

## Sputtered Helios Dark Neutral

NHE 1020 ER HPR



## Performance Data

Technical data according to EN 410 and EN 673*	4 mm single	4/16/4 mm double
Solar Energy Transmission, $\tau_e$	20%	18%
Solar Energy Reflection, $\rho_e$	24%	28%
Solar Energy Absorption, $\alpha_e$	56%	54%
Visible Light Transmission, $T_V$	22%	21%
Visible Light Reflection (External), $\rho_{ve}$	26%	30%
Visible Light Reflection (Internal), $\rho_{vi}$	30%	
Ultraviolet Transmission, $\tau_{UV}$	<1%	
Ultraviolet Rejection	>99 %	
g value	0.34	0.24
Shading Coefficient	0.39	0.28
Total Solar Energy Rejected	66%	76%
Glare Reduction	75%	
U value, single glazing (W/m <sup>2</sup> .K)	5.71	
U value, double glazing, Air filled (W/m <sup>2</sup> .K)		2.69
Emissivity, $\epsilon_n$	0.86	
Colour Rendering Index, $R_a$	99	98
Film Colour / Appearance	Neutral	
Installation position	External	
Manufacturer's Limited Warranty**: 10 Years vertical / 5 Years sloping		

Installation Notes: Please follow Technical Bulletin 73 Installation, sealing and splicing guidelines.

Please check the complete Film to Glass Thermal Stress Compatibility Guidelines before film installation; Contact Eastman Performance Films for full details.

\*The properties reported for LLumar architectural window films were calculated using EN410 methodology for film applied to single pane (4mm clear glass) and dual pane glazing (4mm clear glass panes, 16mm air space). Reported values were calculated from representative product samples. Actual performance may vary based on a number of factors, including glass properties, and standard manufacturing variances. Solar spectrum used: UV 300-380nm, Visible Light 380-780nm, IR 780-2500nm.

\*\*Manufacturer's Limited Warranty validity: Europe only. Certain restrictions apply, see authorized dealer for warranty details.

Datasheet created on 20/02/19. For a more recent version please contact your LLumar representative.

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## Features And Benefits



- Neutral solar control and privacy exterior grade film
- Used where an exterior application is critical to provide excellent heat and glare reduction with a unique combination of moderate reflectance and neutral daylight colour balance
- Helios technology includes hydrophobic (water resistance), oleophobic (oil resistance) and UV blocking, giving excellent weather resistance and durability
- Patented coating technology that has resulted in a durable and easy to clean product.
- Rejects up to 68% of solar energy, helping reduce heat build-up, and energy costs, increasing occupant comfort.
- Reduction of hot spots helps increase HVAC efficiency and lower energy costs
- Shields >99% of UV radiation, helping to reduce fading of valuables, fabrics and furnishings\*\*
- Reduces glare, which is a contributor to eye fatigue
- Exterior installation