CORNING SAS - Specialty Glass
Rue St Laurent - CS 10243 Bagneaux sur Loing - 77797 NEMOURS CEDEX - FRANCE

Glass designation : **XDF LIGHT GRAY** Code **81015**

Color : **Gray**
Glass type : **Light to dark.**
Application : **Pretinted 77% photochromic glass suited for general or special purpose Tinted glasses. 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/cm3
Linear Exp. Coef. :		63.5	α +20/+300°C (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	
F	Hydrogen	486.1	
e	Mercury	546.1	
d	Helium	587.6	1.52300
C'	Cadmium	643.8	
C	Hydrogen	656.3	

Abbe Number	νe	
	νd	56.7

TRANSMISSION PROPERTIES (2 mm)

VISIBLE 380 - 780 nm	Faded	Darkened
Luminous transmission factor	77.0%	25.0%
ULTRAVIOLET		
t(max) 280 - 315 nm	0.2 %	< 0.1 %
t(avg) 280 - 315 nm	0.2 %	< 0.1 %
Solar UV-B transmission factor	0.2 %	< 0.1 %
t(max) 315 - 350 nm	5.0%	2.0%
t(avg) 315 - 380 nm	10.0%	3.0%
Solar UV-A transmission factor	7.0%	2.0%
BLUE LIGHT 380 - 500 nm		
Blue light transmission factor	75.0%	25.0%

TRAFFIC SIGNAL RECOGNITION

ISO 14889	*Pass*
ANSI Z80-3	*Pass*
AS 1067.1	*Pass*

CAUTION :
Lens thicknesses greater than 3 mm transmit less than the 8% visible transmission required for driving

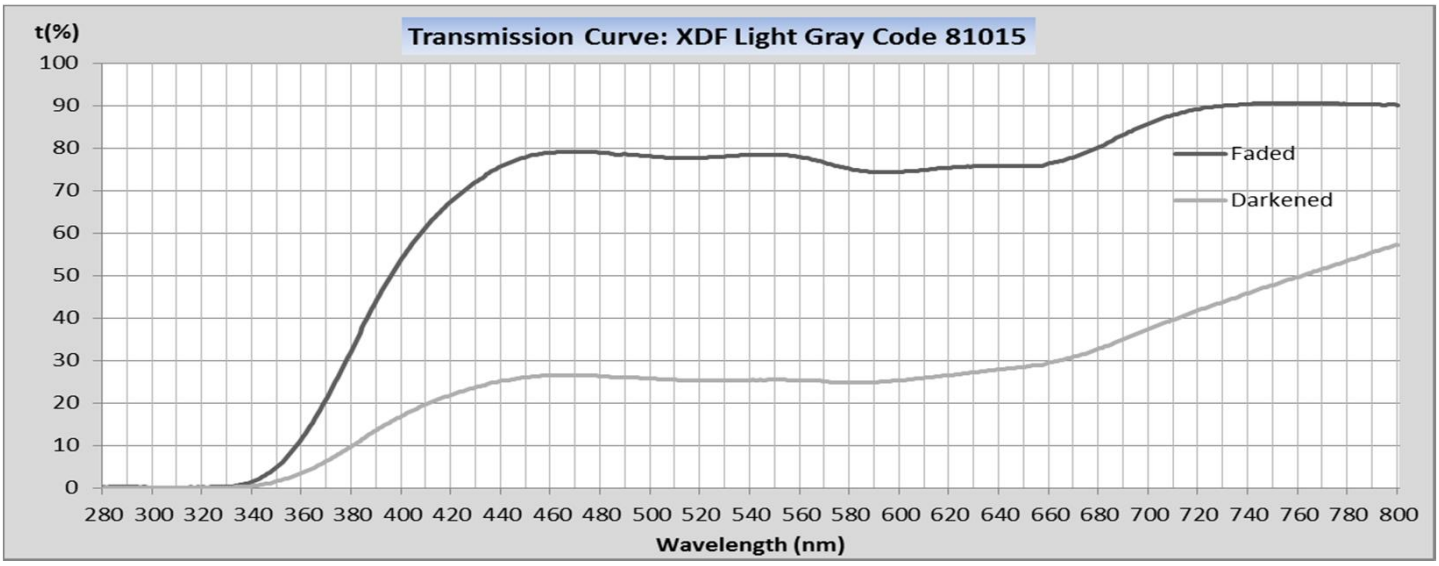
COATING & TEMPERING

(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



Non-toleranced numerical values are typical values

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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)	**77%**
	15 mn darkened	Tv (15)	**25%**
	5 mn faded		**53%**
	Night driving conditions (1)		**70%**
5 °C	15 mn darkened	Tv (15)	**21%**
35 °C	15 mn darkened	Tv (15)	**37%**

(1) Reference : ISO 8980-3 Chapter 6.5

Transmission categories :

	2 mm
Faded state	**1**
Darkened state	**2**
Night driving (2)	**1**

(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.

Non-toleranced numerical values are typical values