






# HV 450 TIMBER-ALUMINIUM-COMPOSITE WINDOW





## CHARACTERISTICS

 **Thermal insulation** (in W/m<sup>2</sup>K)  
U<sub>w</sub> up to 0,62

 **Sound reduction** (in dB)  
up to 39-46

 **Security**  
up to RC1N, RC2

 **Locking**  
fully concealed

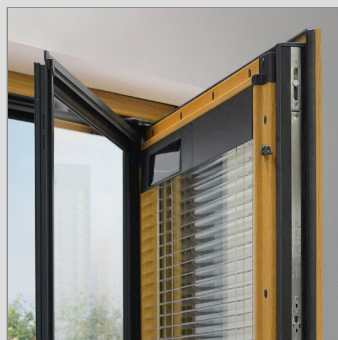
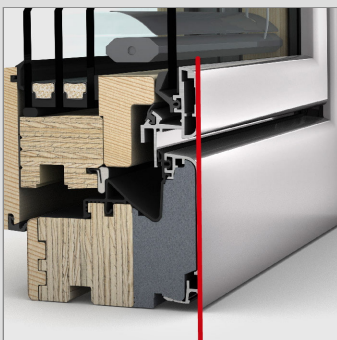
 **Installation Depth** (in mm)  
85

**I-tec Core**

**I-tec Shading**

**I-tec Glazing**

**I-tec Connect**

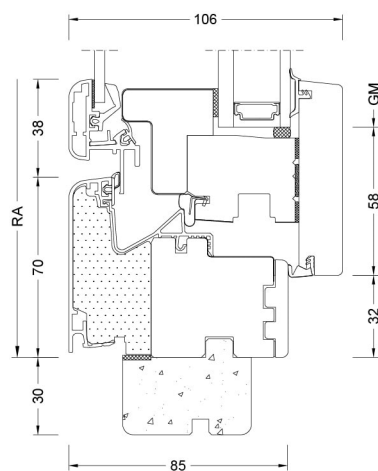


The flush transition from frame to sash and the integrated sun protection between the panes unite the HV 450 into a single unit. Venetian, Roman or black-out Duette® blinds are integrated between accessible panes, and are protected from the weather and dirt. With perfect sun, privacy, thermal and sound protection, you can enjoy quadruple protection in just one window. I-tec Shading with photovoltaic module and battery is completely energy self-sufficient and also offers many useful functions.

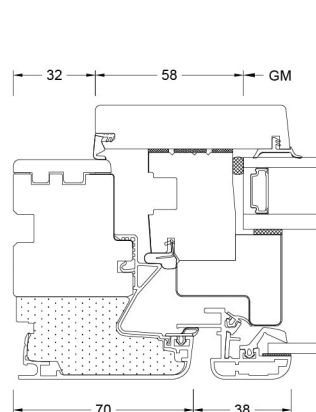


## Cuts

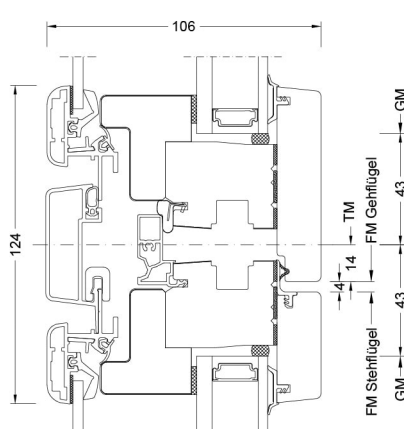
Senkrecht / Vertical



Waagrecht / Horizontal



Stulp / Flying mullion



BM Bestellmaß / Ordering size  
 FM G Flügelmaß Gehflügel / Sash size master sash  
 FM S Flügelmaß Stehflügel / Sash size slave sash  
 FOK Fußbodenoberkante / Finished floor level

GM Glasmaß / Glass size  
 RA Rahmenaußenmaß / Outside frame size  
 TM Teilungsmaß / Division size

## Values

Glass Build Up	GC	Coating	AH	U <sub>g</sub>	g	U <sub>f</sub>	Psi	U <sub>w</sub>	R <sub>w</sub>	C	Ctr	Certificate - Thermal Performance	Certificate - Sound
4 // 6/18Ar/b4	100/2KU	ECLAZ®	Iso Alu	1,1 1,1	69 69	0,94 0,94	0,024 0,039	0,97 1	40 40	-2 -2	-7 -7	× ×	× ×
6 // 6/18Ar/b4	111/2KU	ECLAZ®	Iso Alu	1,1 1,1	69 69	0,94 0,94	0,024 0,039	0,97 1	43 43	-2 -2	-7 -7	✓ ✓	✓ ✓
4 // 3bESG/10Kr/2TVG/10Kr/b3ESG	100/37F	ECLAZ®	Iso Alu	0,6 0,6	60 60	0,94 0,94	0,027 0,04	0,7 0,73	37 37	-1 -1	-7 -7	✓ ✓	× ×
6 // 3bESG/12Ar/3/14Ar/b4	111/3AD	ECLAZ®	Iso Alu	0,7 0,7	60 60	0,92 0,92	0,024 0,041	0,76 0,8	42 42	-2 -2	-7 -7	✓ ✓	✓ ✓
6 // 4bESG/12Ar/4/12Ar/b4ESG	111/3A2	ECLAZ®	Iso Alu	0,7 0,7	59 59	0,92 0,92	0,025 0,041	0,76 0,8	42 42	-2 -2	-7 -7	✓ ✓	✓ ✓
4 // 4bESG/12Ar/4/12Ar/b4ESG	100/3A2	ECLAZ®	Iso Alu	0,7 0,7	59 59	0,92 0,92	0,025 0,041	0,76 0,8	39 39	-2 -2	-8 -8	× ×	✓ ✓
4 // 4bESG/12Kr/4/12Kr/b4ESG	100/3A1	ECLAZ®	Iso Alu	0,5 0,5	59 59	0,92 0,92	0,028 0,046	0,62 0,67	39 39	-2 -2	-8 -8	✓ ✓	× ×
4 // 3bESG/8Ar/3/10Ar/b4	100/3AF	ECLAZ®	Iso Alu	0,9 0,9	60 60	0,94 0,94	0,023 0,035	0,9 0,93	39 39	-2 -2	-7 -7	× ×	× ×
4 // 4ESG/20Ar/b4	100/2KL	ECLAZ®	Iso Alu	1,1 1,1	71 71	0,94 0,94	0,022 0,036	0,97 1	39 39	-2 -2	-7 -7	✓ ✓	× ×
6 // 4ESG/20Ar/b4	111/2KL	ECLAZ®	Iso Alu	1,1 1,1	71 71	0,94 0,94	0,022 0,036	0,97 1	42 42	-2 -2	-7 -7	× ×	✓ ✓
6 // 6b/8Ar/4bESG/8Ar/44.6(VSG-S)	111/37Q	ECLAZ®	Iso Alu	1 1	56 56	0,94 0,94	0,024 0,039	1 1,1	46 46	-2 -2	-6 -6	× ×	✓ ✓



## **ECLAZ®** – Enjoy the many benefits of the Internorm **ECLAZ® Premium Coating**

### **More light & transparency**

- The special coating allows more daylight to enter the interior, therefore making it brighter and friendlier.
- Enjoy a clearer view of the outside. The external reflection or mirror effect is also low and the glass is colour-neutral from the outside.

### **Improved health & productivity**

- ECLAZ® helps to regulate your inner balance. Blue light from the sun helps to regulate your natural sleep and wake cycle, elevate moods and increase the feeling of well being.

### **Increased happiness & well-being**

- Daylight has a balanced light spectrum and regulates the serotonin balance, which is responsible for well-being and life energy. Halogen bulbs, fluorescent tubes and LEDs lack these important light frequencies. ECLAZ® floods the house with daylight.

- 77% more light transmission of triple glazing with ECLAZ® helps to boost health and well-being, especially in the darker autumn and winter months.

### **Better energy efficiency & higher cost savings**

- Less heat loss: ECLAZ® provides excellent thermal insulation, therefore reducing heating costs.
- Greater energy savings: 60% improvement in solar gain with triple glazing resulting in lower heating costs and higher energy efficiency.

### **Get more as standard**

- ECLAZ® is fitted as standard in every Internorm window.
- No additional costs. You enjoy the benefits of this premium glass coating without having to pay more.