGHER TRANSMITTANCE ADDITIONAL BENEFIT



生产商	厚度mm	颜色	测试方法ISO 9050:2003 可见光TL	测试方法ISO 9050:2003 全光谱TE
AGC大连	**3.0**	**超白**	**91.69%**	**91.29%**
国内厂家B	3.0	超白	91.37%	90.11%
国内厂家C	3.0	超白	91.33%	90.72%
国内厂家D	3.0	超白	90.88%	89.74%

生产商	厚度mm	颜色	测试方法ISO 9050:2003 可见光TL	测试方法ISO 9050:2003 全光谱TE
AGC大连	**4.0**	**超白**	**91.61%**	**91.19%**
国内厂家①	4.0	超白	91.23%	89.64%
国内厂家②	4.0	超白	91.05%	89.91%
国内厂家③	4.0	超白	91.09%	89.19%



以50MW的槽式光热电站为例，超白玻璃全光谱透过率每额外提升1%，CSP反射镜的热量反射率可提升1%~1.5%，这意味着该槽式光热发电站在其25年的寿命当中，可产生约7,200万的额外经济效益。

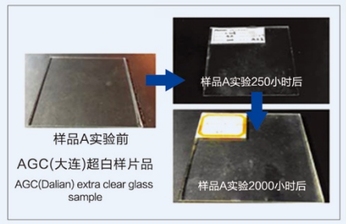
50 MW x 1000 (MW转换成KW) x 5000 hr/yr x 0.01(1%) x 1.15 RMB/kWh(上网电价FiT) x 25 years ≈ 72,000,000 RMB

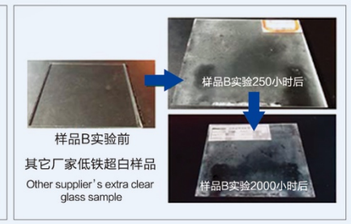
上述计算，以假定每年5000小时，上网电价1.15元/KWh的前提条件下，且不考虑设备运转，传热储热介质的选择等因素

It is estimated that 1%~1.5% additional reflectivity from mirrors of a 50MW CSP Parabolic plant generates an additional 72Mil in profit at least over its 25 years lifetime .

Ref. Assuming that the above-mentioned calculation is on the condition of 5000 hours per year and RMB1.15/kWh (FiT) while not considering the factors such as equipment operation, the selection of heat storage medium etc.

高温高湿耐久试验对比 Damp Heat Test





超白玻璃随着户外使用时间增加以及环境因素破坏，透过率会发生衰减，反射镜的反射率会降低，进而严重影响集热效率

With exposed to outside for a long time and influenced by outside environment, the transmittance of extra clear glass sharply decreased while the reflectivity of mirror also reduced , thus seriously affected the heat concentrating efficiency.

* 本研究结果来自AGC（大连）合作伙伴浙江大明

高温高湿透过率试验对比

Transmittance Variation after Damp Heat Test