

Glass designation :

XDF DARK GRAY

Code **8135**

Color :

Gray

Glass type :

Medium to dark.

Application :

Pretinted 45% photochromic glass suited for general or special purpose sunglass lenses. Neutral gray with excellent color rendition. Pass cited standards for traffic signal recognition at 2 mm thickness. Blanks for corrective lenses available on request.

PHYSICAL PROPERTIES

Density :	2.41	g/cm ³
Linear Exp. Coef. :	65	10 ⁻⁷ /°C
Viscosity :	Soft. Pt	665 °C
	Ann. Pt	495 °C
	Strain Pt	465 °C

REFRACTIVE INDEX

Line		λ (nm)	Value
F'	Cadmium	480.0	1.52992
F	Hydrogen	486.1	1.52933
e	Mercury	546.1	1.52518
d	Helium	587.6	1.52300
C'	Cadmium	643.8	1.52064
C	Hydrogen	656.3	1.52017
Abbe Number			
	ve		56.6
	vd		57.1

TRANSMISSION PROPERTIES (2 mm)

VISIBLE 380 - 780 nm	Faded	Darkened
Luminous transmission factor	44.0%	15.5%

ULTRAVIOLET

t(max) 280 - 315 nm	< 0.1 %	< 0.1 %
t(avg) 280 - 315 nm	< 0.1 %	< 0.1 %
Solar UV-B transmission factor	< 0.1 %	< 0.1 %

t(max) 315 - 350 nm	3.0%	1.0%
t(moy) 315 - 380 nm	7.0%	2.0%
Solar UV-A transmission factor	4.5%	1.5%

BLUE LIGHT 380 - 500 nm		
Blue light transmission factor	45.0%	16.0%

TRAFFIC SIGNAL RECOGNITION

ISO 14889	Pass
ANSI Z80-3	Pass
AS 1067.1	Pass

CAUTION :

Lens thicknesses greater than 2.5 mm transmit less than the 8% visible transmission required for driving

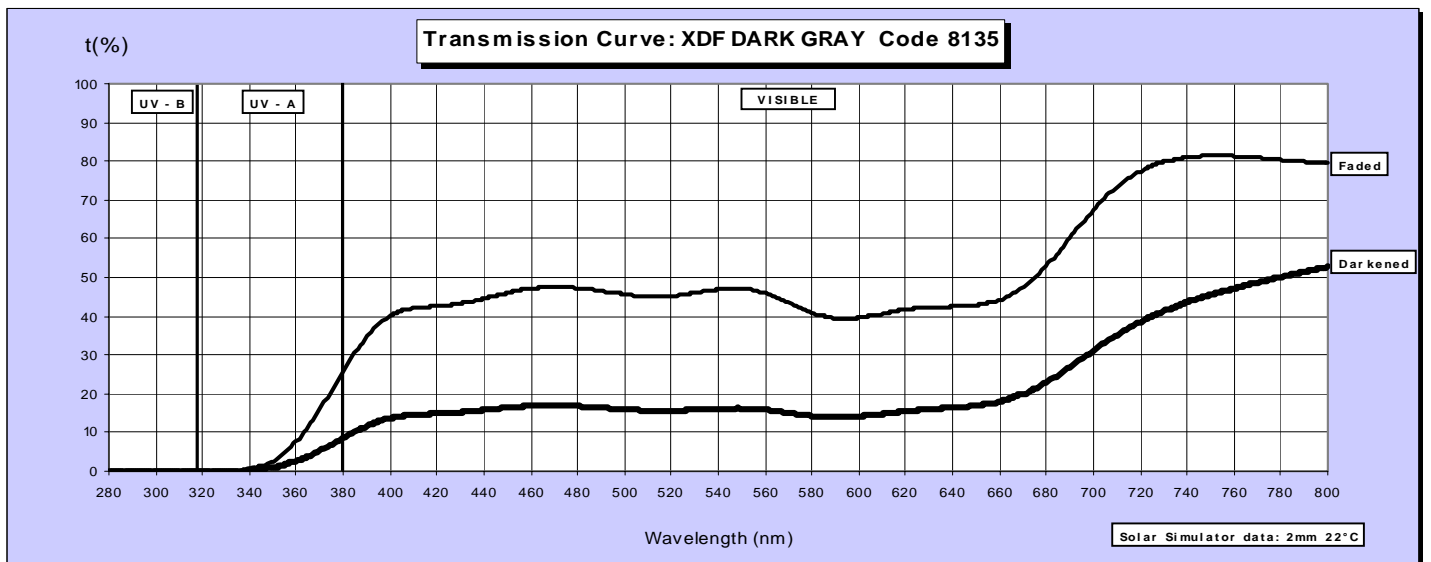
COATING & TEMPERING

(See also notes below)

Vacuum coating	YES
Chemical tempering	YES
Air tempering	YES

CHEMICAL DURABILITY (class)

To water	NF ISO 719
To acid	DIN 12-116
To alkalis	ISO 695



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Note :

Heat treatments as indicated below or vacuum coatings may cause changes in transmission and color properties.

Chemtempering :

Recommended bath and cycle

Bath :	Potassium Nitrate	59.5%	Time :	16 Hr	2 Hr
	Sodium Nitrate	40.0%	T °C :	400 °C	450 °C
	Silicic acid	0.5%			

Air tempering :

Use standard schedule for photochromic crown glass. Minimum lens thickness for normal air tempered is 2 mm.

Compatible Bariums :

This glass has not been designed for fused multifocal production.
 There is no compatible barium to be fused with this glass.

Transmittance properties according to ISO 8980-3

Photochromic response :

Temperature			2 mm thickness
22 °C	Heat faded	Tv (0)	44.0%
	15 mn darkened	Tv (15)	15.5%
	5 mn faded		30.0%
	Night driving conditions ⁽¹⁾		40.0%
5 °C	15 mn darkened	Tv (15)	12.0%
35 °C	15 mn darkened	Tv (15)	22.0%

⁽¹⁾ Reference : ISO 8980-3 Chapter 6.5

Transmission categories :

	2 mm
Faded state	Category 1
Darkened state	Category 3
Night driving ⁽²⁾	No

⁽²⁾ Reference : ISO 14889 Chapter 4.5

Properties according to ISO 14889

ISO 14889 Chapter 4.3.1

Physiological compatibility

The above glass products are not known to be physiologically incompatible nor known to create a significant number of allergic reactions when the lenses made out of these materials are used as intended by the manufacturer.

ISO 14889 Chapter 4.3.2

Flammability

The above glass products are not flammable and when tested as described in chapter 5.1 of ISO 14889 there is no continued combustion after withdrawal of the test rod.