

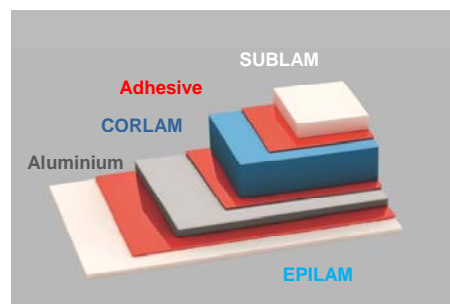
AKALIGHT HBF 185

General

AKALIGHT HBF 185 is a **white colored** UV-stable and hydrolytic resistant multilayer insulating material. It has been developed for the specific application as a backsheet of a Photovoltaic Module which minimum requirements are described in the International Standard IEC 61730-1.

Electrical, mechanical and optical properties of **AKALIGHT HBF 185** remain at high level when exposed to UV radiation or to rough combined temperature/humidity conditions (e.g. 2000 h, 85%rh, 85°C).

The new product line **AKALIGHT HBF** is designed to exceed the requirements for different applications of PV systems. Therefore **AKALIGHT HBF** incorporates three basic layers with different functional importance. **CORLAM** is carrying mainly the electrical and mechanical properties of the structure. **EPILAM** on the outside and **SUBLAM** on the cell side are both providing high bonding either to the encapsulant or to the polymers used as pottings, sealants or adhesives. The design of both protective top layers responds to an evaluation of particular conditions. The barrier layer between EPILAM and CORLAM is performed with Aluminium foil and guarantees the very low water vapour permeability. The laminate meets the particular requirements of thin film technology (TF) and organic photovoltaic modules (OPV).



All tests including accelerating tests are performed on plane back sheet.

Required properties in accordance to IEC 61730-1

Property	Unit	Test method	Results	Testing laboratory
Max. system voltage (tested in air)	V _{DC}	IEC 60664-1	1013	VDE, Offenbach
- after conditioning 2000h 85°C/85%rh * 3)	V _{DC}	IEC 60664-1	dpd	VDE, Offenbach
UV resistance	-	EN 4892-3	Passed ¹⁾	KREMPEL
Flame spread index	-	ASTM E 162-09	dpd	
Relative Thermal Index (RTI)	°C	IEC 60216-5	≥ 105 ²⁾	UL

1) 2000h UV exposure with 0.68 W/m²; 340 nm; 60°C; 500 min. wetting; 1000h condensation. Total exposure time 3000h. Tested on both sides.

2) Generic thermal index according UL 746B table 7.1 3) not required in IEC 61730-1

Additional properties

Property	Unit	Test method	Typical values
Thickness	mm	EN 60674-2	0.33
Area weight	g/m ²	EN 60674-2	440
Water vapour permeability 38°C/90%rh	g/m ² · d	ISO 15106-3	cir. 0.0005
Dimensional stability, MD + TD (30 min. / 150 °C)	%	EN 60674-2	≤ 0.05
Reflection of visible light (380 – 780nm) ⁵⁾	%	EN 410	86
Reflection of radiation (280 – 2500nm) ⁵⁾	%	EN 410	71

5) Tested at Primer side = cell side; direct solar radiation. . Test equipment: Perkin Elmer Lambda 900 (Ulbrichtkugel)



AKALIGHT HBF 185 belongs to product family **AKALIGHT** which has **UL** recognition under File No. **QIHE2.E351723**.