| | [**Overview**](http://docs.google.com/overview-summary.html) | [**Package**](http://docs.google.com/package-summary.html) | **Class** | [**Use**](http://docs.google.com/class-use/ICC_ProfileGray.html) | [**Tree**](http://docs.google.com/package-tree.html) | [**Deprecated**](http://docs.google.com/deprecated-list.html) | [**Index**](http://docs.google.com/index-files/index-1.html) | [**Help**](http://docs.google.com/help-doc.html) | | --- | --- | --- | --- | --- | --- | --- | --- | | | ***Java™ Platform***  ***Standard Ed. 6*** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| [**PREV CLASS**](http://docs.google.com/java/awt/color/ICC_Profile.html)   [**NEXT CLASS**](http://docs.google.com/java/awt/color/ICC_ProfileRGB.html) | [**FRAMES**](http://docs.google.com/index.html?java/awt/color/ICC_ProfileGray.html)    [**NO FRAMES**](http://docs.google.com/ICC_ProfileGray.html)     [**All Classes**](http://docs.google.com/allclasses-noframe.html) |
| SUMMARY: NESTED | [FIELD](#2et92p0) | CONSTR | [METHOD](#tyjcwt) | DETAIL: FIELD | CONSTR | [METHOD](#4d34og8) |

## **java.awt.color**

Class ICC\_ProfileGray

[java.lang.Object](http://docs.google.com/java/lang/Object.html)  
 [java.awt.color.ICC\_Profile](http://docs.google.com/java/awt/color/ICC_Profile.html)  
 **java.awt.color.ICC\_ProfileGray**

**All Implemented Interfaces:** [Serializable](http://docs.google.com/java/io/Serializable.html)

public class **ICC\_ProfileGray**extends [ICC\_Profile](http://docs.google.com/java/awt/color/ICC_Profile.html)

A subclass of the ICC\_Profile class which represents profiles which meet the following criteria: the color space type of the profile is TYPE\_GRAY and the profile includes the grayTRCTag and mediaWhitePointTag tags. Examples of this kind of profile are monochrome input profiles, monochrome display profiles, and monochrome output profiles. The getInstance methods in the ICC\_Profile class will return an ICC\_ProfileGray object when the above conditions are met. The advantage of this class is that it provides a lookup table that Java or native methods may be able to use directly to optimize color conversion in some cases.

To transform from a GRAY device profile color space to the CIEXYZ Profile Connection Space, the device gray component is transformed by a lookup through the tone reproduction curve (TRC). The result is treated as the achromatic component of the PCS.

  PCSY = grayTRC[deviceGray]

The inverse transform is done by converting the PCS Y components to device Gray via the inverse of the grayTRC.

**See Also:**[Serialized Form](http://docs.google.com/serialized-form.html#java.awt.color.ICC_ProfileGray)

| **Field Summary** | |
| --- | --- |

| **Fields inherited from class java.awt.color.**[**ICC\_Profile**](http://docs.google.com/java/awt/color/ICC_Profile.html) |
| --- |
| [CLASS\_ABSTRACT](http://docs.google.com/java/awt/color/ICC_Profile.html#CLASS_ABSTRACT), [CLASS\_COLORSPACECONVERSION](http://docs.google.com/java/awt/color/ICC_Profile.html#CLASS_COLORSPACECONVERSION), [CLASS\_DEVICELINK](http://docs.google.com/java/awt/color/ICC_Profile.html#CLASS_DEVICELINK), [CLASS\_DISPLAY](http://docs.google.com/java/awt/color/ICC_Profile.html#CLASS_DISPLAY), [CLASS\_INPUT](http://docs.google.com/java/awt/color/ICC_Profile.html#CLASS_INPUT), [CLASS\_NAMEDCOLOR](http://docs.google.com/java/awt/color/ICC_Profile.html#CLASS_NAMEDCOLOR), [CLASS\_OUTPUT](http://docs.google.com/java/awt/color/ICC_Profile.html#CLASS_OUTPUT), [icAbsoluteColorimetric](http://docs.google.com/java/awt/color/ICC_Profile.html#icAbsoluteColorimetric), [icCurveCount](http://docs.google.com/java/awt/color/ICC_Profile.html#icCurveCount), [icCurveData](http://docs.google.com/java/awt/color/ICC_Profile.html#icCurveData), [icHdrAttributes](http://docs.google.com/java/awt/color/ICC_Profile.html#icHdrAttributes), [icHdrCmmId](http://docs.google.com/java/awt/color/ICC_Profile.html#icHdrCmmId), [icHdrColorSpace](http://docs.google.com/java/awt/color/ICC_Profile.html#icHdrColorSpace), [icHdrCreator](http://docs.google.com/java/awt/color/ICC_Profile.html#icHdrCreator), [icHdrDate](http://docs.google.com/java/awt/color/ICC_Profile.html#icHdrDate), [icHdrDeviceClass](http://docs.google.com/java/awt/color/ICC_Profile.html#icHdrDeviceClass), [icHdrFlags](http://docs.google.com/java/awt/color/ICC_Profile.html#icHdrFlags), [icHdrIlluminant](http://docs.google.com/java/awt/color/ICC_Profile.html#icHdrIlluminant), [icHdrMagic](http://docs.google.com/java/awt/color/ICC_Profile.html#icHdrMagic), [icHdrManufacturer](http://docs.google.com/java/awt/color/ICC_Profile.html#icHdrManufacturer), [icHdrModel](http://docs.google.com/java/awt/color/ICC_Profile.html#icHdrModel), [icHdrPcs](http://docs.google.com/java/awt/color/ICC_Profile.html#icHdrPcs), [icHdrPlatform](http://docs.google.com/java/awt/color/ICC_Profile.html#icHdrPlatform), [icHdrProfileID](http://docs.google.com/java/awt/color/ICC_Profile.html#icHdrProfileID), [icHdrRenderingIntent](http://docs.google.com/java/awt/color/ICC_Profile.html#icHdrRenderingIntent), [icHdrSize](http://docs.google.com/java/awt/color/ICC_Profile.html#icHdrSize), [icHdrVersion](http://docs.google.com/java/awt/color/ICC_Profile.html#icHdrVersion), [icICCAbsoluteColorimetric](http://docs.google.com/java/awt/color/ICC_Profile.html#icICCAbsoluteColorimetric), [icMediaRelativeColorimetric](http://docs.google.com/java/awt/color/ICC_Profile.html#icMediaRelativeColorimetric), [icPerceptual](http://docs.google.com/java/awt/color/ICC_Profile.html#icPerceptual), [icRelativeColorimetric](http://docs.google.com/java/awt/color/ICC_Profile.html#icRelativeColorimetric), [icSaturation](http://docs.google.com/java/awt/color/ICC_Profile.html#icSaturation), [icSigAbstractClass](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigAbstractClass), [icSigAToB0Tag](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigAToB0Tag), [icSigAToB1Tag](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigAToB1Tag), [icSigAToB2Tag](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigAToB2Tag), [icSigBlueColorantTag](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigBlueColorantTag), [icSigBlueMatrixColumnTag](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigBlueMatrixColumnTag), [icSigBlueTRCTag](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigBlueTRCTag), [icSigBToA0Tag](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigBToA0Tag), [icSigBToA1Tag](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigBToA1Tag), [icSigBToA2Tag](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigBToA2Tag), [icSigCalibrationDateTimeTag](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigCalibrationDateTimeTag), [icSigCharTargetTag](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigCharTargetTag), [icSigChromaticAdaptationTag](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigChromaticAdaptationTag), [icSigChromaticityTag](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigChromaticityTag), [icSigCmyData](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigCmyData), [icSigCmykData](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigCmykData), [icSigColorantOrderTag](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigColorantOrderTag), [icSigColorantTableTag](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigColorantTableTag), [icSigColorSpaceClass](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigColorSpaceClass), [icSigCopyrightTag](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigCopyrightTag), [icSigCrdInfoTag](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigCrdInfoTag), [icSigDeviceMfgDescTag](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigDeviceMfgDescTag), [icSigDeviceModelDescTag](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigDeviceModelDescTag), [icSigDeviceSettingsTag](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigDeviceSettingsTag), [icSigDisplayClass](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigDisplayClass), [icSigGamutTag](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigGamutTag), [icSigGrayData](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigGrayData), [icSigGrayTRCTag](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigGrayTRCTag), [icSigGreenColorantTag](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigGreenColorantTag), [icSigGreenMatrixColumnTag](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigGreenMatrixColumnTag), [icSigGreenTRCTag](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigGreenTRCTag), [icSigHead](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigHead), [icSigHlsData](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigHlsData), [icSigHsvData](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigHsvData), [icSigInputClass](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigInputClass), [icSigLabData](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigLabData), [icSigLinkClass](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigLinkClass), [icSigLuminanceTag](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigLuminanceTag), [icSigLuvData](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigLuvData), [icSigMeasurementTag](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigMeasurementTag), [icSigMediaBlackPointTag](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigMediaBlackPointTag), [icSigMediaWhitePointTag](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigMediaWhitePointTag), [icSigNamedColor2Tag](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigNamedColor2Tag), [icSigNamedColorClass](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigNamedColorClass), [icSigOutputClass](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigOutputClass), [icSigOutputResponseTag](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigOutputResponseTag), [icSigPreview0Tag](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigPreview0Tag), [icSigPreview1Tag](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigPreview1Tag), [icSigPreview2Tag](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigPreview2Tag), [icSigProfileDescriptionTag](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigProfileDescriptionTag), [icSigProfileSequenceDescTag](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigProfileSequenceDescTag), [icSigPs2CRD0Tag](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigPs2CRD0Tag), [icSigPs2CRD1Tag](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigPs2CRD1Tag), [icSigPs2CRD2Tag](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigPs2CRD2Tag), [icSigPs2CRD3Tag](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigPs2CRD3Tag), [icSigPs2CSATag](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigPs2CSATag), [icSigPs2RenderingIntentTag](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigPs2RenderingIntentTag), [icSigRedColorantTag](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigRedColorantTag), [icSigRedMatrixColumnTag](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigRedMatrixColumnTag), [icSigRedTRCTag](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigRedTRCTag), [icSigRgbData](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigRgbData), [icSigScreeningDescTag](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigScreeningDescTag), [icSigScreeningTag](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigScreeningTag), [icSigSpace2CLR](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigSpace2CLR), [icSigSpace3CLR](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigSpace3CLR), [icSigSpace4CLR](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigSpace4CLR), [icSigSpace5CLR](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigSpace5CLR), [icSigSpace6CLR](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigSpace6CLR), [icSigSpace7CLR](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigSpace7CLR), [icSigSpace8CLR](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigSpace8CLR), [icSigSpace9CLR](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigSpace9CLR), [icSigSpaceACLR](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigSpaceACLR), [icSigSpaceBCLR](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigSpaceBCLR), [icSigSpaceCCLR](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigSpaceCCLR), [icSigSpaceDCLR](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigSpaceDCLR), [icSigSpaceECLR](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigSpaceECLR), [icSigSpaceFCLR](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigSpaceFCLR), [icSigTechnologyTag](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigTechnologyTag), [icSigUcrBgTag](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigUcrBgTag), [icSigViewingCondDescTag](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigViewingCondDescTag), [icSigViewingConditionsTag](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigViewingConditionsTag), [icSigXYZData](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigXYZData), [icSigYCbCrData](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigYCbCrData), [icSigYxyData](http://docs.google.com/java/awt/color/ICC_Profile.html#icSigYxyData), [icTagReserved](http://docs.google.com/java/awt/color/ICC_Profile.html#icTagReserved), [icTagType](http://docs.google.com/java/awt/color/ICC_Profile.html#icTagType), [icXYZNumberX](http://docs.google.com/java/awt/color/ICC_Profile.html#icXYZNumberX) |

| **Method Summary** | |
| --- | --- |
| float | [**getGamma**](http://docs.google.com/java/awt/color/ICC_ProfileGray.html#getGamma())()            Returns a gamma value representing the tone reproduction curve (TRC). |
| float[] | [**getMediaWhitePoint**](http://docs.google.com/java/awt/color/ICC_ProfileGray.html#getMediaWhitePoint())()            Returns a float array of length 3 containing the X, Y, and Z components of the mediaWhitePointTag in the ICC profile. |
| short[] | [**getTRC**](http://docs.google.com/java/awt/color/ICC_ProfileGray.html#getTRC())()            Returns the TRC as an array of shorts. |

| **Methods inherited from class java.awt.color.**[**ICC\_Profile**](http://docs.google.com/java/awt/color/ICC_Profile.html) |
| --- |
| [finalize](http://docs.google.com/java/awt/color/ICC_Profile.html#finalize()), [getColorSpaceType](http://docs.google.com/java/awt/color/ICC_Profile.html#getColorSpaceType()), [getData](http://docs.google.com/java/awt/color/ICC_Profile.html#getData()), [getData](http://docs.google.com/java/awt/color/ICC_Profile.html#getData(int)), [getInstance](http://docs.google.com/java/awt/color/ICC_Profile.html#getInstance(byte%5B%5D)), [getInstance](http://docs.google.com/java/awt/color/ICC_Profile.html#getInstance(java.io.InputStream)), [getInstance](http://docs.google.com/java/awt/color/ICC_Profile.html#getInstance(int)), [getInstance](http://docs.google.com/java/awt/color/ICC_Profile.html#getInstance(java.lang.String)), [getMajorVersion](http://docs.google.com/java/awt/color/ICC_Profile.html#getMajorVersion()), [getMinorVersion](http://docs.google.com/java/awt/color/ICC_Profile.html#getMinorVersion()), [getNumComponents](http://docs.google.com/java/awt/color/ICC_Profile.html#getNumComponents()), [getPCSType](http://docs.google.com/java/awt/color/ICC_Profile.html#getPCSType()), [getProfileClass](http://docs.google.com/java/awt/color/ICC_Profile.html#getProfileClass()), [readResolve](http://docs.google.com/java/awt/color/ICC_Profile.html#readResolve()), [setData](http://docs.google.com/java/awt/color/ICC_Profile.html#setData(int,%20byte%5B%5D)), [write](http://docs.google.com/java/awt/color/ICC_Profile.html#write(java.io.OutputStream)), [write](http://docs.google.com/java/awt/color/ICC_Profile.html#write(java.lang.String)) |

| **Methods inherited from class java.lang.**[**Object**](http://docs.google.com/java/lang/Object.html) |
| --- |
| [clone](http://docs.google.com/java/lang/Object.html#clone()), [equals](http://docs.google.com/java/lang/Object.html#equals(java.lang.Object)), [getClass](http://docs.google.com/java/lang/Object.html#getClass()), [hashCode](http://docs.google.com/java/lang/Object.html#hashCode()), [notify](http://docs.google.com/java/lang/Object.html#notify()), [notifyAll](http://docs.google.com/java/lang/Object.html#notifyAll()), [toString](http://docs.google.com/java/lang/Object.html#toString()), [wait](http://docs.google.com/java/lang/Object.html#wait()), [wait](http://docs.google.com/java/lang/Object.html#wait(long)), [wait](http://docs.google.com/java/lang/Object.html#wait(long,%20int)) |

| **Method Detail** |
| --- |

### getMediaWhitePoint

public float[] **getMediaWhitePoint**()

Returns a float array of length 3 containing the X, Y, and Z components of the mediaWhitePointTag in the ICC profile.

**Returns:**an array containing the components of the mediaWhitePointTag in the ICC profile.

### getGamma

public float **getGamma**()

Returns a gamma value representing the tone reproduction curve (TRC). If the profile represents the TRC as a table rather than a single gamma value, then an exception is thrown. In this case the actual table can be obtained via getTRC(). When using a gamma value, the PCS Y component is computed as follows:

  gamma  
  PCSY = deviceGray

**Returns:**the gamma value as a float. **Throws:** [ProfileDataException](http://docs.google.com/java/awt/color/ProfileDataException.html) - if the profile does not specify the TRC as a single gamma value.

### getTRC

public short[] **getTRC**()

Returns the TRC as an array of shorts. If the profile has specified the TRC as linear (gamma = 1.0) or as a simple gamma value, this method throws an exception, and the getGamma() method should be used to get the gamma value. Otherwise the short array returned here represents a lookup table where the input Gray value is conceptually in the range [0.0, 1.0]. Value 0.0 maps to array index 0 and value 1.0 maps to array index length-1. Interpolation may be used to generate output values for input values which do not map exactly to an index in the array. Output values also map linearly to the range [0.0, 1.0]. Value 0.0 is represented by an array value of 0x0000 and value 1.0 by 0xFFFF, i.e. the values are really unsigned short values, although they are returned in a short array.

**Returns:**a short array representing the TRC. **Throws:** [ProfileDataException](http://docs.google.com/java/awt/color/ProfileDataException.html) - if the profile does not specify the TRC as a table.

| | [**Overview**](http://docs.google.com/overview-summary.html) | [**Package**](http://docs.google.com/package-summary.html) | **Class** | [**Use**](http://docs.google.com/class-use/ICC_ProfileGray.html) | [**Tree**](http://docs.google.com/package-tree.html) | [**Deprecated**](http://docs.google.com/deprecated-list.html) | [**Index**](http://docs.google.com/index-files/index-1.html) | [**Help**](http://docs.google.com/help-doc.html) | | --- | --- | --- | --- | --- | --- | --- | --- | | | ***Java™ Platform***  ***Standard Ed. 6*** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| [**PREV CLASS**](http://docs.google.com/java/awt/color/ICC_Profile.html)   [**NEXT CLASS**](http://docs.google.com/java/awt/color/ICC_ProfileRGB.html) | [**FRAMES**](http://docs.google.com/index.html?java/awt/color/ICC_ProfileGray.html)    [**NO FRAMES**](http://docs.google.com/ICC_ProfileGray.html)     [**All Classes**](http://docs.google.com/allclasses-noframe.html) |
| SUMMARY: NESTED | [FIELD](#2et92p0) | CONSTR | [METHOD](#tyjcwt) | DETAIL: FIELD | CONSTR | [METHOD](#4d34og8) |

[Submit a bug or feature](http://bugs.sun.com/services/bugreport/index.jsp)

For further API reference and developer documentation, see [Java SE Developer Documentation](http://docs.google.com/webnotes/devdocs-vs-specs.html). That documentation contains more detailed, developer-targeted descriptions, with conceptual overviews, definitions of terms, workarounds, and working code examples.

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