



DLS ECKLITE EVOLUTION[®]

**g-Value total
8%**

Synergy of
active light directing
and variable solar control
in an insulated unit

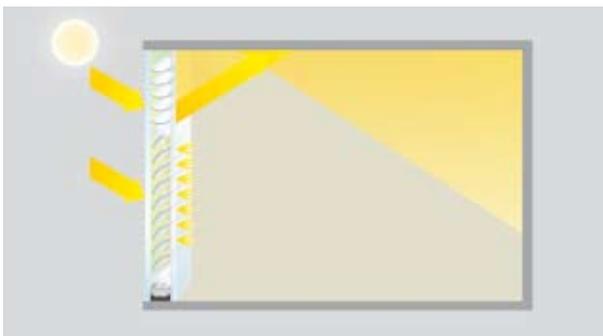
controllable comfort, protects from overheating and glare



NEW REQUIREMENTS OF THE AUSTRIAN BUILDING INSTITUTE (OIB)

The European Commission released a Building guideline 2002/91/EG (EPBD) in December 2002 about the topic thermal insulation which is intended to drastically reduce energy consumption and Carbon Dioxide emissions. The national interpretation by the OIB (Austrian Building Institute) of the superseded guideline 6 is expected in January 2008. Therein, the calculation methods for buildings with air-conditioning like in most countries will not only calculate the energy use of the air-conditioning but also artificial lighting. The use of natural daylight and the subsequent reduction in internal heat sources will have particular significance for glass facades. The use of artificial lighting accounts for approx. 30% of the energy use – a similar amount is also needed for heating and cooling.

Summer sensible, user-oriented construction with optimum daylight harvesting is the current trend to accommodate the intentions of the European Union building guideline (EPBD 2002/91/EG). This also requires a complex design method and a time-conscious involvement of all parties. The most significant contributors are comfort, use, building orientation, architecture and the materials used.



LIGHT = LIFE

Conventional or one-dimensional perspectives in the evaluation of glass in comparison to solid walls leave the only solution being the use of small areas of glass in the envelope to combat energy gain. Here, however, the most significant factors in modern building technology are ignored. One single importance being daylight.

Us humans in our modern industrialised society spend – unbelievably - 90% of our time in closed rooms. Sunlight has, over time in evolution, guaranteed humans health and comfort – therefore, and in particular these days, it is so important that the use of natural daylight is employed for its psychological effects on our lives. The relationship to the environment provides us with important information for our behaviour, our ability to perform and gives orientation. A reduction in the area of windows for price reasons and misunderstood maximisation of thermal insulation is confronted by the importance of light for quality of life. Or could you imagine living or working in a windowless energy-saving box?

On another point – if we did follow this idea, the energy use for artificial lighting would increase dramatically. This cannot be the right solution even if we do use energy saving light bulbs.

	LT _{diff}	g-Value
Upper Area	29 %	20 %
Vision Area	3 %	5 %
g-Value total:		8 %



THE SOLUTION: ECKLITE

The (energy-optimised) future of glass also brings the chance to develop suitable products for protection against undesired energy transmission and to optimise daylight intelligently. The challenge is really to fulfil the contrary desired of sufficient daylight and controlling the effects of heat and energy transmission – in summer as well as in winter. **ECKELT** with its **ECKLITE EVOLUTION** has brought an exceptional solution to the market. The new product unites passive-energy house levels of thermal insulation with variable solar control – comparable with an external blind - and active daylight harvesting to the depths of the room.

LONG-TERM PERFORMANCE

For the evaluation of life-expectancy of such systems, the *ift* in Rosenheim has established strong but objective guidelines in its directive VE 07/2. **ECKLITE** is the only product to date which has shown compliance with this guideline which equates to an average use over a time-period of more than 20 years.

Glass stands today in the architectural language for transparency, clarity, communication and innovation – values with which humans and modern corporations identify themselves. The innovation of comfort is documented by **ECKLITE EVOLUTION**, the intelligent solution for office buildings where humans and their ergonomic demands as well as our future of energy resources are in the spotlight.

TWO SYSTEMS IN ONE

Efficient solar control in the vision area and a separately operated active daylight harvesting zone above are combined in one unit. The integrated louvres are concave and convex in their respective zones, and permanently protected in the cavity of the insulated unit. Even during a storm it is possible to operate the system. The total energy transmission is as low as 0,05 (g-value) with closed blinds in the vision zone – that equates to the efficiency of a very good external shading device. The daylight harvesting in the upper zone is ideal to transport incident daylight deep into the room via a (typically) white ceiling, providing glare-free, indirect light at the workplace.

In order to have optimum use of passive solar gain in winter, it is also possible to have the lower zone blinds completely open or alternatively the complete blind including the upper zone blinds. **ECKLITE EVOLUTION** performs in accordance with the window standard of a passive-energy house. The composition with triple-glazing guarantees peak performance in thermal insulation of up to 0,6 W/m².K.

The operation of the 24 V Maxon motor with incremental switching is via specially developed motor control units which allow a very fine adjustment of the louvres – even when multiple units are next to each other. The ECKLITE motor control units have RS-485 interfaces as standard which allow integration into expected building management systems.

Find more information about solar- and glare-control on www.eckelt.at

ECKLITE keeps cool and bright

EFFICIENT AS AN EXTERNAL SHADING DEVICE

Simulation calculations have proven that even glass areas with difficult orientation can have up to 95 % of the facade area using **ECKLITE** and still comply with the requirements of the OIB guideline 6 with less than 1,0 kWh/m³ pa.

ROOM CLIMATE AND USER COMFORT PROVEN

Within the framework of the research project *EVA*, the Technical University of Braunschweig examined the office building of Gelsenwasser AG in respect of energy and comfort levels. Prof. DI Fisch certifies in his evaluation that the fully-glazed building „the specified high requirements of thermal comfort are fulfilled. Overheating does not occur in this highly transparent building.“ A user questionnaire confirmed these findings.

SECURITY IN PERFORMANCE

In storms and high winds it is still possible to completely use the system. The protected integration in the cavity of the insulated unit permanently stops soiling of the louvers – cleaning of the glass units is therefore no more effort than normal.

LONG-TERM PERFORMANCE

The guideline VE 07/2 from ift Rosenheim evaluates the long-term performance at an average use of over 20 years. **ECKLITE** is the only product currently on the market which fulfills this requirements.

SUMMER HEAT PROTECTION

g-value of up to 0,05

THERMAL INSULATION

U-value of up to 0,6 W/m².K

DIMENSIONS

Up to 2400 x 3600 mm