Association EDI-Optique

OPTO v11 Optic Catalogue
IMPLEMENTATION GUIDE
FOR LENS

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Contributors

Name	Organization
DROUIN Julien	iFaxNet
LEROY Jean-Christophe	EDI-Optique
RIVALLAIN Alexandre	EDI-Optique
DEUDON Jean-Baptiste	iZySolutions

Log of Changes

Issue No.	Date of Change	Changed By	Summary of Change
#1	2009-06-19	Julien DROUIN	Creation
#2	2009-07-07	Jean-Christophe LEROY	Review and completion of the document
#3	2009-07-13	Julien DROUIN Jean-Christophe LEROY	Final revision from GT XML
#4	2009-08-21	Julien DROUIN	Separation of : - Implementation guide for header - Implementation guide for lens - Implementation guide for pack
#5	2009-08-31	Julien DROUIN	Suppression of BracketRangePrice
#6	2009-09-11	Julien DROUIN	Fixed wrong reference
#7	2009-10-31	Julien DROUIN	Upgrade to new version of ebXML OPTO v11 schema.
#13	2009-11-15	Jean-Christophe LEROY	Revision and minor corrections. Additional information about manufacturing tables points and files.
#14	2010-04-18	Alexandre RIVALLAIN Jean-Christophe LEROY	The status of data 4.1.2.1. was changed from Mandatory to Optional. Multiple minor corrections. Added Chapter 11. Updated classification schemes. Changed DeliveryLeadTime into DeliveryLeadMeasure and updated data type.

Issue No.	Date of Change	Changed By	Summary of Change
#15	2011-03-31	Julien DROUIN Alexandre RIVALLAIN Jean-Christophe LEROY	Chapter 2: Updated references versions
#17 beta	2014-10-06	Jean-Christophe LEROY	
#18 beta	2018-12-19	Jean-Baptiste DEUDON	Added the lens category characteristic in LensClass, CombinedLensRangeOptionClass and ManufacturingTableClass
#18 beta	2019-06-03	Jean-Baptiste DEUDON	Added the UV filter back-side and Contact angle in CoatingClass Renamed the UV filter to UV filter front-side in CoatingClass
#18	2019-06-28	Jean-Baptiste DEUDON	Updated the document for r18 release
#18	2019-07-18	Jean-Baptiste DEUDON	Updated lens characteristics for r18 release

TABLE OF CONTENTS

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1. Preamble

This document is part of the OPTO v11 Optic Catalogue documentation set. It is not the purpose of this sole document to provide the reader with a complete understanding of the implementation of the OPTO v11 Optic Catalogue.

2. References

- OPTO v11 Optic Catalogue – Read me
- OPTO v11 Optic Catalogue – Understanding the ebXML Strategy
- OPTO v11 Optic Catalogue – Business Requirements Specification
- OPTO v11 Optic Catalogue – Requirements Specification Mapping
- OPTO v11 Optic Catalogue – Data dictionary

The following XML schema and XML documents are also used for reference:

- CatalogueManifest_1p1p2.xsd
- OpticReusableAggregateBusinessInformationEntity_0p1p1.xsd
- OpticClassifications_v1.0r17.xsd
- OpticQualifiedDataType_1p1p0.xsd
- Optic_CharacteristicTypeCode_1p0.xsd
- Optic_ActionCode_1p1.xsd
- Optic_StatusCode_1p1.xsd
- Optic_DocumentTypeCode_1p0.xsd

Additional implementation guides are available for specific product implementation:

- Implementation guide – classification
- OPTO v11 Optic Catalogue – Implementation guide – common parts
- OPTO v11 Optic Catalogue – Implementation guide for frame and shape
- OPTO v11 Optic Catalogue – Implementation guide for contact lens and care product
- OPTO v11 Optic Catalogue – Implementation guide for accessories
- OPTO v11 Optic Catalogue – Implementation guide for pack
- OPTO v11 Optic Catalogue – Implementation guide for lenses

3. Objective

This document aims to assist various stakeholders in the distribution chain of the catalogue to implement the OPTO v11 ebXML Optic Catalogue process.

The guide includes several sections:

- Chapter 4 details the content of all elements included the Catalogue Item element for a lens. For each XML element and sub-element, possible values and attributes are defined. For each item, mapping to the data dictionary data number is provided. Note that implementation rules are also detailed and illustrated by samples. To facilitate the comprehension of the reader, elements are described in the exact same order used in the Business Requirement Specification.
- Chapter 5 to 11 explain to the reader how to build or read and OPTO v11 ebXML Optic Catalogue
- Chapter 12 provides detailed explanation on how to encode manufacturing tables in the catalogue.

This implementation guide is subject to evolutions. It shall be considered as the repository of any information useful to a successfully implement the OPTO v11 ebXML Optic Catalogue process.

4. OPTO v11 Optic Catalogue components for lenses

4.1. Contained Optic Catalogue Item (Optic Catalogue)

Mandatory Element (1..n)

4.1.1. Identifier

Data Number = NOT IN DICTIONNARY

Mandatory Element

Description: The unique identifier for this optic catalogue item.

Data Type: ID (item sequence number in auto increment)

This identifier must be unique across all product types within the catalogue.

Example:

<ID>000012345</ID>

4.1.2. Action code

Data Number:

- **For Lens = #93**
- **For Option = #132 For Combined Options = #255**
- **For Combined Lens Range Option = #262**

Mandatory Data

Description: The code specifying the action for this optic catalogue item.

Data Type: Action Code

List of values:

- **1 :** new, modified
- **2 :** deleted

Example

<ActionCode>1</ActionCode>

Note for point of sale: When you delete a catalogue item you have to delete the item with corresponding Product identification (ProductID, IssuingPartyID and ExtendedProductID)

4.1.3. Validity Delimited Period

Data Number:

- **For Lens = #94 (Start date) - #95 (End date)**
- **For Option = #728 (Start date) - #729 (End date)**
- **For Combined Lens Range Option = #727 (Start date) - #334 (End date)**

Optional Data

Description: Period of validity of the optic catalogue item.

Data Type: Period

Example:

```
<ValidityDelimitedPeriod>
        <StartDateTime>2001-12-17T00:00:00.0Z</StartDateTime>
```

```
        <EndDateTime>2001-12-17T00:00:00.0Z</EndDateTime>
</ValidityDelimitedPeriod>
```

This period of validity includes both the first and the last day.

4.1.4. Last Changed Date Time

Data Number:

- **For Lens = #566**
- **For Option = #574 For Combined Options = #591**
- **For Combined Lens Range Option = #592**

Mandatory Data

Description: The date and time of the last change performed on the optic catalogue item.

Data Type: Date Time

Example:

```
<LastChangedDateTime>2009-12-17T00:00:00Z</LastChangedDateTime>
```

4.1.5. Additional Information

Data Number:

- **For Lens = #124 (Lens URL supplier) - #125 (Lens URL manufacturer) - #732 (Lens Marketing text)**
- **For Option = #146 (Option URL supplier) - #147 (Option URL manufacturer) - #730 (Option marketing text)**

Optional Data (0..n)

Description: Additional information about the catalogue item (e.g. URL of a relevant web page).

Data Type: String

Example:

```
<AdditionalInformation languageID="en-us">http://site.com/catalogue/Item/000012345.html
</AdditionalInformation>
```

4.1.6. Additional Product Relation (Optic Catalogue Item)

Optional Element (0..n)

Note: Can only be used with Option to defined incompatibility between options

List of values:

- **1**: incompatible

Example:

```
<AdditionalOpticProductRelation>
        <ID>000012346</ID>
        <TypeCode>1</TypeCode>
</AdditionalOpticProductRelation>
```

4.1.6.1. Identifier

Data Number = #251

Mandatory Data

Description: The identification of the related catalogue item.

Data Type: ID

4.1.6.2. Type Code

Mandatory Data

Description: The code specifying the type of relation between items. In our case always “1”.

Data Type: String

Values:

- **Incompatible**: Incompatibility between options

4.2. Applicable Optic Trade Agreement (Optic Catalogue Item) (0..1)

Mandatory Element

Description: The applicable optic trade agreement for this optic catalogue item.

Example:

<ApplicableOpticTradeAgreement>

…

</ApplicableOpticTradeAgreement>

4.2.1. Orderable indicator

Data Number:

- **For Option = #576 Mandatory Data**

Description: The indicator identifying that the catalogue item may be ordered

Data Type: Boolean

List of values:

- **false**: can't be ordered
- **true**: can be ordered

Example:

<OrderableIndicator>false</OrderableIndicator>

4.2.2. Delivery Lead Measure (Optic Trade Agreement)

Data Number = #332

Optional Element

Can only be used for Combined Lens Range Option

Description: Time required from order to delivery

Data Type: DurationMeasureType

Example:

<DeliveryLeadMeasure unitCode="DAY">3</DeliveryLeadMeasure>
<DeliveryLeadMeasure unitCode="HUR">40</DeliveryLeadMeasure>

In the data dictionary the lead time is expressed in number of days and number of hours "DDHH", the value shall be converted into DurationMeasureType.
Sample:
In data dictionary the value: 0210, (2 days and 10 hour) is equivalent to 58:00:00 (58 hours) in the OPTO v11 ebXML Optic Catalogue.
The max value for a DurationMeasureType is 838:59:59 or 34 days, 22 hours, 59 minutes and 59 seconds.

4.2.3. Applicable Optic Product Characteristic (Optic Trade Agreement)

Optional Element

Example:

<ApplicableOpticProductCharacteristic>

…

</ApplicableOpticProductCharacteristic>

Please consult the OPTO v11 Optic Catalogue – Implementation guide – common parts **for detailed explanation on how to use characteristics.**

Please find below the list of characteristics for the TradeAgreement classes:

TradeAgreement

TradeAgreementClass

No specific characteristic

LensTradeAgreementClass

ID	Name	Mandatory
842	Discount in percent on balanced lens	true

CombinedLensRangeOptionTradeAgreementClass

ID	Name	Mandatory
843	Discount in percent on balanced lens	true

4.2.4. Specified Optic Price Information (Optic Trade Agreement)

Mandatory Element

Can only be used for Lens or Combined Lens Range Option

Description: Prices corresponding to the optic trade agreement.

Example:

```
<SpecifiedOpticPriceInformation>
…
</SpecifiedOpticPriceInformation>
```

4.2.4.1. Specified Optic Price Reference (Optic Price Information)

Description: Code and name Associated to a specified tariff

Optional Element (0..*)

Example:

```
<SpecifiedOpticPriceReference>
…
<SpecifiedOpticPriceReference>

<PriceListReference>
        <PriceListID>SpecialTariffCode</PriceListID>
        <PriceListName languageID="FR">SpecialTariffName</PriceListName>
</PriceListReference>
```

4.2.4.1.1. Identifier

Data Number:

- **For Lens = #646**
- **For Combined Lens Range Option = #658**

Optional Data

Description: The identifier for the Price List

Data Type: Identifier

Example:

<ID>SpecialTariffCode</ID>

4.2.4.1.2. Name

Data Number:

- **For Lens = #657**
- **For Combined Lens Range Option = #659**

Optional Data

Description: Name of the Price List

Data Type: String

Example:

<Name languageID="FR">SpecialTariffName</Name>

4.2.4.2. Assigned Optic Price

Mandatory Data (1..n)

Description: A price amount for the catalogue item

Data Type: OpticPrice

Example:

<AssignedOpticPrice>
…
</AssignedOpticPrice>

4.2.4.2.1. Charge Amount

Data Number for Lens:

- **#214: Mandatory Data**
- **#902: Optional Data**
- **#904: Optional Data**
- **#906: Optional Data**
- **#908: Optional Data**

Data Number for Combined Lens Range Option:

- **#281: Mandatory Data**
- **#911: Optional Data**
- **#913: Optional Data**
- **#915: Optional Data**
- **#917: Optional Data**

Description: The amount of basic price.

Data Type: Amount

Example:

```
<ChargeAmount>312.30</ChargeAmount>
```

4.2.4.2.2. Type Code

Data Number for Lens:

- **#901: Mandatory Data**
- **#903: Optional Data**
- **#905: Optional Data**
- **#907: Optional Data**
- **#909: Optional Data**

Data Number for Combined Lens Range Option:

- **#910: Mandatory Data**
- **#912: Optional Data**
- **#914: Optional Data**
- **#916: Optional Data**
- **#918: Optional Data**

Description: The code specifying the type of basic price.

Data Type: Price Code

List of values:

- **AAA**: purchase price according to standard price list, VAT excluded

  Value only used for #901 and #910
- **AAB**: net purchase price, no end of period back payment and VAT excluded
- **AAC**: net purchase price, VAT excluded
- **AAD**: recommended selling price, VAT included
- **AAE**: minimum recommended selling price, VAT included
- **AAF**: maximum recommended selling price, VAT included
- **AAG**: recommended selling price incl. insurance, VAT included

Example:

```
<TypeCode>AAA</TypeCode>
```

4.2.4.3. Validity Delimited Period

Data Number:

- **For Lens = #655 (Start date) - #611 (End date)**
- **For Combined Lens Range Option = #957 (Start date) - #958 (End date)**

Optional Element

Description: Period of validity of the optic price information.

Data Type: Period

Example:

```
<ValidityDelimitedPeriod>
        <StartDateTime>2008-12-17T00:00:00Z</StartDateTime>
        <EndDateTime>2009-12-17T00:00:00Z</EndDateTime>
</ValidityDelimitedPeriod>
```

This period of validity includes both the first and the last day.

4.2.4.4. Range Type Code

Data Number:

- **For Lens = #205**
- **For Combined Lens Range Option = #265**

Mandatory Data

Description: Range code category

Data Type: RangeCode

List of values:

- **0 : Stock**
- **1 : RX**
- **2 : Out of Manufacturing Range**

<RangeTypeCode>1</RangeTypeCode>

4.2.4.5. Manufacturer Assigned Range Type

Data Number:

- **For Lens = #731**
- **For Combined Lens Range Option = #593**

Mandatory Data

Description: Range Name

Data Type: String

<ManufacturerAssignedRangeType>Stock Chrono</ManufacturerAssignedRangeType>

4.2.4.6. Applicable Optic Product Characteristic (Optic Price Information)

Optional Element

Example:

<ApplicableOpticProductCharacteristic>
…
</ApplicableOpticProductCharacteristic>

Please consult the OPTO v11 Optic Catalogue – Implementation guide – common parts **for detailed explanation on how to use characteristics.**

Please find below the list of characteristics for the PriceInformation classes:

PriceInformation

PriceInformationClass

No specific characteristic

LensPriceInformationClass

ID	Name	Mandatory

207	Diameter	true
208	Sphere start	true
209	Cylinder start	true
211	Sphere end	true
212	Cylinder end	true

CombinedLensRangeOptionPriceInformationClass

ID	Name	Mandatory	Scope
594	Hidden option	false	catalog
266	Mandatory option	false	catalog
267	Included option	false	catalog
595	Electronic ordering	true	catalog
269	UVA absorption	false	catalog
271	UVB absorption	false	catalog
273	Minimal diameter	false	catalog
274	Maximal diameter	false	catalog
275	Minimal sphere	false	catalog
276	Maximal sphere	false	catalog
277	Minimal cylinder	false	catalog
278	Maximal cylinder	false	catalog

4.2.5. Action code

Data Number:

- **For Lens = #841**
- **For Combined Lens Range Option = #262**

Mandatory Data

Description: The code specifying the action for this optic trade agreement.

Data Type: Action Code

List of values:

- **1 :** new, modified
- **2 :** deleted

Example

<ActionCode>1</ActionCode>

Note for point of sale: When you delete a catalogue item you have to delete the item with corresponding Product identification (ProductID, IssuingPartyID and ExtendedProductID)

4.2.6. Last Changed Date Time

Data Number:

- **For Lens = #589**
- **For Combined Lens Range Option = #592**

Mandatory Data

Description: The date of the last change performed on the optic catalogue item trade agreement.

Data Type: Date Time

Example:

<LastChangedDateTime>2009-12-17T00:00:00.0Z</LastChangedDateTime>

4.2.7. Last Ordering Time

Data Number

- **Global value = #414**
- **Value specific for a lens = #695**

Optional Element

Description: The Latest time for ordering in order to ensure the delay is met.

Data Type: Time

Example:

<LastOrderingTime>14:20:00</LastOrderingTime>

In the data dictionary the last ordering time is expressed in number of days and number of hours “DDHH”, the value shall be converted into TimeType.
Sample: In data dictionary the value: 0210, (2 days and 10 hour) is equivalent to 58:00:00 (58 hours) in the OPTO v11 ebXML Optic Catalogue.
The max value for a TimeType is 838:59:59 or 34 days, 22 hours, 59 minutes and 59 seconds.

4.3. Referenced Optic Product (Optic Catalogue Item)

Mandatory Data

Description: The optic product corresponding to the optic catalogue item.

Example:

```
<ReferencedOpticProduct>
…
<ReferencedOpticProduct>
```

4.3.1. Specified Optic Product Identification (Optic Product)

Description: A collection of identifiers for the optic product.

Each product type can be characterized by several identifiers (manufacturer, ordering, and distributor product codes):

- **MF** : Manufacturer product code **Mandatory Data**

  Data Number:

  - **For Lens = #90**
  - **For Option = #128**

- **SA** : Supplier Ordering product code **Mandatory Data**

  Data Number:

  - **For Lens = #91**
  - **For Option = #129**

- **VP** : Distributors product code **Optional Data**

  Data Number:

  - **For Lens = #584**

Example:

```
<SpecifiedOpticProductIdentification>
        <ID schemeID="MF">123</ID></SpecifiedOpticProductIdentification>
```

4.3.2. Name

Data Number:

- **For Lens = #318**
- **For Option = #130**

Mandatory Data (1..*)

Description: Name of product which distinguishes it from other products and if necessary to be used in trade messages such as order and invoice.

Data Type: String

Product names in multiple languages are supported.

Example:

```
<Name languageID="en-us">Name of Product</Name>
```

4.3.3. Short Description (0..*)

Data Number:

- **For Lens = #320**
- **For Option = #170**

Optional Data (0..*)

Description: Short name of the product which distinguishes it from other products and if necessary to be used in trade messages such as order and invoice.

Data Type: String

Short descriptions in multiple languages are supported.

Example:

<ShortDescription languageID="en-us">ProductShortName</ShortDescription>

4.3.4. Applicable Optic CEN Restriction (Optic Product)

Can only be used for Lens and Option

Description: A directive on the restriction of the driver's use of optical products.

Example:

<ApplicableOpticCENRestriction>

…

<ApplicableOpticCENRestriction>

4.3.4.1. Identifier

Mandatory Data

Data Number:

- **For Lens = #523**
- **For Option = #142**

Description: The unique identifier for this CEN restriction.

Data Type: ID

List of values:

- **0**: No restriction
- **1**: Not recommended for driving at night
- **2**: Not recommended for driving

Example:

<ID>0</ID>

4.3.4.2. Category Identifier

Mandatory Data

Data Number:

- **For Lens = #524**
- **For Option = #143**

Description: The unique identifier for the category of this CEN restriction.

Data Type: ID

List of values:

- **0**: Category 0 (80%< Tv <=100%) - Confort

- **1**: Category 1 (43%< Tv <=80%) - Low luminosity
- **2**: Category 2 (18%< Tv <=43%) - Average luminosity
- **3**: Category 3 (8%< Tv <=18%) - High Luminosity
- **4**: Category 4 (3%< Tv <= 8%) - Exceptionnal LuminosityExample :

Example:

```
<CategoryID>0</CategoryID>
```

4.3.5. Multipack Optic Hierarchy Information (Optic Product)

Can only be used for Combined Options, Combined Lens Range Option

Description: Used to describe the products or packages products composed of several products.

Example:

```
<MultiPackOpticHierarchyInformation>
<NextOpticLowerProductLevelInformation>…</NextOpticLowerProductLevelInformation>
<NextOpticLowerProductLevelInformation>…</NextOpticLowerProductLevelInformation>

</MultiPackOpticHierarchyInformation>
```

4.3.5.1. Next Optic Lower Product Level Information (Optic Hierarchy Information)

Mandatory Data (1..n)

Description: This section allows you to specify the identifier of the product (on a certain ID catalogue). You also can fill in the quantity of this product in a pack, in the case of a product mix that quantity is 1.

Example:

```
<NextOpticLowerProductLevelInformation>
        <ID schemeID="MF">123</ID>
        <ActualQuantity unitCode="05">3</ActualQuantity>
        <CatalogueID>12</CatalogueID>

</NextOpticLowerProductLevelInformation>
```

4.3.5.1.1. Identifier

Data Number:

- **For Combined Options = #256 (Slave Option Code) #257 (Master Option Code)**
- **For Combined Lens Range Option = #263 (Option code) - #264 (Lens Code)**

Mandatory Data

Description: The unique identification of the product contained in an identified product.

Data Type: Product Identification

Example:

```
<ID schemeID="MF">123</ID>
```

4.3.5.1.2. Actual Quantity

Data Number:

- **For Combined Options = NOT IN DICTIONARY**
- **For Combined Lens Range Option = NOT IN DICTIONARY**

Mandatory Data

Description: The quantity of products contained in the product

Data Type: Integer

Example:

```
<ActualQuantity unitCode="05">1</ActualQuantity>
```

4.3.5.1.3. Catalogue Identifier of a product contained in a product

Data Number = NOT IN DICTIONARY

Mandatory Data

Description: The identifier of Catalogue which contains this product

Data Type : Catalogue Identifier

Example :

```
<CatalogueID>12</CatalogueID>
```

4.3.6. Designated Optic Product Classification (Optic Product)

Mandatory Element

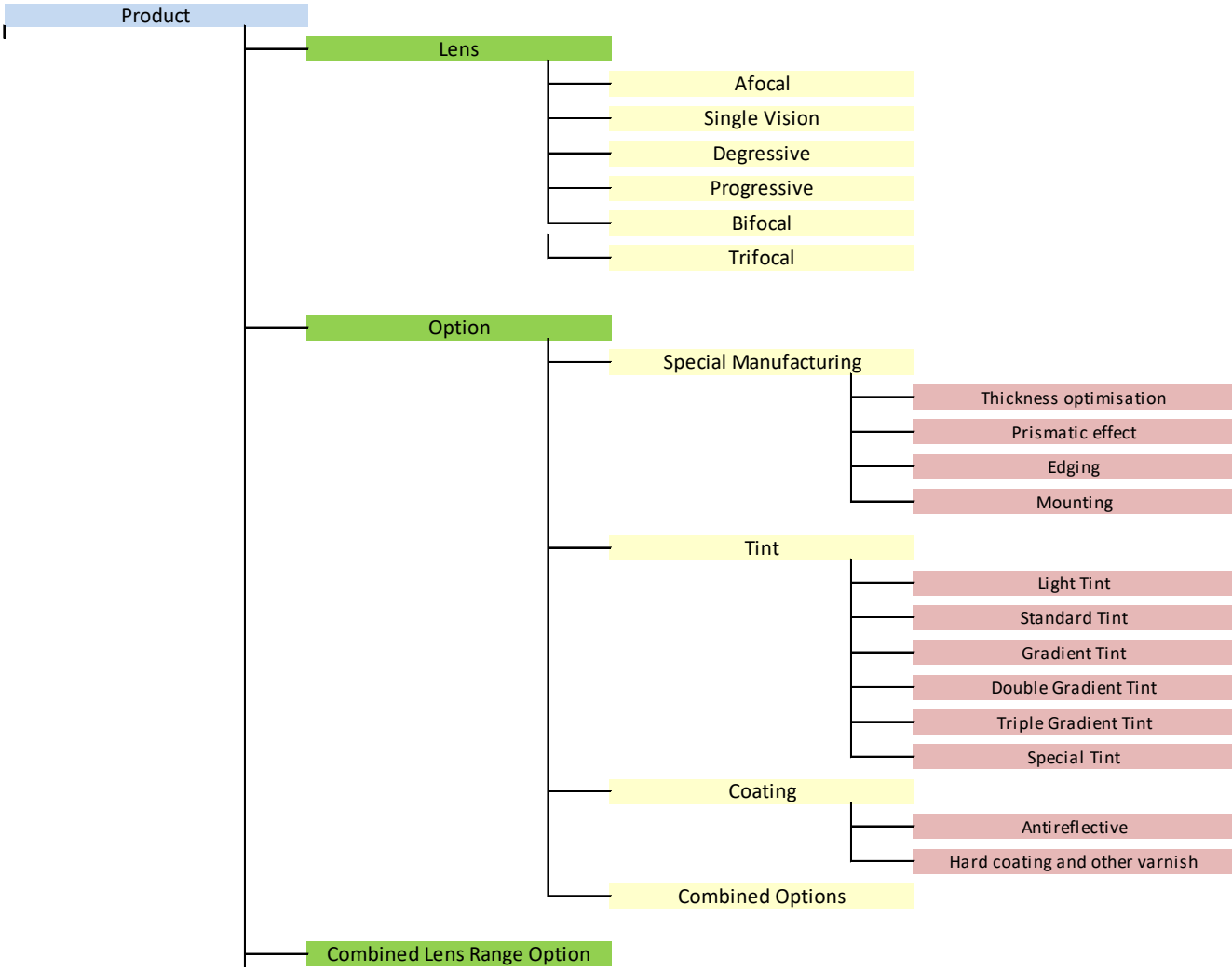
Description: The classification designated for this optical product.

A product can belong to one class only.

Please refer to the *Implementation guide – classification* **and the** *OPTO v11 Optic Catalogue – Implementation guide – common parts* **for detailed information on how to add an optic product classification with characteristics.**

Notes about lens, options and combined lens range option classifications:

Please find below the classification diagram



4.3.6.1. Applicable Optic Product Characteristics (Optic Product Classification)

Optional Data (0..n)

Description: A collection of optical product characteristics.

Please consult the OPTO v11 Optic Catalogue – Implementation guide – classification **for detailed explanation on how to use classifications and characteristics.**

Please find below the list of characteristics for each class of Lens, Option and CombinedLensRangeOption products:

Lens Product

LensClass

ID	Name	Mandatory	Scope
105	Permanent marking	true	catalog
106	Engraved reference circle	true	catalog
108	Signed lens	true	catalog
836	Surface geometry	true	catalog
941	Abbe number (v)	false	catalog
1054	Selective distribution	true	catalog

1065	Lens Refund Class	true	catalog
1072	Type ophthalmic lens for refund	true	catalog

AfocalClass

No specific characteristic

SingleVisionClass

ID	Name	Mandatory	Scope
103	Aphakic Lens	true	catalog

DegressiveClass

ID	Name	Mandatory	Scope
107	Engraved Addition	true	catalog
116	Vertical distance between distance vision center and geometric center	false	catalog
117	Horizontal distance between distance vision center and geometric center	false	catalog
118	Vertical distance between near vision center and geometric center	false	catalog
119	Horizontal distance between near vision center and geometric center	false	catalog
568	Minimal mounting height	true	catalog

ProgressiveClass

ID	Name	Mandatory	Scope
103	Aphakic Lens	true	catalog
107	Engraved Addition	true	catalog
116	Vertical distance between distance vision center and geometric center	true	catalog
117	Horizontal distance between distance vision center and geometric center	true	catalog
118	Vertical distance between near vision center and geometric center	true	catalog
119	Horizontal distance between near vision center and geometric center	true	catalog
568	Minimal mounting height	true	catalog

BifocalClass

ID	Name	Mandatory	Scope
103	Aphakic Lens	true	catalog
115	Near Vision Segment Type	true	catalog
116	Vertical distance between distance vision center and geometric center	true	catalog
117	Horizontal distance between distance vision center and geometric center	true	catalog

118	Vertical distance between near vision center and geometric center	true	catalog
119	Horizontal distance between near vision center and geometric center	true	catalog
120	Lower radius of near vision segment	true	catalog
121	Upper radius of near vision segment radius	true	catalog
522	Near vision segment height	true	catalog
123	Distance between the top line of the near vision segment and the geometric center	true	catalog
568	Minimal mounting height	true	catalog
1057	Visible Segment Edge	true	catalog

TrifocalClass

ID	Name	Mandatory	Scope
103	Aphakic Lens	true	catalog
115	Near Vision Segment Type	true	catalog
116	Vertical distance between distance vision center and geometric center	true	catalog
117	Horizontal distance between distance vision center and geometric center	true	catalog
118	Vertical distance between near vision center and geometric center	true	catalog
119	Horizontal distance between near vision center and geometric center	true	catalog
120	Lower radius of near vision segment	true	catalog
121	Upper radius of near vision segment radius	true	catalog
522	Near vision segment height	true	catalog
123	Distance between the top line of the near vision segment and the geometric center	true	catalog
568	Minimal mounting height	true	catalog
521	Upper radius of intermediate vision segment	true	catalog
122	Intermediate vision segment height	true	catalog
1057	Visible Segment Edge	true	catalog

Option Product

OptionClass

ID	Name	Mandatory	Scope
133	Processing visibility	true	catalog
577	Shall be applied to both lenses	true	catalog

SpecialManufacturingClass

No specific characteristic

SpecialBaseCurveClass
No specific characteristic

BalancingClass
No specific characteristic

ThicknessOptimisationClass

ID	Name	Mandatory	Scope
1048	Thickness Optimization Method	true	catalog

PrismaticEffectClass
No specific characteristic

EdgingClass
No specific characteristic

MountingClass
No specific characteristic

OtherSpecialManufacturingClass
No specific characteristic

TintClass

ID	Name	Mandatory	Scope
136	Photochromic filter	true	catalog
846	Absorption (lens top)	true	catalog
848	RGB value red (lens top)	true	catalog
849	RGB value green (lens top)	true	catalog
850	RGB value blue (lens top)	true	catalog

LightTintClass
No specific characteristic

StandardTintClass
No specific characteristic

GradientTintClass
No specific characteristic

DoubleGradientTintClass

ID	Name	Mandatory	Scope
847	Absorption (lens bottom)	true	catalog
854	RGB value red (lens bottom)	true	catalog
855	RGB value green (lens bottom)	true	catalog
856	RGB value blue (lens bottom)	true	catalog

TripleGradientTintClass

ID	Name	Mandatory	Scope
847	Absorption (lens bottom)	true	catalog
851	RGB value red (lens center)	true	catalog
852	RGB value green (lens center)	true	catalog
853	RGB value blue (lens center)	true	catalog
854	RGB value red (lens bottom)	true	catalog
855	RGB value green (lens bottom)	true	catalog
856	RGB value blue (lens bottom)	true	catalog

SpecialTintClass

No specific characteristic

CoatingClass

ID	Name	Mandatory	Scope
940	Mirror effect	true	catalog
1047	Flash effect	true	catalog
1058	Antifog	true	catalog
1059	Blue Light Cut	true	catalog
1060	Antiglare	true	Catalog
137	Hard coating	true	catalog
138	Clean coating	true	catalog
139	UV filter front-side	true	catalog
1068	UV filter back-side	true	catalog
647	Polarized filter	true	catalog
726	Hydrophobic	true	catalog
1069	Contact angle	true	catalog

AntireflectiveClass

ID	Name	Mandatory	Scope
134	Type of antireflective coating	true	catalog

VarnishClass

No specific characteristic

CombinedOptionClass

No specific characteristic

Combined Lens Range Option Product

CombinedLensRangeOptionClass

ID	Name	Mandatory	Scope
596	Control code	false	catalog
1067	Lens / Option association category	false	catalog

4.3.7. Composed Optic Material (Optic Product)

Optional Element

Can only be used for Lens

Description: The material of the optical product.

Example:

```
<ComposedOpticMaterial>
…
</ComposedOpticMaterial>
```

4.3.7.1. Identifier

Data Number = #835

Mandatory Data

Description: Product Material Code

Data Type: Identifier

Example:

```
<ID>1</ID>
```

4.3.7.2. Applicable Optic Product Characteristic (Optic Material)

Optional Data (0..n)

Description: A collection of optical material characteristic which compose the optical product.

Characteristics are described in the abstract Material Class and related child classes. (OpticClassifications.xml)

Please consult the OPTO v11 Optic Catalogue – Implementation guide – common parts **for detailed explanation on how to use characteristics.**

Please find below the list of characteristics for each the Material and LensMaterial classes:

Material Property

MaterialClass
No specific characteristic

LensMaterialClass

ID	Name	Mandatory	Scope
835	Ophthalmic lens base material	true	catalog
939	Ophthalmic lens base material description	false	catalog
97	Refractive index	true	catalog
98	Density	false	catalog

99	Alpha cut	false	catalog
100	UVA absorption	false	catalog
101	UVB absorption	false	catalog
113	Contains titanium	true	catalog
1056	Effective refractive index	True	catalog
1054	Selective distribution	True	catalog

4.3.8. Specified Optic Manufacturing Table (Optic Product)

Mandatory Element (1..n)

Can only be used for Lens

Description: The manufacturing table (s) of optic product

Example:

<SpecifiedOpticManufacturingTable>

…

</SpecifiedOpticManufacturingTable>

4.3.8.1. Range Type Code

Data Number = #181

Mandatory Data

Description: Range code category

Data Type: RangeCode

List of values:

- **0 : Stock**
- **1 : RX**
- **2 : Out of Manufacturing Range**

<RangeTypeCode>1</RangeTypeCode>

4.3.8.2. Manufacturer Assigned Range Type

Data Number = #182

Mandatory Data

Description: Range Name

Data Type: String

<ManufacturerAssignedRangeType>Stock Chrono</ManufacturerAssignedRangeType>

4.3.8.3. Action code

Data Number = #200

Mandatory Data

Description: The code specifying the action for this optic manufacturing table.

Data Type: Action Code

List of values:

- **1 :** new, modified
- **2 :** deleted

Example

<ActionCode>1</ActionCode>

Note for point of sale: When you delete a catalogue item you have to delete the item with corresponding Product identification (ProductID, IssuingPartyID and ExtendedProductID)

4.3.8.4. Last Changed Date Time

Data Number = #578

Mandatory Data

Description: The date of the last change performed on the optic catalogue item manufacturing table.

Data Type: Date Time

Example:

<LastChangedDateTime>2009-12-17T00:00:00Z</LastChangedDateTime>

4.3.8.5. Validity Delimited Period

Data Number = #608 (start date) - #648 (end date)

Optional Element

Description: Period of validity of the optic manufacturing table.

Data Type: Period

Example:

```
<ValidityDelimitedPeriod>
        <StartDateTime>2001-12-17T00:00:00Z</StartDateTime>
        <EndDateTime>2002-12-17T00:00:00Z</EndDateTime>
</ValidityDelimitedPeriod>
```

This period of validity includes both the first and the last day.

4.3.8.6. Sequence Number

Data Number = #188

Mandatory Data

Description: Manufacturing range sequence number

Data Type: Integer

Example:

<SequenceNumeric>4</SequenceNumeric>

4.3.8.7. Applicable Optic Product Characteristic (Optic Manufacturing Table)

Optional Data (0..n)

Description: A technical property of the manufacturing table

Characteristics are described in the abstract Manufacturing Table Class. (OpticClassifications.xml)

Note: To define a manufacturing table with points you have to use PointsManufacturingTableClass.

To define a manufacturing table with a file you have to use FileManufacturingTableClass.

All Manufacturing Table Elements have to be defining with the same method (file or points)

For more information on the coding of Optic Manufacturing Tables, please refer to chapter 12, Coding of manufacturing tables.

Please consult the OPTO v11 Optic Catalogue – Implementation guide – common parts **for detailed explanation on how to use characteristics.**

Please find below the list of characteristics for each the ManufacturingTable classes:

Manufacturing Table Property

ManufacturingTableClass

ID	Name	Mandatory	Scope
183	Automated processing	true	catalog
184	Electronic ordering	true	catalog
185	Nominal diameter dn (Purchasing diameter)	true	catalog
186	Effective diameter de (Physical diameter)	true	catalog
187	EDI ordering code for the diameter	true	catalog
579	Elliptic height	false	catalog
197	Usable diameter du	false	catalog
649	Control code	false	catalog
840	Balance lens availability	true	catalog
1066	Lens Refund Class on this manufacturing Range	true	catalog

AfocalLensManufacturingTableClass
No specific characteristic

PointAfocalLensManufacturingTableClass
No specific characteristic

FileAfocalLensManufacturingTableClass
No specific characteristic

SingleVisionLensManufacturingTableClass
No specific characteristic

PointSingleVisionLensManufacturingTableClass

ID	Name	Mandatory	Scope
189	Point 1: sphere	true	catalog
190	Point 1: cylinder	true	catalog
191	Point 2: sphere	true	catalog
192	Point 3: sphere	true	catalog
193	Point 3: cylinder	true	catalog
194	Point 4: sphere	true	catalog
663	Manufacturing range step	true	catalog

PointAfocalLensManufacturingTableClass

ID	Name	Mandatory	Scope
839	Manufacturing range file name	true	catalog

DegressiveLensManufacturingTableClass

ID	Name	Mandatory	Scope
195	Minimal addition	false	catalog
196	Maximal addition	false	catalog

838	Addition step	false	catalog

PointDegressiveLensManufacturingTableClass

ID	Name	Mandatory	Scope
189	Point 1: sphere	true	catalog
190	Point 1: cylinder	true	catalog
191	Point 2: sphere	true	catalog
192	Point 3: sphere	true	catalog
193	Point 3: cylinder	true	catalog
194	Point 4: sphere	true	catalog
663	Manufacturing range step	true	catalog

PointDegressiveLensManufacturingTableClass

ID	Name	Mandatory	Scope
839	Manufacturing range file name	true	catalog

ProgressiveLensManufacturingTableClass

ID	Name	Mandatory	Scope
195	Minimal addition	true	catalog
196	Maximal addition	true	catalog
838	Addition step	true	catalog

PointProgressiveLensManufacturingTableClass

ID	Name	Mandatory	Scope
189	Point 1: sphere	true	catalog
190	Point 1: cylinder	true	catalog
191	Point 2: sphere	true	catalog
192	Point 3: sphere	true	catalog
193	Point 3: cylinder	true	catalog
194	Point 4: sphere	true	catalog
663	Manufacturing range step	true	catalog

PointProgressiveLensManufacturingTableClass

ID	Name	Mandatory	Scope
839	Manufacturing range file name	true	catalog

BifocalLensManufacturingTableClass

ID	Name	Mandatory	Scope
195	Minimal addition	true	catalog
196	Maximal addition	true	catalog
838	Addition step	true	catalog

PointBifocalLensManufacturingTableClass

ID	Name	Mandatory	Scope
189	Point 1: sphere	true	catalog

190	Point 1: cylinder	true	catalog
191	Point 2: sphere	true	catalog
192	Point 3: sphere	true	catalog
193	Point 3: cylinder	true	catalog
194	Point 4: sphere	true	catalog
663	Manufacturing range step	true	catalog

PointBifocalLensManufacturingTableClass

ID	Name	Mandatory	Scope
839	Manufacturing range file name	true	catalog

TrifocalLensManufacturingTableClass

ID	Name	Mandatory	Scope
195	Minimal addition	true	catalog
196	Maximal addition	true	catalog
838	Addition step	true	catalog

PointTrifocalLensManufacturingTableClass

ID	Name	Mandatory	Scope
189	Point 1: sphere	true	catalog
190	Point 1: cylinder	true	catalog
191	Point 2: sphere	true	catalog
192	Point 3: sphere	true	catalog
193	Point 3: cylinder	true	catalog
194	Point 4: sphere	true	catalog
663	Manufacturing range step	true	catalog

PointTrifocalLensManufacturingTableClass

ID	Name	Mandatory	Scope
839	Manufacturing range file name	true	catalog

Note that the data 839 is of ValuePictureType. A sample could be:

<ValuePicture>
<DigitalImageBinaryObject encodingCode="7" filename="Filename.jpeg" mimeCode="image/jpeg">UjBsR09EbGhjZ0dTQUxNQUFBUUNBRU1tQ1p0dU1GUXhEUzhi</DigitalImageBinaryObject>
</ValuePicture>

The DigitalImageBinaryObject element is a binary picture. It shall be encoded using the Base64 algorithm.

W3C Link: http://www.w3.org/TR/xmlschema-2/#base64Binary

Wikipedia Link: http://en.wikipedia.org/wiki/Base64

4.3.8.8. Delivery Lead Time

Data Number = #198

Optional Data

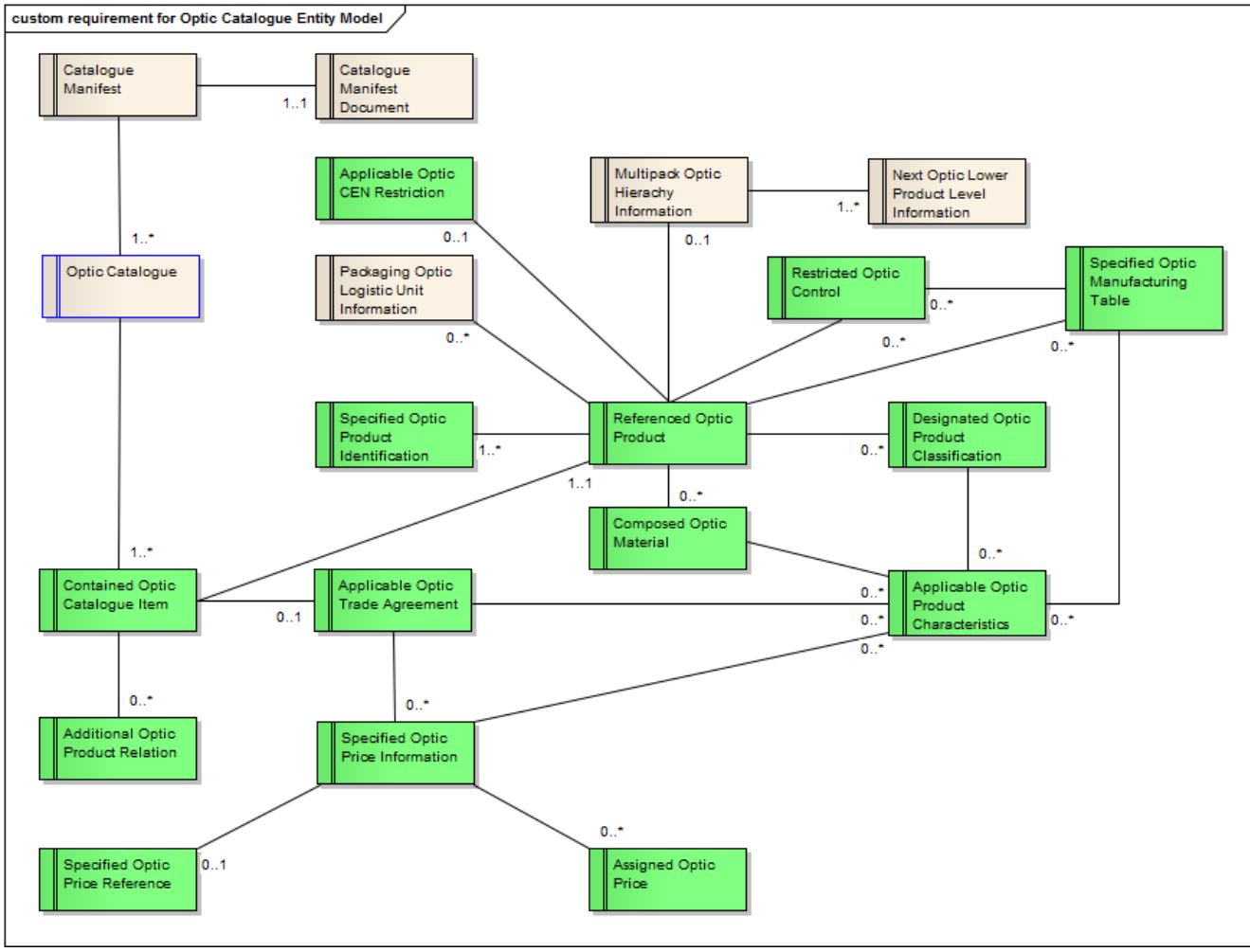
Description: Time required from order to delivery for the products corresponding to the current manufacturing Table.

Data Type: DurationMeasureType

Example:

<DeliveryLeadMeasure>14:20:00</DeliveryLeadMeasure>

5. How to add a lens to a catalogue



Elements in green shall be used to add a lens to a catalogue.

Data located in Functional Group 11 (in the lens catalogue data dictionary) are mapped into elements of the OpticCatalogueItem object and of the OpticProduct object, including ProductIdentification, ProductMaterial, ProductClass and Properties.

To characterize the lens product, it is necessary to identify the right Class in the OpticClassifications.xml file. To do so, drill down the lens class into the subclasses. Classes and subclasses define which of the properties are mandatory.

For example:

In case the lens populated is a Trifocal lens, the Product class code (see §4.3.6) shall take the value "TrifocalClass". According to the definition of this class, the "Upper radius of intermediate vision segment" is mandatory. It is defined in the data dictionary as the data #521 and it shall be mapped

into the XML document into the Property Value Quantity (see §4.3.6.1) where the Property Code is 521.

Similarly the Class hierarchy defined in the OpticClassifications.xml file defines properties of the ProductMaterialClass (see §4.3.7.2).

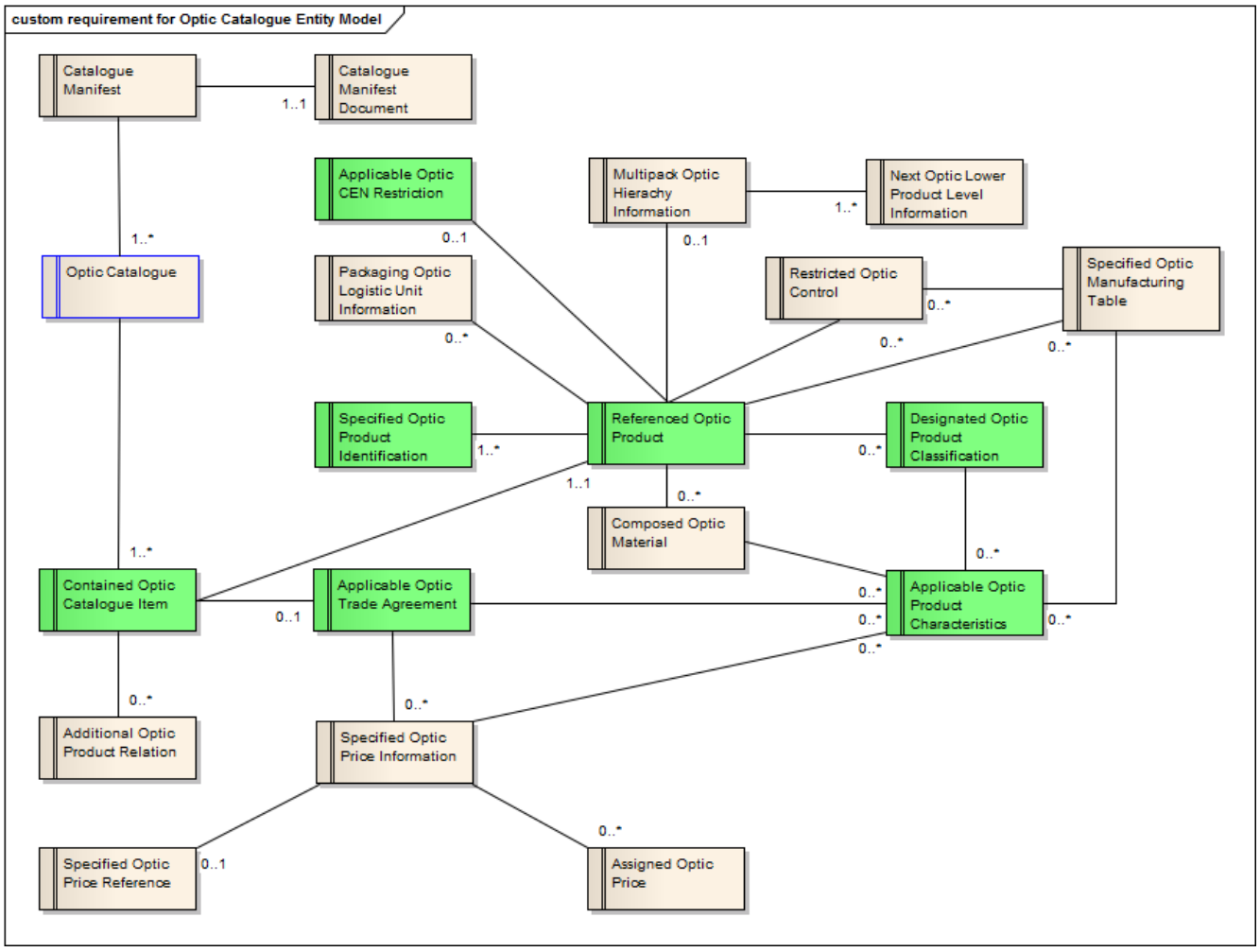
Data located in Functional Group 13 (in the lens catalogue data dictionary) are mapped into elements of the Manufacturing Table object. Once again the Class hierarchy defined in the OpticClassifications.xml file defines properties of the ManufacturingTableClass (see §4.3.8.7).

Data located in Functional Group 14 (in the lens catalogue data dictionary) are mapped into elements of the Optic Trade Agreement object and of the Optic PriceInformation object.

Mandatory properties associated to the Optic Trade Agreement object and of the Optic PriceInformation object are defined in the TradeAgrementClass and in the PriceInformationClass.

Data located in Functional Group 99 (in the lens catalogue dictionary data) are mapped into the Control object (associated to the Manufacturing Table object).

6. How to add an option to a catalogue



Elements in green shall be used to add a lens to a catalogue.

Data located in Functional Group 12 (in the lens catalogue data dictionary) are mapped into the OpticCatalogueItem object and into the OpticProduct object (ProductIdentification, ProductClass)

To characterize the option product, it is necessary to identify the right Class in the OpticClassifications.xml file. To do so, drill down the Option class into the subclasses. Classes and subclasses define which of the properties are mandatory.

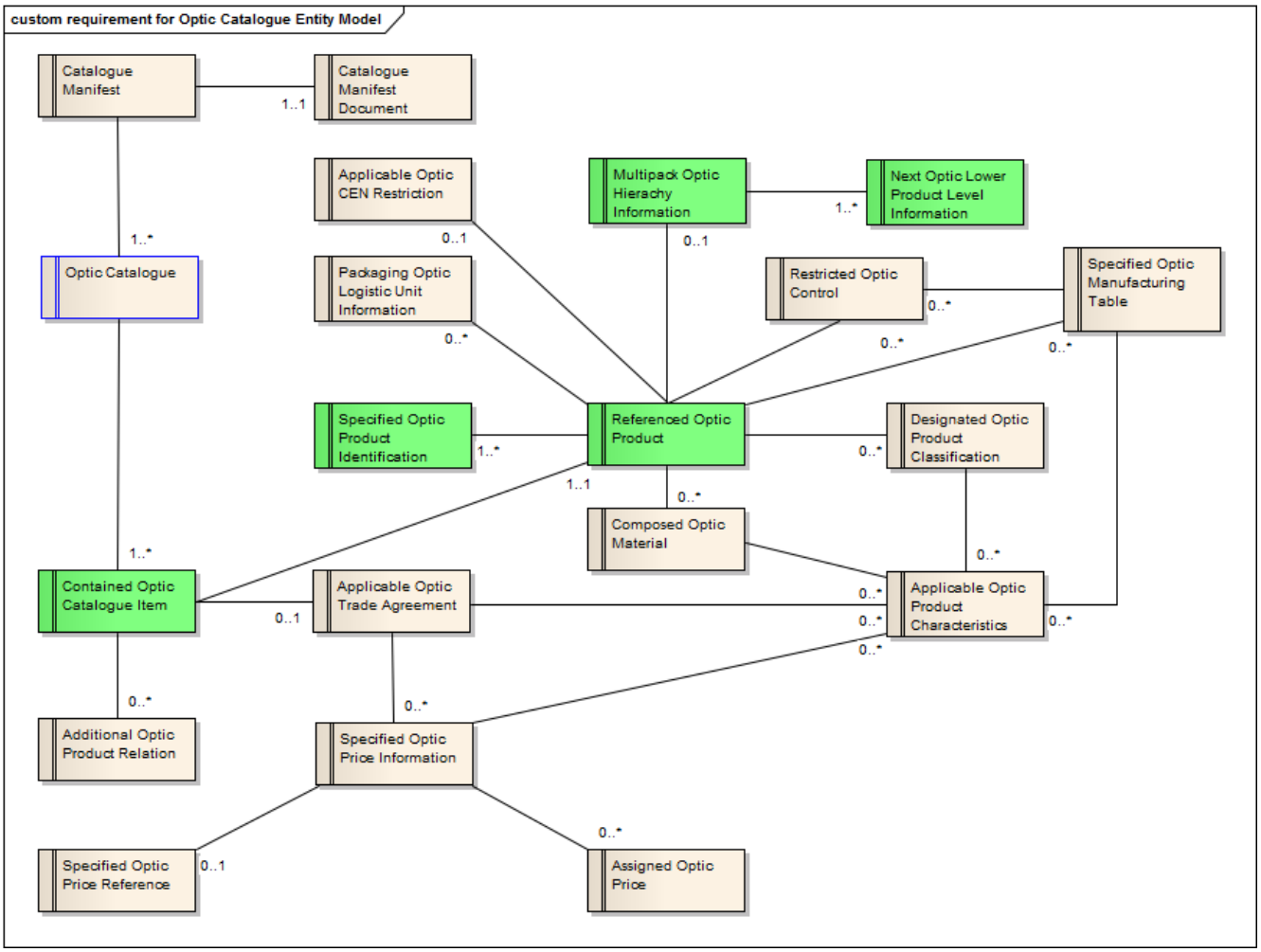
For example:

In case the option populated is a standard antireflective coating, the Product class code (see §7.5.6.3) shall take the value "AntireflectiveClass". According to the definition of this class, the "Type of antireflective coating" is mandatory. It is defined in the data dictionary as the data #134 and it shall be mapped into the XML document into the Property Value Code (see §7.5.11.8) where the property Code is 134.

Data located in Functional Group 15 (in the lens catalogue data dictionary) are mapped into the AdditonalProductRelation object within the OpticCatalogueItem object. This allows to declare incompatibility between options.

Data located in Functional Group 15 (in the lens catalogue data dictionary) are mapped into the OpticCatalogueItem object and in the OpticProduct object (ProductIdentification, HierachyInformation). This allows to define combination of multiples options.

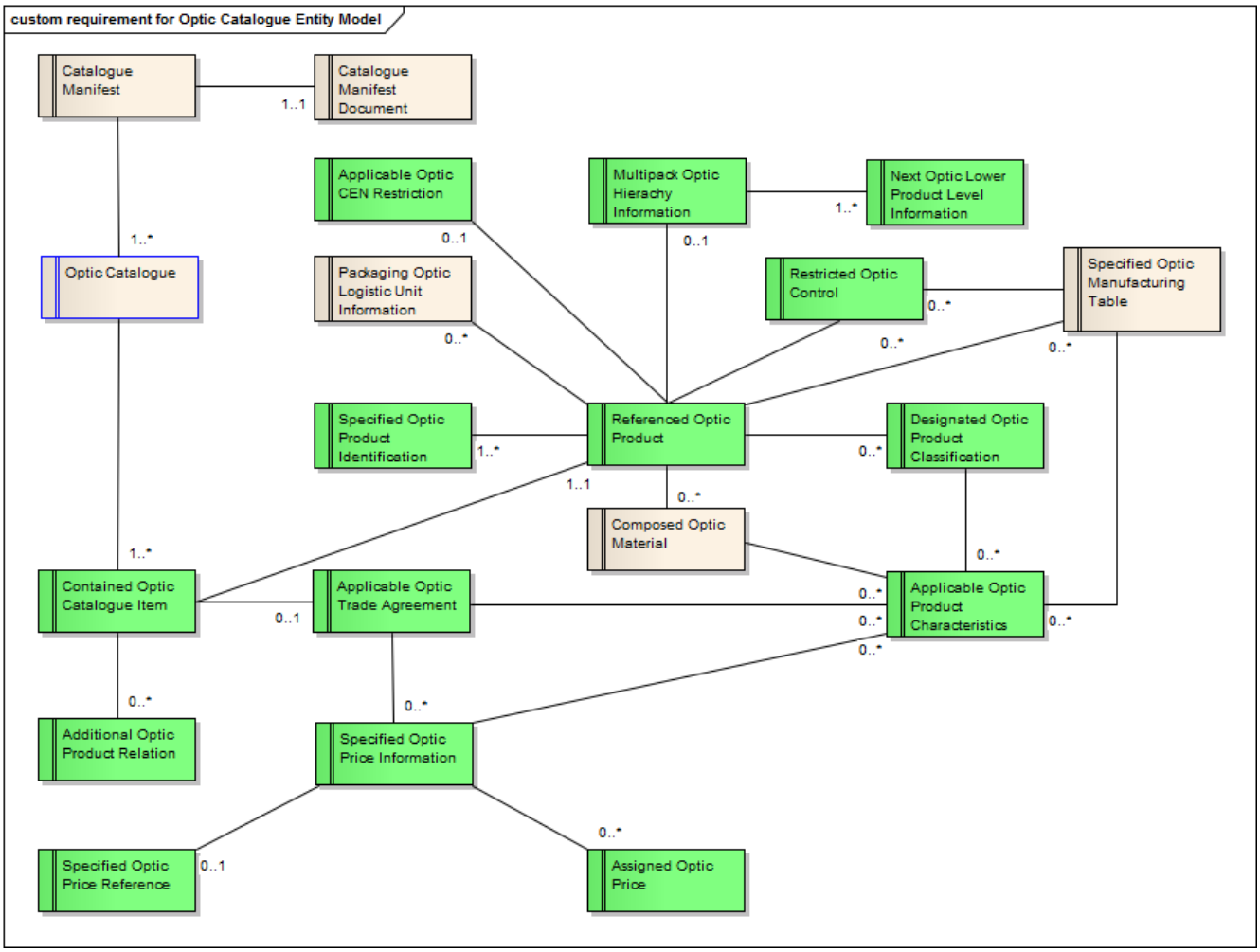
7. How to combine multiples options



Elements in green shall be used to create a combination of multiple options within a lens catalogue.

Data located in Functional Group 16 (in the lens catalogue data dictionary) are mapped into the OpticCatalogueItem object and in the OpticProduct object (ProductIdentification, HierachyInformation)

8. How to combine an option and a lens range



Elements in green shall be used to create a combination of multiple options within a lens catalogue.

Data located in Functional Group 17 (in the lens catalogue data dictionary) are mapped into the OpticCatalogueItem object, in the OpticTradeAgreement object and in the OpticProduct object (ProductIdentification, ProductClass, HazardousInformation and Hierarchy Information).

9. How to add control to a Manufacturing Table

To add control to a manufacturing table you have to use the control object linked to a manufacturing table. This control is attached to a specific manufacturing line for a lens. The lens catalogue data defines how to specify the control.

10. How to add control to a Combined Lens Range Option

To add a control for a Combined Lens range option you have to use the control object linked to the OpticProduct object defined for the combination itself. The lens catalogue data defines how to specify the control.

11. How to simplify the description of incompatibilities between options in using Combined Option

Combined Option Class can be used to simplify the incompatibility between options.

As an example, a tint option “Red” may not be compatible with all other applicable tint options such as “Blue”, “Green” and “Yellow”. As a standard procedure, in the tint option “Red” each of the options it is incompatible with shall be declared as “incomptabile” (see §4.1.6 “additional product relation”). As a result, “Blue”, “Green”, “Yellow”, etc shall be added to the “additional product relation”. This shall be repeated for each of the tints.

The best way to manage incompatibility between tint options is to define a Combined Option Product which contains all the tint options. This product has a name (for example “Tint Options”) and a code, it contains all the tint options code (see §4.3.5 Multipack Optic Hierarchy Information).

Then in the Red tint optionit is enough to declare that ”Red” is incompatible with the Combined Option product “Tint Options”. The same method can obviously be used for other type of options which are incompatible between them..

12. Coding of manufacturing tables

12.1. Point based lens manufacturing table

12.2. File based lens manufacturing table

The manufacturing grid files format is based on the BMP format in single color and without compression. The following sections explain how to interpret this format.

The BMP file contains the following blocks of data:

BMP File Header	Stores general information about the BMP file.
Bitmap Information (DIB header)	Stores detailed information about the bitmap image.
Palette	Stores the color palette
Bitmap Data	Stores the actual image, pixel by pixel.

BMP File Header

This block of bytes is at the start of the file and is used to identify the file. A application reads this block first to ensure that the file is not damaged and to identify the minimal sphere and minimal cylinder. The first two bytes of the BMP file format are the character 'B' then the character 'M' in 1-byte ascii encoding. All of the integer values are stored in little-endian format (i.e. least-significant byte first), unless explicitly noted.

Offset#	Size	Purpose
0000h	2 bytes	the magic number used to identify the BMP file: BM (Hex. 42 4D).
0002h	4 bytes	the size of the BMP file in bytes
0006h	2 bytes	Minimal sphere in 0.01 diopter (signed integer)
0008h	2 bytes	Maximal cylinder in 0.01 diopter (signed integer)
000Ah	4 bytes	Starting address, of the byte where the bitmap data can be found (Hex. 3E 00 00 00)

Bitmap Information (DIB header)

For compatibility reasons the manufacturing grid uses the V3 header. See next table for its description. All values are stored as unsigned integers, unless explicitly noted.

Offset #	Size	Purpose
Eh	4	the size of this header: 40 bytes (Hex. 28 00 00 00)
12h	4	the bitmap width in pixels (signed integer).
16h	4	the bitmap height in pixels (signed integer).
1Ah	2	the number of color planes being used. Must be set to 1 (Hex. 01 00).
1Ch	2	the number of bits per pixel, which is the color depth of the image. Must be set to 1 (Hex. 01 00).
1Eh	4	the compression method being used. Must be set to 0 (Hex. 00 00 00 00).
22h	4	the image size. Unused, must be set to 0 (Hex. 00 00 00 00).
26h	4	the horizontal resolution of the image in pixel per meter. Must be set to 11 808 (Hex. 20 2E 00 00)
2Ah	4	the vertical resolution of the image in pixel per meter Must be set to 11 808 (Hex. 20 2E 00 00)
2Eh	4	the number of colors in the color palette. Must be set to 0 (hex
32h	4	the number of important colors used. Must be set to 0.

Palette

The palette is not used. It always takes the following value :

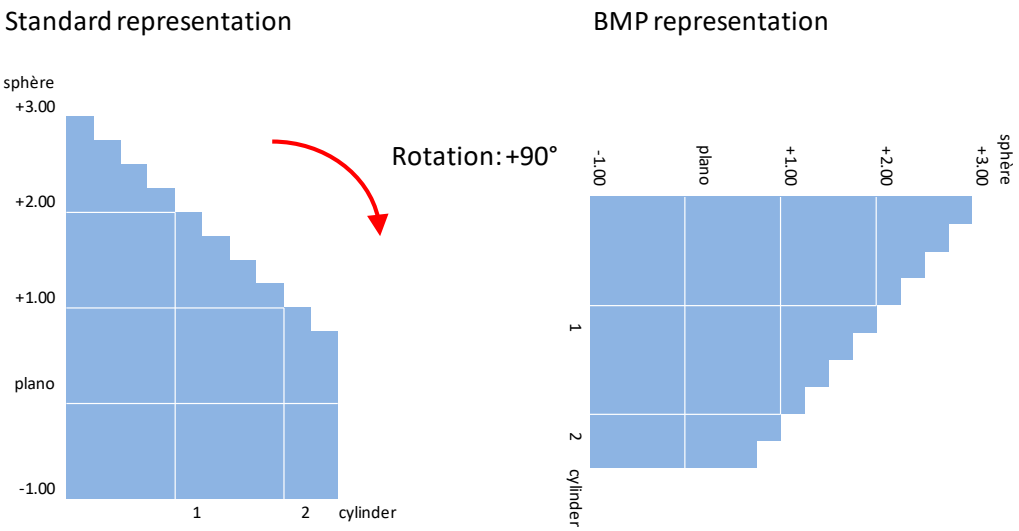
Offset #	Size	Purpose
36h	8	FF FF FF 00 00 00 00 00

Bitmap data

This block of bytes describes the image/manufacturing, bit by bit starting in the lower left corner, going from left to right, and then row by row from the bottom to the top of the image/grid.

Please note that :

- Grid steps are defined in the lens catalogue itself
- Addition ranges are defined in the lens catalogue itself
- the usual representation of the grid shall be rotated by 90°. Lower left corner in the left shall correspond to the lower sphere and the highest cylinder.



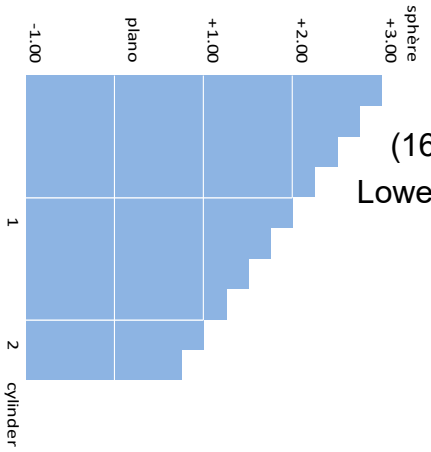
This approach reduces the size of the file as in all cases, each row of pixels shall be extended to a 32-bit (4-byte) boundary, filling with 0, so that the next row will start on a multiple-of-four byte location. The total number of bytes in a row can be calculated as the *image size/bitmap height in pixels.*

Bit values shall be interpreted as follows:

- « 0 » bit means that the point is outside the manufacturing grid
- « 1 » bit means that the point is within the manufacturing grid.

Example

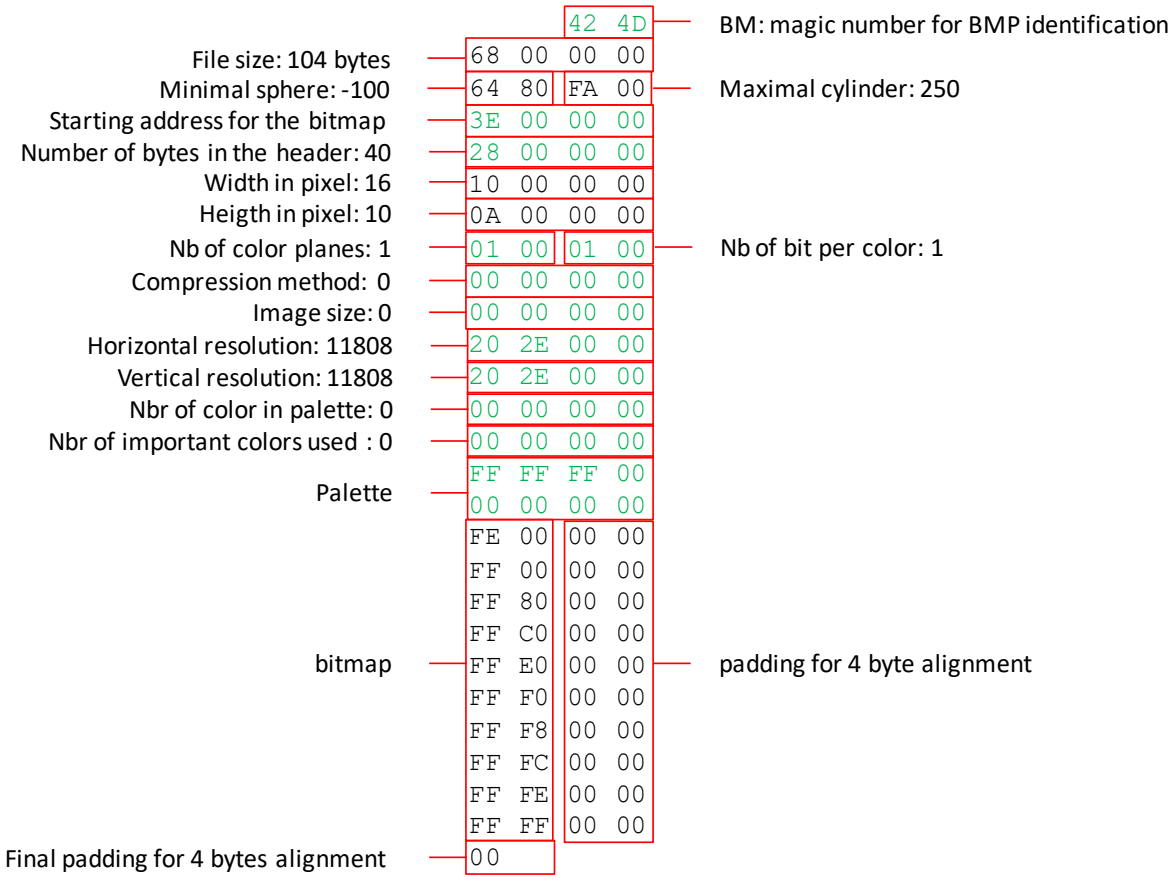
The following manufacturing grid :



(16 pixel wide and 10 pixel high)

Lower left corner: sphere= -1.00, cylinder=+2.50

is expressed as follows in an hexadecimal file:



Please note that values in green will never change from one file to another.