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**Digital Imaging and Communications in Medicine (DICOM)**

*Supplement 247: Eyecare Measurement Templates*

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## Scope and Field of Application

This Supplement proposes to add templates, context groups, and coded vocabulary for key eyecare measurements to the Standard. These templates may be used in either Structured Reporting documents, or for structured content in an Encapsulated PDF object.

60 The focus of this Supplement is the set of "key" measurements clinically important for patient care. These are not intended to be a comprehensive set of ophthalmic measurements, although the extensible context groups and templates allow additional measurements beyond the specified key measurements to be included in SOP Instances.

65 The key measurements of this Supplement are primarily derived from analysis of images, in particular retinal optical coherence tomography (OCT) images. Note that there are several existing IODs that record measurements directly produced by various refractive devices that do not produce images (autorefractometry, lensometry, keratometry, etc.), as well as more comprehensive visual field and macular thickness reports, which are not intended to be replaced by these more summary key measurement templates.

The IHE Eyecare domain defined within the Unified Eye Care Workflow Profile (as a draft for trial implementation) an option for Key Measurements in DICOM Encapsulated PDF  
70 [\[https://www.ihe.net/uploadedFiles/Documents/Eye\\_Care/IHE\\_EyeCare\\_Suppl\\_Key\\_Measurement\\_PDF.pdf\]](https://www.ihe.net/uploadedFiles/Documents/Eye_Care/IHE_EyeCare_Suppl_Key_Measurement_PDF.pdf). That option specified templates, context groups, and coded vocabulary for various key measurements in ophthalmology to be encoded as structured content within Encapsulated PDF objects. WG-09 has determined that those content specifications should be formalized in the DICOM Standard, and that work informed the draft  
75 of this Supplement.

Some vocabulary may be submitted to LOINC for assignment of codes.

### SR and Encapsulated PDF

There is tension in clinical documentation between the needs for structured discrete data and human-readable content. In DICOM, discrete data is generally sent using Structured Reporting, and ready for display rendered  
80 data may be sent in an Encapsulated PDF. A given set of measurements may be sent in objects in both formats, with cross-reference to the other object using the Referenced Instance Sequence (0008,114A); note that the cross-reference is to an instance as a whole, not to individual measurements. Alternatively, discrete measurements may be included in an Encapsulated PDF object in the SR-like Content Sequence (0040,A730). The Templates defined in this Supplement may be used in either object type. Note that use of the TABLE  
85 Content Item type in an SR document requires the use of the Extensible SR Storage SOP Class.

The DICOM Standard does not recommend the use of any particular approach to meet the clinical documentation needs of the users. Such recommendations may be made by a professional society or a standards profiling effort. For example, the American Academy of Ophthalmology and the IHE Eyecare domain, considering the need to integrate legacy PDF-based systems, have in the past recommended use of  
90 Encapsulated PDF with the included SR-like Content Sequence for basic interoperability (see [https://www.aaojournal.org/article/S0161-6420\(21\)00164-0/fulltext](https://www.aaojournal.org/article/S0161-6420(21)00164-0/fulltext)), but those recommendations may not meet all use cases in the evolving interoperable healthcare IT environment.

PS3.6

95

Add new Context Group UIDs to PS3.6 Annex A

| Table A-3. Context Group UID Values |                          |                                            |         |
|-------------------------------------|--------------------------|--------------------------------------------|---------|
| Context Group UID                   | Context Group Identifier | Context Group Name                         | Comment |
| <u>1.2.840.10008.6.1.x1</u>         | <u>CID 42x1</u>          | <u>Visual Field Measurements</u>           |         |
| <u>1.2.840.10008.6.1.x2</u>         | <u>CID 42x2</u>          | <u>Optic Disc Key Measurements</u>         |         |
| <u>1.2.840.10008.6.1.xa</u>         | <u>CID 42xa</u>          | <u>Retinal Sector Methods</u>              |         |
| <u>1.2.840.10008.6.1.x3</u>         | <u>CID 42x3</u>          | <u>RNFL Sector Measurements</u>            |         |
| <u>1.2.840.10008.6.1.xb</u>         | <u>CID 42xb</u>          | <u>RNFL Clockface Measurements</u>         |         |
| <u>1.2.840.10008.6.1.x4</u>         | <u>CID 42x4</u>          | <u>Macular Thickness Key Measurements</u>  |         |
| <u>1.2.840.10008.6.1.x5</u>         | <u>CID 42x5</u>          | <u>Ganglion Cell Measurement Extent</u>    |         |
| <u>1.2.840.10008.6.1.x6</u>         | <u>CID 42x6</u>          | <u>Ganglion Cell Key Measurements</u>      |         |
| <u>1.2.840.10008.6.1.x7</u>         | <u>CID 42x7</u>          | <u>Ganglion Cell Sector Measurements</u>   |         |
| <u>1.2.840.10008.6.1.x8</u>         | <u>CID 42x8</u>          | <u>Ganglion Cell Sector Methods</u>        |         |
| <u>1.2.840.10008.6.1.y0</u>         | <u>CID 42y0</u>          | <u>Endothelial Cell Count Measurements</u> |         |
| <u>1.2.840.10008.6.1.y1</u>         | <u>CID 42y1</u>          | <u>Ophthalmic Image ROI Measurements</u>   |         |

100

PS3.16

*New Template for generic encoding of ratios with explicit numerator and denominator*

**TID 30x Ratio**

This template allows encoding of numeric ratios with explicit numerator and denominator. The Container concept name (with modifiers) is equivalent to the numeric measurement concept name of TID 300, and uses the same parameter names.

105

Note Compare to FHIR Ratio DataType <https://www.hl7.org/fhir/datatypes.html#Ratio>

**Table TID 30x.a. Parameters**

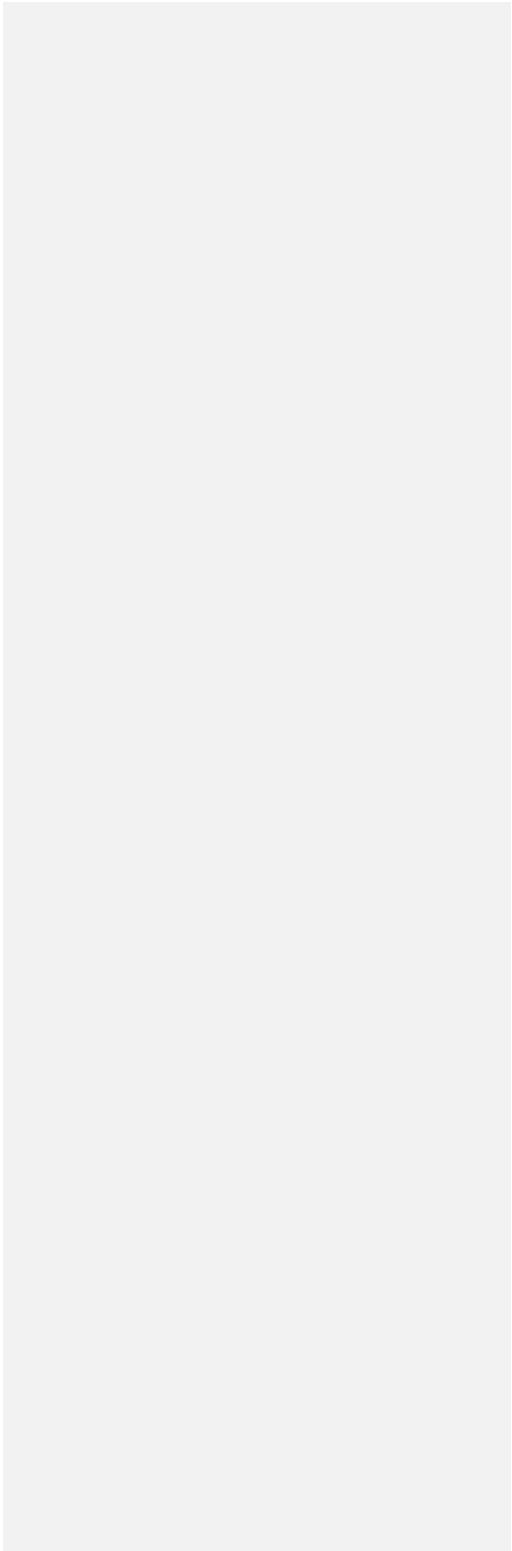
| Parameter Name   | Parameter Usage                                                                           |
|------------------|-------------------------------------------------------------------------------------------|
| \$Measurement    | Coded term or Context Group for Concept Name of ratio                                     |
| \$ModType        | Modifier Name for Concept Name of ratio                                                   |
| \$ModValue       | Modifier Value for Concept Name of ratio                                                  |
| \$NumUnits       | Numerator units of measurement                                                            |
| \$DenomUnits     | Denominator units of measurement                                                          |
| \$RefAuthority   | Bibliographic reference or authority for statistical properties of a reference population |
| \$RangeAuthority | Bibliographic reference or authority for the normal range of the measurement              |

Type: Extensible  
Order: Significant  
Root: No

110

**Table TID 30x. Ratio**

|   | NL | Rel with Parent | VT        | Concept Name                                      | VM  | Req Type | Condition | Value Set Constraint                                                   |
|---|----|-----------------|-----------|---------------------------------------------------|-----|----------|-----------|------------------------------------------------------------------------|
| 1 |    |                 | CONTAINER | \$Measurement                                     | 1   | M        |           |                                                                        |
| 2 | >  | HAS CONCEPT MOD | CODE      | \$ModType                                         | 1-n | U        |           | \$ModValue                                                             |
| 3 | >  | CONTAINS        | NUM       | (1000x0, DCM, "Numerator")                        | 1   | M        |           | UNITS = \$NumUnits                                                     |
| 4 | >  | CONTAINS        | NUM       | (1000x1, DCM, "Denominator")                      | 1   | M        |           | UNITS = \$DenomUnits                                                   |
| 5 | >  | CONTAINS        | INCLUDE   | <a href="#">DTID 310 "Measurement Properties"</a> | 1   | U        |           | \$RefAuthority = \$RefAuthority<br>\$RangeAuthority = \$RangeAuthority |
| 6 | >  | HAS OBS CONTEXT | INCLUDE   | <a href="#">DTID 4108 "Tracking Identifier"</a>   | 1   | U        |           |                                                                        |



115 Update TID 4019 PS3.16 Annex A with Item from TID 2102

**TID 4019 Algorithm Identification**

This Template details the algorithm unambiguously. Re-state the software identification from the [General Equipment Module](#) of the SR IOD if all algorithms are unambiguously defined by that Module.

120 Type: Non-Extensible  
Order: Significant  
Root: No

**Table TID 4019. Algorithm Identification**

|    | NL | Rel with Parent | VT   | Concept Name                                                 | VM  | Req Type | Condition | Value Set Constraint |
|----|----|-----------------|------|--------------------------------------------------------------|-----|----------|-----------|----------------------|
| 1  |    |                 | TEXT | EV ( <a href="#">111001, DCM, "Algorithm Name"</a> )         | 1   | M        |           |                      |
| 1b |    |                 | CODE | EV ( <a href="#">111001, DCM, "Algorithm Name"</a> )         | 1   | U        |           |                      |
| 2  |    |                 | TEXT | EV ( <a href="#">111003, DCM, "Algorithm Version"</a> )      | 1   | M        |           |                      |
| 2b |    |                 | TEXT | EV ( <a href="#">122405, DCM, "Algorithm Manufacturer"</a> ) | 1   | U        |           |                      |
| 3  |    |                 | TEXT | EV ( <a href="#">111002, DCM, "Algorithm Parameters"</a> )   | 1-n | U        |           |                      |
| 4  |    |                 | CODE | EV ( <a href="#">111000, DCM, "Algorithm Family"</a> )       | 1   | U        |           |                      |

125 **Content Item Descriptions**

|        |                                                                                                                                                                                                                |
|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Row 1  | May be the same as the Manufacturer's Model Name (0008,1090) of the <a href="#">General Equipment Module</a> , if the Algorithm is not distinguishable from the body of software that makes up the Equipment.  |
| Row 2  | May be the same as Software Versions (0018,1020) of the <a href="#">General Equipment Module</a> , if the latter is a single Value, or its multiple Values are combined into a single TEXT Content Item Value. |
| Row 2b | <b>May be the same as the Manufacturer (0008,0070) of the <a href="#">General Equipment Module</a>.</b>                                                                                                        |

New templates for PS3.16 Annex A

130 **TID 60x1 Ophthalmology Measurements Group**

This Template is a proper subset of [TID 1501](#), with some optional extensions, and may be processed by a receiving application in the same way. The parameters used in this Template are identical to those parameters as used in TID 1501. However, this Template is specialized for ophthalmology (finding site "Eye"), and makes mandatory a Content Item for each measurement or finding concept specified in the invoking Template in the

135 Context Groups invoked for the \$Measurement parameter. (TID 1501 has no mandatory content.)

**Table TID 60x1.a. Parameters**

| Parameter Name  | Parameter Usage                                                        |
|-----------------|------------------------------------------------------------------------|
| \$TargetSiteMod | Value for Anatomic Location of measurement                             |
| \$Method        | Value for Measurement Method                                           |
| \$Measurement   | Coded term or Context Group for Concept Name of mandatory measurements |
| \$OptMeasure    | Coded term or Context Group for Concept Name of optional measurements  |
| \$TableName     | Coded term for Concept Name of a table of measurements                 |

140 Type: Extensible  
Order: Non-Significant  
Root: No

**Table TID 60x1. Ophthalmology Measurements Group**

|   | NL | Rel with Parent | VT        | Concept Name                                                    | VM | Req Type | Condition                                                          | Value Set Constraint                                    |
|---|----|-----------------|-----------|-----------------------------------------------------------------|----|----------|--------------------------------------------------------------------|---------------------------------------------------------|
| 1 |    | CONTAINS        | CONTAINER | EV ( <a href="#">125007, DCM, "Measurement Group"</a> )         | 1  | M        |                                                                    |                                                         |
| 2 | >  | HAS CONCEPT MOD | CODE      | EV ( <a href="#">363698007, SCT, "Finding Site"</a> )           | 1  | M        |                                                                    | EV ( <a href="#">81745001, SCT, "Eye"</a> )             |
| 3 | >> | HAS CONCEPT MOD | CODE      | EV ( <a href="#">272741003, SCT, "Laterality"</a> )             | 1  | M        |                                                                    | DCID 247 " <a href="#">Laterality Left-Right Only</a> " |
| 4 | >> | HAS CONCEPT MOD | CODE      | EV ( <a href="#">106233006, SCT, "Topographical modifier"</a> ) | 1  | MC       | IFF Template is invoked with a non-empty \$TargetSiteMod parameter | \$TargetSiteMod                                         |
| 5 | >  | HAS CONCEPT MOD | CODE      | EV ( <a href="#">370129005, SCT, "Measurement Method"</a> )     | 1  | MC       | IFF Template is invoked with a non-empty \$Method parameter        | \$Method                                                |

|    | NL | Rel with Parent | VT        | Concept Name                                                   | VM  | Req Type | Condition                                                                                       | Value Set Constraint                                         |
|----|----|-----------------|-----------|----------------------------------------------------------------|-----|----------|-------------------------------------------------------------------------------------------------|--------------------------------------------------------------|
| 6  | >  | HAS OBS CONTEXT | CODE      | EV ( <a href="#">418775008 SCT, "Finding Method"</a> )         | 1   | MC       | IFF measurements made with ROI or sector grid positioned differently from prior analyses        | EV (nnn110, DCM, "Repositioned ROI or grid")                 |
| 7  | >  | HAS OBS CONTEXT | INCLUDE   | DTID 4108 <a href="#">"Tracking Identifier"</a>                | 1   | U        |                                                                                                 |                                                              |
| 8  | >  | CONTAINS        | INCLUDE   | DTID 300 <a href="#">"Measurement"</a>                         | 1-n | MC       | IFF Template is invoked with a non-empty \$Measurement parameter (see Content Item Description) | \$Measurement = \$Measurement                                |
| 9  | >  | CONTAINS        | INCLUDE   | DTID 300 <a href="#">"Measurement"</a>                         | 1-n | U        |                                                                                                 | \$Measurement = \$OptMeasure                                 |
| 10 | >  | CONTAINS        | TABLE     | \$TableName                                                    | 1   | U        |                                                                                                 |                                                              |
| 11 | >  | CONTAINS        | IMAGE     | EV ( <a href="#">121112, DCM, "Source of Measurement"</a> )    | 1-n | U        |                                                                                                 |                                                              |
| 12 | >  | CONTAINS        | NUM       | EV ( <a href="#">111694, DCM, "Image Set Quality Rating"</a> ) | 1   | UC       | XOR Row 12                                                                                      | UNITS = EV ({0:100}, UCUM, "range:0:100")<br>Value = 0 - 100 |
| 13 | >  | CONTAINS        | CODE      | EV ( <a href="#">111101, DCM, "Image Quality"</a> )            | 1   | UC       | XOR Row 11                                                                                      | <a href="#">BCID 3114 Study Quality</a>                      |
| 14 | >  | CONTAINS        | IMAGE     | EV ( <a href="#">130401, DCM, "Visual explanation"</a> )       | 1   | U        |                                                                                                 |                                                              |
| 15 | >  | CONTAINS        | COMPOSITE | EV ( <a href="#">130401, DCM, "Visual explanation"</a> )       | 1   | U        |                                                                                                 |                                                              |
| 16 | >  | CONTAINS        | TEXT      | EV ( <a href="#">121106, DCM, "Comment"</a> )                  | 1   | U        |                                                                                                 |                                                              |

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#### Content Item Descriptions

|       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Row 8 | <p>Mandatory numeric findings of the measurement group.</p> <p>Each Concept specified in the Value Set Constraints (i.e., as specified in the invoking Template \$Measurement parameter) shall be encoded in a NUM Content Item. Thus if there are eight concepts in the specified Context Group, eight NUM Content Items in accordance with TID 300 will be present. Note that the NUM Content Item allows an absent value with an associated reason code per <a href="#">CID 42</a>, e.g., (114007, DCM, "Measurement not attempted").</p> |
|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|             | TID 300 Measurement defines an optional capability to specify properties of a measurement via <a href="#">TID 310 Measurement Properties</a> . TID 310 supports properties such as normality, statistical properties (through subsidiary <a href="#">TID 311</a> ), normal ranges (subsidiary <a href="#">TID 312</a> ), level of significance and more. Normality flags are highly useful and commonly provided by implementations. |
| Row 9       | Optional numeric measurements of the measurement group.                                                                                                                                                                                                                                                                                                                                                                              |
| Row 10      | Optional table of numeric measurements of the measurement group.                                                                                                                                                                                                                                                                                                                                                                     |
| Row 11      | Reference to the original image(s), e.g., Ophthalmic Tomography, that provided the data analyzed to produce the measurements in this group.                                                                                                                                                                                                                                                                                          |
| Rows 12, 13 | A numeric (row 12) or categorical (row 13) rating of the quality of the source images for the purpose of producing the measurements in this group.                                                                                                                                                                                                                                                                                   |
| Rows 14, 15 | May be a reference to a Secondary Capture Image (row 14) or Encapsulated PDF (row 15) rendering of the set of measurements and findings encoded in this Measurement Group, and possibly additional data.                                                                                                                                                                                                                             |

### TID 60x2 Visual Field Key Measurements

150 Type: Extensible  
Order: Non-Significant  
Root: Yes

Table TID 60x2 Visual Field Key Measurements

|   | NL  | Rel with Parent | VT        | Concept Name                                                         | VM  | Req Type | Condition | Value Set Constraint                                  |
|---|-----|-----------------|-----------|----------------------------------------------------------------------|-----|----------|-----------|-------------------------------------------------------|
| 1 |     |                 | CONTAINER | EV (nnn100, DCM, "Visual Field Key Measurements")                    | 1   | M        |           |                                                       |
| 2 | >   | HAS CONCEPT MOD | INCLUDE   | <a href="#">DTID 1204 "Language of Content Item and Descendants"</a> | 1   | U        |           |                                                       |
| 3 | >   | HAS OBS CONTEXT | INCLUDE   | <a href="#">DTID 1002 "Observer Context"</a>                         | 1-n | U        |           |                                                       |
| 4 | >   | HAS OBS CONTEXT | INCLUDE   | <a href="#">DTID 4019 Algorithm Identification</a>                   | 1   | U        |           |                                                       |
| 5 | >   | CONTAINS        | CONTAINER | EV ( <a href="#">125007, DCM, "Measurement Group"</a> )              | 1-n | M        |           |                                                       |
| 6 | >>  | HAS CONCEPT MOD | CODE      | <a href="#">EV (363698007, SCT, "Finding Site")</a>                  | 1   | M        |           | EV ( <a href="#">81745001, SCT, "Eye"</a> )           |
| 7 | >>> | HAS CONCEPT MOD | CODE      | EV ( <a href="#">272741003, SCT, "Laterality"</a> )                  | 1   | M        |           | <a href="#">DCID 247 "Laterality Left-Right Only"</a> |

|    | NL | Rel with Parent | VT      | Concept Name                                               | VM | Req Type | Condition             | Value Set Constraint                                                                                                                                                           |
|----|----|-----------------|---------|------------------------------------------------------------|----|----------|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8  | >> | HAS CONCEPT MOD | CODE    | EV ( <a href="#">370129005 SCT, "Measurement Method"</a> ) | 1  | M        |                       | <a href="#">DCID 4250 Visual Field Static Perimetry Test Pattern</a>                                                                                                           |
| 9  | >> | HAS ACQ CONTEXT | CODE    | EV ( <a href="#">246501002 SCT, "Technique"</a> )          | 1  | M        |                       | <a href="#">DCID 4251 Visual Field Static Perimetry Test Strategy</a>                                                                                                          |
| 10 | >> | HAS OBS CONTEXT | INCLUDE | <a href="#">DTID 4108 "Tracking Identifier"</a>            | 1  | U        |                       |                                                                                                                                                                                |
| 11 | >> | CONTAINS        | INCLUDE | <a href="#">DTID 300 "Measurement"</a>                     | 1  | M        |                       | \$Measurement = EV (nnn200, DCM, "Visual Field Global Deviation from Normal")<br>\$Units=EV(dB, UCUM, "dB")                                                                    |
| 12 | >> | CONTAINS        | INCLUDE | <a href="#">DTID 300 "Measurement"</a>                     | 1  | M        |                       | \$Measurement = EV (nnn201, DCM, "Visual Field Localized Deviation From Normal")<br>\$Units=EV(dB, UCUM, "dB")                                                                 |
| 13 | >> | CONTAINS        | INCLUDE | <a href="#">DTID 300 "Measurement"</a>                     | 1  | U        |                       | \$Measurement = <a href="#">BCID 42x1 Visual Field Measurements</a>                                                                                                            |
| 14 | >> | CONTAINS        | INCLUDE | <a href="#">DTID 30x "Ratio"</a>                           | 1  | MC       | IF Row 15 not present | \$Measurement = (nnn202, DCM, "Fixation false positive ratio")<br>\$NumUnits = EV ({false positives}, UCUM, "false positives")<br>\$DenomUnits = EV ({trials}, UCUM, "trials") |
| 15 | >> | CONTAINS        | INCLUDE | <a href="#">DTID 300 "Measurement"</a>                     | 1  | MC       | IF Row 14 not present | \$Measurement = (nn202a, DCM, "Fixation false positive percent")<br>\$Units=EV(%, UCUM, "%")                                                                                   |
| 16 | >> | CONTAINS        | INCLUDE | <a href="#">DTID 30x "Ratio"</a>                           | 1  | MC       | IF Row 17 not present | \$Measurement = (nnn203, DCM, "Fixation false negative ratio")<br>\$NumUnits = EV ({false negatives}, UCUM, "false negatives")<br>\$DenomUnits = EV ({trials}, UCUM, "trials") |
| 17 | >> | CONTAINS        | INCLUDE | <a href="#">DTID 300 "Measurement"</a>                     | 1  | MC       | IF Row 16 not present | \$Measurement = (nn203a, DCM, "Fixation false negative percent")<br>\$Units=EV(%, UCUM, "%")                                                                                   |

|    | NL | Rel with Parent | VT        | Concept Name                                                           | VM | Req Type | Condition | Value Set Constraint                                                                                                                                                   |
|----|----|-----------------|-----------|------------------------------------------------------------------------|----|----------|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 18 | >> | CONTAINS        | INCLUDE   | <a href="#">DTID 30x "Ratio"</a>                                       | 1  | M        |           | \$Measurement = (nnn204, DCM, "Fixation losses ratio")<br>\$NumUnits = EV ({fixation losses}, UCUM, "fixation losses")<br>\$DenomUnits = EV ({trials}, UCUM, "trials") |
| 19 | >> | CONTAINS        | CODE      | EV ( <a href="#">111855, DCM, "Glaucoma Hemifield Test Analysis"</a> ) | 1  | U        |           | <a href="#">DCID 4254, Visual Field Static Perimetry Test Analysis Result</a>                                                                                          |
| 20 | >> | CONTAINS        | COMPOSITE | EV ( <a href="#">121112, DCM, "Source of Measurement"</a> )            | 1  | U        |           |                                                                                                                                                                        |
| 21 | >> | CONTAINS        | IMAGE     | EV ( <a href="#">130401, DCM, "Visual explanation"</a> )               | 1  | U        |           |                                                                                                                                                                        |
| 22 | >> | CONTAINS        | COMPOSITE | EV ( <a href="#">130401, DCM, "Visual explanation"</a> )               | 1  | U        |           |                                                                                                                                                                        |
| 23 | >> | CONTAINS        | TEXT      | EV ( <a href="#">121106, DCM, "Comment"</a> )                          | 1  | U        |           |                                                                                                                                                                        |

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#### Content Item Descriptions

|             |                                                                                                                                                                                                          |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Row 5       | For example, the Measurement Group CONTAINER may be instantiated once for each eye, or multiple times for a trend series for a single eye.                                                               |
| Row 20      | May be a reference to an Ophthalmic Visual Field Static Perimetry Measurements SOP Instance.                                                                                                             |
| Rows 21, 22 | May be a reference to a Secondary Capture Image (row 21) or Encapsulated PDF (row 22) rendering of the set of measurements and findings encoded in this Measurement Group, and possibly additional data. |

#### TID 60x3 Optic Disc Key Measurements

160 Type: Extensible  
Order: Non-Significant  
Root: Yes

Table TID 60x3 Optic Disc Key Measurements

|   | NL | Rel with Parent | VT        | Concept Name                                    | VM | Req Type | Condition | Value Set Constraint |
|---|----|-----------------|-----------|-------------------------------------------------|----|----------|-----------|----------------------|
| 1 |    |                 | CONTAINER | EV (nnn101, DCM, "Optic Disc Key Measurements") | 1  | M        |           |                      |

|   | NL | Rel with Parent | VT      | Concept Name                                                         | VM  | Req Type | Condition | Value Set Constraint                                                  |
|---|----|-----------------|---------|----------------------------------------------------------------------|-----|----------|-----------|-----------------------------------------------------------------------|
| 2 | >  | HAS CONCEPT MOD | INCLUDE | <a href="#">DTID 1204 "Language of Content Item and Descendants"</a> | 1   | U        |           |                                                                       |
| 3 | >  | HAS OBS CONTEXT | INCLUDE | <a href="#">DTID 1002 "Observer Context"</a>                         | 1-n | U        |           |                                                                       |
| 4 | >  | HAS OBS CONTEXT | INCLUDE | <a href="#">DTID 4019 Algorithm Identification</a>                   | 1   | M        |           |                                                                       |
| 5 | >  | CONTAINS        | INCLUDE | <a href="#">DTID 60x1 "Ophthalmology Measurements Group"</a>         | 1-n | M        |           | \$Measurement = <a href="#">DCID 42x2 Optic Disc Key Measurements</a> |

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#### Content Item Descriptions

|       |                                                                                                                |
|-------|----------------------------------------------------------------------------------------------------------------|
| Row 5 | For example, TID 60x1 may be invoked once for each eye, or multiple times for a trend series for a single eye. |
|-------|----------------------------------------------------------------------------------------------------------------|

#### TID 60x4 Circumpapillary Retinal Nerve Fiber Layer Key Measurements

170 Type: Extensible  
Order: Non-Significant  
Root: Yes

Table TID 60x4 Circumpapillary Retinal Nerve Fiber Layer Key Measurements

|   | NL | Rel with Parent | VT        | Concept Name                                                                   | VM  | Req Type | Condition | Value Set Constraint                                                                                                |
|---|----|-----------------|-----------|--------------------------------------------------------------------------------|-----|----------|-----------|---------------------------------------------------------------------------------------------------------------------|
| 1 |    |                 | CONTAINER | EV (nnn102, DCM, "Circumpapillary Retinal Nerve Fiber Layer Key Measurements") | 1   | M        |           |                                                                                                                     |
| 2 | >  | HAS CONCEPT MOD | INCLUDE   | <a href="#">DTID 1204 "Language of Content Item and Descendants"</a>           | 1   | U        |           |                                                                                                                     |
| 3 | >  | HAS OBS CONTEXT | INCLUDE   | <a href="#">DTID 1002 "Observer Context"</a>                                   | 1-n | U        |           |                                                                                                                     |
| 4 | >  | HAS OBS CONTEXT | INCLUDE   | <a href="#">DTID 4019 Algorithm Identification</a>                             | 1   | M        |           |                                                                                                                     |
| 5 | >  | CONTAINS        | INCLUDE   | <a href="#">DTID 60x1 "Ophthalmology Measurements Group"</a>                   | 1-n | U        |           | \$Method = <a href="#">DCID 42xa Retinal Sector Methods</a><br>\$Measurement = EV(nnn410, DCM, "Retinal ROI width") |

|   | NL | Rel with Parent | VT      | Concept Name                                                 | VM  | Req Type | Condition                                         | Value Set Constraint                                                                                                         |
|---|----|-----------------|---------|--------------------------------------------------------------|-----|----------|---------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
|   |    |                 |         |                                                              |     |          |                                                   | \$OptMeasurement = <a href="#">DCID 42x3 RNFL Sector Measurements</a>                                                        |
| 6 | >  | CONTAINS        | INCLUDE | <a href="#">DTID 60x1 "Ophthalmology Measurements Group"</a> | 1-n | U        |                                                   | \$Method = EV(nnn565, DCM, "RNFL Clockface Method")<br>\$Measurement = <a href="#">DCID 42xb RNFL Clockface Measurements</a> |
| 7 | >  | CONTAINS        | INCLUDE | <a href="#">DTID 300 "Measurement"</a>                       | 1   | MC       | IFF RNFL thickness measurements made on both eyes | \$Measurement = (nnn409, DCM, "Retinal nerve fiber layer symmetry")<br>\$Units = (% , UCUM, "%")                             |

175

#### Content Item Descriptions

|       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Row 5 | <p>For example, TID 60x1 may be invoked once for each eye, or multiple times for a trend series for a single eye.</p> <p>Applications also use various approaches to identifying different sectors of the retina when measuring the RNFL thickness. The sector definition used is specified by a concept from <a href="#">CID 42xa Retinal Sector Methods</a>. Measurements that match the sector names defined by the method may be selected from <a href="#">CID 42x3 RNFL Sector Measurements</a> to be included in the key measurements.</p> <p>Receiving applications are cautioned about comparing or aggregating measurements from measurement groups with different ROI areas or sector methods.</p> |
|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

#### TID 60x5 Macular Thickness Key Measurements

180 The macular grid used for the measurements of this template is based upon the grid employed by the Early Treatment of Diabetic Retinopathy Study (ETDRS) to measure area and proximity of macular edema to the anatomic center (fovea) of the macula. See [ETDRS Report Number 10](#).

Type: Extensible  
Order: Non-Significant  
185 Root: Yes

Table TID 60x5 Macular Thickness Key Measurements

|   | NL | Rel with Parent | VT        | Concept Name                                                         | VM | Req Type | Condition | Value Set Constraint |
|---|----|-----------------|-----------|----------------------------------------------------------------------|----|----------|-----------|----------------------|
| 1 |    |                 | CONTAINER | EV (nnn103, DCM, "Macular Thickness Key Measurements")               | 1  | M        |           |                      |
| 2 | >  | HAS CONCEPT MOD | INCLUDE   | <a href="#">DTID 1204 "Language of Content Item and Descendants"</a> | 1  | U        |           |                      |

|   | NL | Rel with Parent | VT      | Concept Name                                                 | VM  | Req Type | Condition | Value Set Constraint                                                         |
|---|----|-----------------|---------|--------------------------------------------------------------|-----|----------|-----------|------------------------------------------------------------------------------|
| 3 | >  | HAS OBS CONTEXT | INCLUDE | <a href="#">DTID 1002 "Observer Context"</a>                 | 1-n | U        |           |                                                                              |
| 4 | >  | HAS OBS CONTEXT | INCLUDE | <a href="#">DTID 4019 Algorithm Identification</a>           | 1   | M        |           |                                                                              |
| 5 | >  | CONTAINS        | INCLUDE | <a href="#">DTID 60x1 "Ophthalmology Measurements Group"</a> | 1-n | M        |           | \$Measurement = <a href="#">DCID 42x4 Macular Thickness Key Measurements</a> |

#### Content Item Descriptions

|       |                                                                                                                |
|-------|----------------------------------------------------------------------------------------------------------------|
| Row 5 | For example, TID 60x1 may be invoked once for each eye, or multiple times for a trend series for a single eye. |
|-------|----------------------------------------------------------------------------------------------------------------|

190

#### TID 60x6 Ganglion Cell Key Measurements

Type: Extensible  
Order: Non-Significant  
Root: Yes

195

Table TID 60x6 Ganglion Cell Key Measurements

|   | NL | Rel with Parent | VT        | Concept Name                                                         | VM  | Req Type | Condition | Value Set Constraint                                                                                                                                                                                                                                                                                                                                                |
|---|----|-----------------|-----------|----------------------------------------------------------------------|-----|----------|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 |    |                 | CONTAINER | EV (nnn104, DCM, "Ganglion Cell Key Measurements")                   | 1   | M        |           |                                                                                                                                                                                                                                                                                                                                                                     |
| 2 | >  | HAS CONCEPT MOD | INCLUDE   | <a href="#">DTID 1204 "Language of Content Item and Descendants"</a> | 1   | U        |           |                                                                                                                                                                                                                                                                                                                                                                     |
| 3 | >  | HAS OBS CONTEXT | INCLUDE   | <a href="#">DTID 1002 "Observer Context"</a>                         | 1-n | U        |           |                                                                                                                                                                                                                                                                                                                                                                     |
| 4 | >  | HAS OBS CONTEXT | INCLUDE   | <a href="#">DTID 4019 Algorithm Identification</a>                   | 1   | M        |           |                                                                                                                                                                                                                                                                                                                                                                     |
| 5 | >  | CONTAINS        | INCLUDE   | <a href="#">DTID 60x1 "Ophthalmology Measurements Group"</a>         | 1-n | M        |           | \$TargetSiteMod = <a href="#">DCID 42x5 Ganglion Cell Measurement Extent</a><br>\$Method = <a href="#">DCID 42x8 Ganglion Cell Sector Methods</a><br>\$Measurement = <a href="#">DCID 42x6 Ganglion Cell Key Measurements</a><br>\$OptMeasure = <a href="#">DCID 42x7 Ganglion Cell Sector Measurements</a><br>\$TableName = DT(nnn519, DCM, "Average ganglion cell |

| NL | Rel with Parent | VT | Concept Name | VM | Req Type | Condition | Value Set Constraint               |
|----|-----------------|----|--------------|----|----------|-----------|------------------------------------|
|    |                 |    |              |    |          |           | thickness in posterior pole grid") |

#### Content Item Descriptions

|       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Row 5 | <p>For example, TID 60x1 may be invoked once for each eye, or multiple times for a trend series for a single eye.</p> <p>Methods to measure the Ganglion Cell thickness vary widely. This template requires the SOP Instance creator application to specify which other cell layers, if any, are measured with the Ganglion Cell Layer proper (using a concept from <a href="#">CID 42x5 Ganglion Cell Measurement Extent</a>).</p> <p>Applications also use various methods to identify different sectors of the retina when measuring the Ganglion Cell thickness. The sector definition used is specified by a concept from <a href="#">CID 42x8 Ganglion Cell Sector Methods</a>. Measurements matching the sector names defined by the method may be selected from <a href="#">CID 42x7 Ganglion Cell Sector Measurements</a>. If the sector method uses a rectangular or elliptical ROI, the sector measurements should include both the ROI width and height.</p> <p>If optional measurements using (nnn519, DCM, "Average ganglion cell thickness in posterior pole grid") are present, the SOP Class of the instance must support the TABLE Content Item Value Type (e.g., the Extensible SR Storage SOP Class).</p> <p>Receiving applications are cautioned about comparing or aggregating measurements from measurement groups with different measurement extents or sector methods.</p> |
|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

200

#### TID 60x8 Endothelial Cell Count Key Measurements

Type: Extensible  
Order: Non-Significant  
Root: Yes

205

Table TID 60x8 Endothelial Cell Count Key Measurements

| NL | Rel with Parent | VT              | Concept Name                                                | VM                                                                                    | Req Type | Condition | Value Set Constraint                                                          |
|----|-----------------|-----------------|-------------------------------------------------------------|---------------------------------------------------------------------------------------|----------|-----------|-------------------------------------------------------------------------------|
| 1  |                 | CONTAINER       | EV (nnn106, DCM, "Endothelial Cell Count Key Measurements") | 1                                                                                     | M        |           |                                                                               |
| 2  | >               | HAS CONCEPT MOD | INCLUDE                                                     | <a href="#">D</a> <a href="#">TID 1204 "Language of Content Item and Descendants"</a> | 1        | U         |                                                                               |
| 3  | >               | HAS OBS CONTEXT | INCLUDE                                                     | <a href="#">D</a> <a href="#">TID 1002 "Observer Context"</a>                         | 1-n      | U         |                                                                               |
| 4  | >               | HAS OBS CONTEXT | INCLUDE                                                     | <a href="#">D</a> <a href="#">TID 4019 Algorithm Identification</a>                   | 1        | M         |                                                                               |
| 5  | >               | CONTAINS        | INCLUDE                                                     | <a href="#">D</a> <a href="#">TID 60x1 "Ophthalmology Measurements Group"</a>         | 1-n      | M         | \$Measurement = <a href="#">DCID 42y0 Endothelial Cell Count Measurements</a> |

210 **Content Item Descriptions**

|       |                                                                                                                |
|-------|----------------------------------------------------------------------------------------------------------------|
| Row 5 | For example, TID 60x1 may be invoked once for each eye, or multiple times for a trend series for a single eye. |
|-------|----------------------------------------------------------------------------------------------------------------|

**TID 60x9 Ophthalmic Image ROI Measurements**

215 Type: Extensible  
Order: Non-Significant  
Root: Yes

**Table TID 60x9 Ophthalmic Image ROI Measurements**

|   | NL | Rel with Parent | VT        | Concept Name                                                         | VM  | Req Type | Condition | Value Set Constraint                                       |
|---|----|-----------------|-----------|----------------------------------------------------------------------|-----|----------|-----------|------------------------------------------------------------|
| 1 |    |                 | CONTAINER | EV (nnn107, DCM, "Ophthalmic Image ROI Measurements")                | 1   | M        |           |                                                            |
| 2 | >  | HAS CONCEPT MOD | INCLUDE   | <a href="#">DTID 1204 "Language of Content Item and Descendants"</a> | 1   | U        |           |                                                            |
| 3 | >  | HAS OBS CONTEXT | INCLUDE   | <a href="#">DTID 1002 "Observer Context"</a>                         | 1-n | U        |           |                                                            |
| 4 | >  | HAS OBS CONTEXT | INCLUDE   | <a href="#">DTID 4019 Algorithm Identification</a>                   | 1   | U        |           |                                                            |
| 5 | >  | CONTAINS        | INCLUDE   | <a href="#">DTID 60x1 "Ophthalmology Measurements Group"</a>         | 1-n | M        |           | \$OptMeasure = DCID 42y1 Ophthalmic Image ROI Measurements |

220

**Content Item Descriptions**

|       |                                                                                                                                                                                                                                                                                         |
|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Row 5 | For example, TID 60x1 may be invoked once for each eye, or multiple times for a trend series for a single eye, or multiple times for different classes of measurements.<br>No mandatory key measurements are specified. Creating applications may include any measurements or findings. |
|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Update CID 222 with additional SNOMED normality codes

225

CID 222 Normality

Keyword: Normality  
FHIR Keyword: dicom-cid-222-Normality  
Type: Extensible  
Version: 20170914-2025mmdd  
UID: 1.2.840.10008.6.1.27

230

Table CID 222. Normality

| Coding Scheme Designator | Code Value | Code Meaning            | SNOMED-RT ID | UMLS Concept Unique ID |
|--------------------------|------------|-------------------------|--------------|------------------------|
| SCT                      | 17621005   | Normal                  | G-A460       | C0205307               |
| SCT                      | 263654008  | Abnormal                | R-42037      | C0205161               |
| SCT                      | 371879000  | Abnormally High         | R-002C4      | C1299351               |
| SCT                      | 371880002  | Abnormally Low          | R-002C5      | C1299352               |
| SCT                      | 371934000  | Normality Undetermined  | R-0039B      | C1299401               |
| SCT                      | 442777001  | Borderline high         |              |                        |
| SCT                      | 442779003  | Borderline low          |              |                        |
| SCT                      | 394844007  | Outside reference range |              |                        |
| SCT                      | 281302008  | Above reference range   |              |                        |
| SCT                      | 281300000  | Below reference range   |              |                        |
| SCT                      | 281301001  | Within reference range  |              |                        |

235

New context groups for PS3.16 Annex B

## CID 42x1 Visual Field Measurements

Keyword: VisualFieldMeasurements  
FHIR Keyword: dicom-cid-42x1-VisualFieldMeasurements  
Type: Extensible  
Version: 2025mmdd  
UID: 1.2.840.10008.6.1.x1

Table CID 42x1 Visual Field Measurements

| Coding Scheme Designator | Code Value | Code Meaning                            | Units of Measure |
|--------------------------|------------|-----------------------------------------|------------------|
| DCM                      | 111852     | Visual Field Index                      | (%, UCUM, "%")   |
| DCM                      | 111853     | Visual Field Loss Due to Diffuse Defect | (%, UCUM, "%")   |
| DCM                      | 111854     | Visual Field Loss Due to Local Defect   | (%, UCUM, "%")   |

## CID 42x2 Optic Disc Key Measurements

Keyword: OpticDiscKeyMeasurements  
FHIR Keyword: dicom-cid-42x2-OpticDiscKeyMeasurements  
Type: Non-Extensible  
Version: 2025mmdd  
UID: 1.2.840.10008.6.1.x2

Table CID 42x2 Optic Disc Key Measurements

| Coding Scheme Designator | Code Value | Code Meaning                 | Units of Measure         |
|--------------------------|------------|------------------------------|--------------------------|
| DCM                      | nnn300     | Cup to disc area ratio       | {{ratio}, UCUM, "ratio"} |
| DCM                      | nnn301     | Cup to disc ratio vertical   | {{ratio}, UCUM, "ratio"} |
| DCM                      | nnn302     | Cup to disc ratio horizontal | {{ratio}, UCUM, "ratio"} |
| DCM                      | nnn303     | Neuroretinal rim area        | (mm2, UCUM, "mm2")       |
| DCM                      | nnn30b     | Neuroretinal rim width       | (um, UCUM, "um")         |
| DCM                      | nnn304     | Optic cup area               | (mm2, UCUM, "mm2")       |
| DCM                      | nnn305     | Optic disc area              | (mm2, UCUM, "mm2")       |
| DCM                      | nnn306     | Optic cup volume             | (mm3, UCUM, "mm3")       |

CID 42xa Retinal Sector Methods

Keyword: RetinalSectorMethods  
FHIR Keyword: dicom-cid-42xa-RetinalSectorMethods  
Type: Extensible  
Version: 2025mdd  
UID: 1.2.840.10008.6.1.xa

Table CID 42xa Retinal Sector Methods

| Coding Scheme Designator | Code Value | Code Meaning             |
|--------------------------|------------|--------------------------|
| DCM                      | nnn560     | Semicircular sectors     |
| DCM                      | nnn56a     | Quadrant sectors         |
| DCM                      | nnn56b     | SNIT rectangular sectors |
| DCM                      | nnn562     | Garway-Heath sectors     |
| DCM                      | nnn563     | Quadrant-octant sectors  |

CID 42x3 RNFL Sector Measurements

This Context Group includes measurements of the circumpapillary retinal nerve fiber layer (cpRNFL) globally across the entire ROI and in each ROI sector, with the span of each sector defined by the context of usage.

Keyword: RNFLSectorMeasurements  
FHIR Keyword: dicom-cid-42x3-RNFLSectorMeasurements  
Type: Non-Extensible  
Version: 2025mdd  
UID: 1.2.840.10008.6.1.x3

Table CID 42x3 RNFL Sector Measurements

| Coding Scheme Designator | Code Value | Code Meaning                            | Units of Measure |
|--------------------------|------------|-----------------------------------------|------------------|
| DCM                      | nnn400     | RNFL average thickness                  | (um, UCUM, "um") |
| DCM                      | nnn401     | RNFL inferior sector thickness          | (um, UCUM, "um") |
| DCM                      | nnn402     | RNFL superior sector thickness          | (um, UCUM, "um") |
| DCM                      | nnn403     | RNFL temporal sector thickness          | (um, UCUM, "um") |
| DCM                      | nnn404     | RNFL nasal sector thickness             | (um, UCUM, "um") |
| DCM                      | nnn405     | RNFL nasal-superior sector thickness    | (um, UCUM, "um") |
| DCM                      | nnn406     | RNFL nasal-inferior sector thickness    | (um, UCUM, "um") |
| DCM                      | nnn407     | RNFL temporal-inferior sector thickness | (um, UCUM, "um") |
| DCM                      | nnn408     | RNFL temporal-superior sector thickness | (um, UCUM, "um") |

285 **CID 42xb RNFL Clockface Measurements**

Positions in the right eye proceed in the clockwise direction as viewed from the anterior position, while positions in the left eye proceed in the counter-clockwise direction.

290 Keyword: RNFLClockfaceMeasurements  
FHIR Keyword: dicom-cid-42xb-RNFLClockfaceMeasurements  
Type: Non-Extensible  
Version: 2025mmdd  
UID: 1.2.840.10008.6.1.xb

295

**Table CID 42xb RNFL Clockface Measurements**

| Coding Scheme Designator | Code Value | Code Meaning                         | Units of Measure |
|--------------------------|------------|--------------------------------------|------------------|
| DCM                      | nnn410     | Retinal ROI width                    | (mm, UCUM, "mm") |
| DCM                      | nnn411     | RNFL clockface position 1 thickness  | (um, UCUM, "um") |
| DCM                      | nnn412     | RNFL clockface position 2 thickness  | (um, UCUM, "um") |
| DCM                      | nnn413     | RNFL clockface position 3 thickness  | (um, UCUM, "um") |
| DCM                      | nnn414     | RNFL clockface position 4 thickness  | (um, UCUM, "um") |
| DCM                      | nnn415     | RNFL clockface position 5 thickness  | (um, UCUM, "um") |
| DCM                      | nnn416     | RNFL clockface position 6 thickness  | (um, UCUM, "um") |
| DCM                      | nnn417     | RNFL clockface position 7 thickness  | (um, UCUM, "um") |
| DCM                      | nnn418     | RNFL clockface position 8 thickness  | (um, UCUM, "um") |
| DCM                      | nnn419     | RNFL clockface position 8 thickness  | (um, UCUM, "um") |
| DCM                      | nnn420     | RNFL clockface position 10 thickness | (um, UCUM, "um") |
| DCM                      | nnn421     | RNFL clockface position 11 thickness | (um, UCUM, "um") |
| DCM                      | nnn422     | RNFL clockface position 12 thickness | (um, UCUM, "um") |

300 **CID 42x4 Macular Thickness Key Measurements**

Keyword: MacularThicknessKeyMeasurements  
FHIR Keyword: dicom-cid-42x4-MacularThicknessKeyMeasurements  
Type: Non-Extensible  
305 Version: 2025mmdd  
UID: 1.2.840.10008.6.1.x4

**Table CID 42x4 Macular Thickness Key Measurements**

| Coding Scheme Designator | Code Value              | Code Meaning                                          | Units of Measure |
|--------------------------|-------------------------|-------------------------------------------------------|------------------|
| LN                       | <a href="#">57108-3</a> | Macular grid.center point thickness by OCT            | (um, UCUM, "um") |
| LN                       | <a href="#">57109-1</a> | Macular grid.center subfield thickness by OCT         | (um, UCUM, "um") |
| LN                       | <a href="#">57110-9</a> | Macular grid.inner superior subfield thickness by OCT | (um, UCUM, "um") |
| LN                       | <a href="#">57111-7</a> | Macular grid.inner nasal subfield thickness by OCT    | (um, UCUM, "um") |

| Coding Scheme Designator | Code Value              | Code Meaning                                          | Units of Measure |
|--------------------------|-------------------------|-------------------------------------------------------|------------------|
| LN                       | <a href="#">57112-5</a> | Macular grid.inner inferior subfield thickness by OCT | (um, UCUM, "um") |
| LN                       | <a href="#">57113-3</a> | Macular grid.inner temporal subfield thickness by OCT | (um, UCUM, "um") |
| LN                       | <a href="#">57114-1</a> | Macular grid.outer superior subfield thickness by OCT | (um, UCUM, "um") |
| LN                       | <a href="#">57115-8</a> | Macular grid.outer nasal subfield thickness by OCT    | (um, UCUM, "um") |
| LN                       | <a href="#">57116-6</a> | Macular grid.outer inferior subfield thickness by OCT | (um, UCUM, "um") |
| LN                       | <a href="#">57117-4</a> | Macular grid.outer temporal subfield thickness by OCT | (um, UCUM, "um") |
| LN                       | <a href="#">57118-2</a> | Macular grid.total volume by OCT                      | (uL, UCUM, "uL") |
| DCM                      | nnn250                  | Average macular thickness                             | (um, UCUM, "um") |

310 Note : The Macular grid measurement concepts, based on the ETD RS grid, are included in LOINC panel [57119-0](#) Optical coherence tomography panel. The ETD RS grid defines the center subfield diameter of 1 mm, inner subfields diameter of 3 mm, and the outer subfields diameter of 6 mm; see [PS3.17 Section UU.5](#).

315

### CID 42x5 Ganglion Cell Measurement Extent

This Context Group specifies the retinal layers included in the ganglion cell measurements.

320 Keyword: GanglionCellMeasurementExtent  
 FHIR Keyword: dicom-cid-42x5-GanglionCellMeasurementExtent  
 Type: Non-Extensible  
 Version: 2025mmdd  
 UID: 1.2.840.10008.6.1.x5

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**Table CID 42x5 Ganglion Cell Measurement Extent**

| Coding Scheme Designator | Code Value | Code Meaning                             |
|--------------------------|------------|------------------------------------------|
| SCT                      | 39197003   | Ganglion cell layer                      |
| DCM                      | nnn550     | Ganglion cell and inner plexiform layers |
| DCM                      | nnn551     | Ganglion cell complex                    |

### CID 42x6 Ganglion Cell Key Measurements

330 This Context Group includes key measurements of the ganglion cell thickness, with or without adjacent layers as specified by the context of usage.

Keyword: GanglionCellKeyMeasurements  
 FHIR Keyword: dicom-cid-42x6-GanglionCellKeyMeasurements  
 Type: Non-Extensible  
 Version: 2025mmdd  
 UID: 1.2.840.10008.6.1.x6

335

Table CID 42x6 Ganglion Cell Key Measurements

| Coding Scheme Designator | Code Value | Code Meaning                    | Units of Measure |
|--------------------------|------------|---------------------------------|------------------|
| DCM                      | nnn410     | Retinal ROI width               | (mm, UCUM, "mm") |
| DCM                      | nnn500     | Average ganglion cell thickness | (um, UCUM, "um") |
| DCM                      | nnn502     | Minimum ganglion cell thickness | (um, UCUM, "um") |

CID 42x7 Ganglion Cell Sector Measurements

This Context Group includes measurements of the ganglion cell thickness in each ROI sector, with or without adjacent layers as specified by the context of usage, and with the presence and span of each sector also defined by the context of usage. Sectors defined within an elliptical annulus should include Retinal ROI height within the data set.

Keyword: GanglionCellSectorMeasurements  
FHIR Keyword: dicom-cid-42x7-GanglionCellSectorMeasurements  
Type: Non-Extensible  
Version: 2025mdd  
UID: 1.2.840.10008.6.1.x7

Table CID 42x7 Ganglion Cell Sector Measurements

| Coding Scheme Designator | Code Value | Code Meaning                                             | Units of Measure |
|--------------------------|------------|----------------------------------------------------------|------------------|
| DCM                      | nnn41a     | Retinal ROI height                                       | (mm, UCUM, "mm") |
| DCM                      | nnn511     | Average ganglion cell thickness superior sector          | (um, UCUM, "um") |
| DCM                      | nnn512     | Average ganglion cell thickness nasal-superior sector    | (um, UCUM, "um") |
| DCM                      | nnn513     | Average ganglion cell thickness nasal sector             | (um, UCUM, "um") |
| DCM                      | nnn514     | Average ganglion cell thickness nasal-inferior sector    | (um, UCUM, "um") |
| DCM                      | nnn515     | Average ganglion cell thickness inferior sector          | (um, UCUM, "um") |
| DCM                      | nnn516     | Average ganglion cell thickness temporal-inferior sector | (um, UCUM, "um") |
| DCM                      | nnn517     | Average ganglion cell thickness temporal sector          | (um, UCUM, "um") |
| DCM                      | nnn518     | Average ganglion cell thickness temporal-superior sector | (um, UCUM, "um") |

CID 42x8 Ganglion Cell Sector Methods

Keyword: GanglionCellSectorMethods  
FHIR Keyword: dicom-cid-42x8-GanglionCellSectorMethods  
Type: Extensible  
Version: 2025mmdd  
UID: 1.2.840.10008.6.1.x8

Table CID 42x8 Ganglion Cell Sector Methods

| Coding Scheme Designator | Code Value | Code Meaning               |
|--------------------------|------------|----------------------------|
| DCM                      | nnn560     | Semicircular sectors       |
| DCM                      | nnn56a     | Quadrant sectors           |
| DCM                      | nnn56b     | SNIT rectangular sectors   |
| DCM                      | nnn561     | Elliptical annulus sectors |
| DCM                      | nnn564     | Posterior pole 8x8 grid    |

CID 42y0 Endothelial Cell Count Measurements

Keyword: EndothelialCellCountMeasurements  
FHIR Keyword: dicom-cid-42y0-EndothelialCellCountMeasurements  
Type: Non-Extensible  
Version: 2025mmdd  
UID: 1.2.840.10008.6.1.y0

Table CID 42y0 Endothelial Cell Count Measurements

| Coding Scheme Designator | Code Value | Code Meaning             | Units of Measure                 |
|--------------------------|------------|--------------------------|----------------------------------|
| DCM                      | nnn700     | Endothelial cell density | {{cells}/mm2, UCUM, "cells/mm2") |

CID 42y1 Ophthalmic Image ROI Measurements

Keyword: OphthalmicImageROIMeasurements  
FHIR Keyword: dicom-cid-42y1-OphthalmicImageROIMeasurements  
Type: Extensible  
Version: 2025mmdd  
UID: 1.2.840.10008.6.1.y1

Table CID 42y1 Ophthalmic Image ROI Measurements

| Coding Scheme Designator | Code Value | Code Meaning            | Units of Measure   |
|--------------------------|------------|-------------------------|--------------------|
| DCM                      | nnn800     | Geographic atrophy area | (mm2, UCUM, "mm2") |

*New codes and definitions for PS3.16 Annex D*

## ANNEX D

395

| Code Value | Code Meaning                                               | Definition                                                                                                                                                                                                                                                                                                                          | Notes |
|------------|------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| 1000x0     | Numerator                                                  | Numerator of a value expressed as a ratio                                                                                                                                                                                                                                                                                           |       |
| 1000x1     | Denominator                                                | Denominator of a value expressed as a ratio                                                                                                                                                                                                                                                                                         |       |
| nnn100     | Visual Field Key Measurements                              | Clinically relevant measurements of patient Visual Field                                                                                                                                                                                                                                                                            |       |
| nnn101     | Optic Disc Key Measurements                                | Clinically relevant measurements of Optic Disc                                                                                                                                                                                                                                                                                      |       |
| nnn102     | Circumpapillary Retinal Nerve Fiber Layer Key Measurements | Clinically relevant measurements of the Circumpapillary Retinal Nerve Fiber Layer                                                                                                                                                                                                                                                   |       |
| nnn103     | Macular Thickness Key Measurements                         | Clinically relevant measurements of Macular Thickness                                                                                                                                                                                                                                                                               |       |
| nnn104     | Ganglion Cell Layer Key Measurements                       | Clinically relevant measurements of Ganglion Cell Layer                                                                                                                                                                                                                                                                             |       |
| nnn106     | Endothelial Cell Count Key Measurements                    | Clinically relevant measurements of Endothelial Cell Count                                                                                                                                                                                                                                                                          |       |
| nnn107     | Ophthalmic Image ROI Measurements                          | Measurements of Ophthalmic Images based on a Region of Interest                                                                                                                                                                                                                                                                     |       |
| nnn110     | Repositioned ROI or grid                                   | Indicator that measurements were made with ROI or grid positioned differently than used for a prior measurement set                                                                                                                                                                                                                 |       |
| nnn200     | Visual Field Global Deviation from Normal                  | Weighted average deviation from the age corrected normal visual field, as decibel. Corresponds to Global Deviation from Normal (0024,0066) in the Results Normals Sequence (0024,0064)                                                                                                                                              |       |
| nnn201     | Visual Field Localized Deviation From Normal               | Weighted square root of loss variance in visual field, as decibel. Corresponds to Localized Deviation From Normal (0024,0068) in the Results Normals Sequence (0024,0064)                                                                                                                                                           |       |
| nnn202     | Fixation false positive ratio                              | The ratio between the number of times patient responses occurred when no visual stimulus was present (false positive responses) and the number of trials presented. Corresponds to ratio of False Positives Quantity (0024,0060) to Positive Catch Trials Quantity (0024,0056) in the Visual Field Catch Trial Sequence (0024,0034) |       |
| nn202a     | Fixation false positive percent                            | Estimated percentage of all patient responses that occurred at a time when no visual stimulus was present (false positive responses), as percent. Corresponds to False Positives Estimate (0024,0054) in the Visual Field Catch Trial Sequence (0024,0034)                                                                          |       |

| Code Value | Code Meaning                    | Definition                                                                                                                                                                                                                                                                                                                                                                               | Notes |
|------------|---------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| nnn203     | Fixation false negative ratio   | The ratio between the number of times stimuli were not seen by the patient but were previously seen at a lower luminance earlier in the visual field test (false negative responses) and the number of trials presented. Corresponds to ratio of False Negatives Quantity (0024,0050) to Negative Catch Trials Quantity (0024,0048) in the Visual Field Catch Trial Sequence (0024,0034) |       |
| nn203a     | Fixation false negative percent | Estimated percentage of all stimuli that were not seen by the patient but were previously seen at a lower luminance earlier in the visual field test (false negative responses), as percent. Corresponds to False Negatives Estimate (0024,0046) in the Visual Field Catch Trial Sequence (0024,0034)                                                                                    |       |
| nnn204     | Fixation losses ratio           | The ratio between the number of times a patient loses visual fixation while maintaining a visual gaze on a single location and the number of trials presented. Corresponds to ratio of Patient Not Properly Fixated Quantity (0024,0036) to Fixation Checked Quantity (0024,0035) in Fixation Sequence (0024,0032)                                                                       |       |
| nnn250     | Average macular thickness       | Average macular thickness across all ETDRS subfields                                                                                                                                                                                                                                                                                                                                     |       |
| nnn300     | Cup to disc area ratio          | Ratio of the optic cup area to the optic disc area                                                                                                                                                                                                                                                                                                                                       |       |
| nnn301     | Cup to disc ratio vertical      | Ratio of the vertical diameter of the optic cup to that of the vertical diameter of the optic disc                                                                                                                                                                                                                                                                                       |       |
| nnn302     | Cup to disc ratio horizontal    | Ratio of the horizontal diameter of the optic cup to that of the horizontal diameter of the optic disc                                                                                                                                                                                                                                                                                   |       |
| nnn303     | Neuroretinal rim area           | Area of the neuroretinal rim portion of the optic nerve head, or Bruch's Membrane Opening-based Minimum Rim Area (BMO-MRA)                                                                                                                                                                                                                                                               |       |
| nnn30b     | Neuroretinal rim width          | Average width of the neuroretinal rim portion of the optic nerve head, or Bruch's Membrane Opening-based Minimum Rim Width (BMO-MRW)                                                                                                                                                                                                                                                     |       |
| nnn304     | Optic cup area                  | Area of the cup portion of the optic nerve head                                                                                                                                                                                                                                                                                                                                          |       |
| nnn305     | Optic disc area                 | Area of the optic disc or Bruch's Membrane Opening (BMO)                                                                                                                                                                                                                                                                                                                                 |       |
| nnn306     | Optic cup volume                | Volume of the cup portion of the optic nerve head                                                                                                                                                                                                                                                                                                                                        |       |
| nnn400     | RNFL average thickness          | Average measured thickness of the retinal nerve fiber layer (RNFL), i.e., the distance between the internal limiting membrane (ILM) and the Ganglion Cell Layer (GCL), across the entire ROI (also denoted as the global RNFL thickness)                                                                                                                                                 |       |
| nnn401     | RNFL inferior sector thickness  | Average measured thickness of the retinal nerve fiber layer (RNFL), i.e., the distance between the internal limiting membrane (ILM) and the Ganglion Cell Layer (GCL), in the inferior sector as defined by the measurement method.                                                                                                                                                      |       |
| nnn402     | RNFL superior sector thickness  | Average measured thickness of the retinal nerve fiber layer (RNFL), i.e., the distance between the internal limiting membrane (ILM) and the Ganglion Cell Layer (GCL), in the superior sector as defined by the measurement method.                                                                                                                                                      |       |

| Code Value | Code Meaning                            | Definition                                                                                                                                                                                                                                   | Notes |
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| nnn403     | RNFL temporal sector thickness          | Average measured thickness of the retinal nerve fiber layer (RNFL), i.e., the distance between the internal limiting membrane (ILM) and the Ganglion Cell Layer (GCL), in the temporal sector as defined by the measurement method.          |       |
| nnn404     | RNFL nasal sector thickness             | Average measured thickness of the retinal nerve fiber layer (RNFL), i.e., the distance between the internal limiting membrane (ILM) and the Ganglion Cell Layer (GCL), in the nasal sector as defined by the measurement method.             |       |
| nnn405     | RNFL nasal-superior sector thickness    | Average measured thickness of the retinal nerve fiber layer (RNFL), i.e., the distance between the internal limiting membrane (ILM) and the Ganglion Cell Layer (GCL), in the nasal-superior sector as defined by the measurement method.    |       |
| nnn406     | RNFL nasal-inferior sector thickness    | Average measured thickness of the retinal nerve fiber layer (RNFL), i.e., the distance between the internal limiting membrane (ILM) and the Ganglion Cell Layer (GCL), in the nasal-inferior sector as defined by the measurement method.    |       |
| nnn407     | RNFL temporal-inferior sector thickness | Average measured thickness of the retinal nerve fiber layer (RNFL), i.e., the distance between the internal limiting membrane (ILM) and the Ganglion Cell Layer (GCL), in the temporal-inferior sector as defined by the measurement method. |       |
| nnn408     | RNFL temporal-superior sector thickness | Average measured thickness of the retinal nerve fiber layer (RNFL), i.e., the distance between the internal limiting membrane (ILM) and the Ganglion Cell Layer (GCL), in the temporal-superior sector as defined by the measurement method. |       |
| nnn409     | Retinal nerve fiber layer symmetry      | <u>Ratio of the global retinal nerve fiber layer (RNFL) thickness measurement of the right eye to that of the left eye.</u>                                                                                                                  |       |
| nnn410     | Retinal ROI width                       | Region of interest circular area diameter, elliptical area major axis, or rectangular area major dimension, used for measurement of retinal layer thicknesses                                                                                |       |
| nnn41a     | Retinal ROI height                      | Region of interest elliptical area minor axis, or rectangular area minor dimension, used for measurement of retinal layer thicknesses                                                                                                        |       |
| nnn411     | RNFL clockface position 1 thickness     | Retinal nerve fiber layer thickness at clockface position 1, in the clockwise direction for the right eye and the counter-clockwise direction for the left eye, as viewed from an anterior position. This is in the nasal superior quadrant. |       |
| nnn412     | RNFL clockface position 2 thickness     | Retinal nerve fiber layer thickness at clockface position 2, in the clockwise direction for the right eye and the counter-clockwise direction for the left eye, as viewed from an anterior position. This is in the nasal superior quadrant. |       |
| nnn413     | RNFL clockface position 3 thickness     | Retinal nerve fiber layer thickness at clockface position 3, in the clockwise direction for the right eye and the counter-clockwise direction for the left eye, as viewed from an anterior position. This is the nasal position.             |       |

**hat gelöscht:** Symmetry between the two eyes

**hat formatiert:** Nicht Hervorheben

**hat gelöscht:** , represented as percent

**hat formatiert:** Nicht Hervorheben

| Code Value | Code Meaning                                          | Definition                                                                                                                                                                                                                                       | Notes |
|------------|-------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| nnn414     | RNFL clockface position 4 thickness                   | Retinal nerve fiber layer thickness at clockface position 4, in the clockwise direction for the right eye and the counter-clockwise direction for the left eye, as viewed from an anterior position. This is in the nasal inferior quadrant.     |       |
| nnn415     | RNFL clockface position 5 thickness                   | Retinal nerve fiber layer thickness at clockface position 5, in the clockwise direction for the right eye and the counter-clockwise direction for the left eye, as viewed from an anterior position. This is in the nasal inferior quadrant.     |       |
| nnn416     | RNFL clockface position 6 thickness                   | Retinal nerve fiber layer thickness at clockface position 6. This is the inferior position.                                                                                                                                                      |       |
| nnn417     | RNFL clockface position 7 thickness                   | Retinal nerve fiber layer thickness at clockface position 7, in the clockwise direction for the right eye and the counter-clockwise direction for the left eye, as viewed from an anterior position. This is in the temporal inferior quadrant.  |       |
| nnn418     | RNFL clockface position 8 thickness                   | Retinal nerve fiber layer thickness at clockface position 8, in the clockwise direction for the right eye and the counter-clockwise direction for the left eye, as viewed from an anterior position. This is in the temporal inferior quadrant.  |       |
| nnn419     | RNFL clockface position 9 thickness                   | Retinal nerve fiber layer thickness at clockface position 9, in the clockwise direction for the right eye and the counter-clockwise direction for the left eye, as viewed from an anterior position. This is the temporal position.              |       |
| nnn420     | RNFL clockface position 10 thickness                  | Retinal nerve fiber layer thickness at clockface position 10, in the clockwise direction for the right eye and the counter-clockwise direction for the left eye, as viewed from an anterior position. This is in the temporal superior quadrant. |       |
| nnn421     | RNFL clockface position 11 thickness                  | Retinal nerve fiber layer thickness at clockface position 11, in the clockwise direction for the right eye and the counter-clockwise direction for the left eye, as viewed from an anterior position. This is in the temporal superior quadrant. |       |
| nnn422     | RNFL clockface position 12 thickness                  | Retinal nerve fiber layer thickness at clockface position 12. This is the superior position.                                                                                                                                                     |       |
| nnn500     | Average ganglion cell thickness                       | Average thickness of the ganglion cell layer across the entire ROI (also denoted as the global GCL thickness)                                                                                                                                    |       |
| nnn502     | Minimum ganglion cell thickness                       | Minimum thickness of the ganglion cell layer over a single meridian crossing the annulus                                                                                                                                                         |       |
| nnn511     | Average ganglion cell thickness superior sector       | Average ganglion cell thickness in the superior sector as defined by the measurement method                                                                                                                                                      |       |
| nnn512     | Average ganglion cell thickness nasal-superior sector | Average ganglion cell thickness in the nasal-superior sector as defined by the measurement method                                                                                                                                                |       |
| nnn513     | Average ganglion cell thickness nasal sector          | Average ganglion cell thickness in the nasal sector as defined by the measurement method                                                                                                                                                         |       |
| nnn514     | Average ganglion cell thickness nasal-inferior sector | Average ganglion cell thickness in the nasal-inferior sector as defined by the measurement method                                                                                                                                                |       |

| Code Value | Code Meaning                                             | Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Notes |
|------------|----------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| nnn515     | Average ganglion cell thickness inferior sector          | Average ganglion cell thickness in the inferior sector as defined by the measurement method                                                                                                                                                                                                                                                                                                                                                                                                                                                |       |
| nnn516     | Average ganglion cell thickness temporal-inferior sector | Average ganglion cell thickness in the temporal-inferior as defined by the measurement method                                                                                                                                                                                                                                                                                                                                                                                                                                              |       |
| nnn517     | Average ganglion cell thickness temporal sector          | Average ganglion cell thickness in the temporal sector as defined by the measurement method                                                                                                                                                                                                                                                                                                                                                                                                                                                |       |
| nnn518     | Average ganglion cell thickness temporal-superior sector | Average ganglion cell thickness in the temporal-superior sector as defined by the measurement method                                                                                                                                                                                                                                                                                                                                                                                                                                       |       |
| nnn519     | Average ganglion cell thickness in posterior pole grid   | Average ganglion cell thickness in the posterior pole grid, as a table of values                                                                                                                                                                                                                                                                                                                                                                                                                                                           |       |
| nnn550     | Ganglion cell and inner plexiform layers                 | Anatomic region including the ganglion cell layer (GCL) and the inner plexiform layer (IPL)                                                                                                                                                                                                                                                                                                                                                                                                                                                |       |
| nnn551     | Ganglion cell complex                                    | Anatomic region including the Ganglion cell layer (GCL), the inner plexiform layer (IPL), and the retinal nerve fiber layer (RNFL)                                                                                                                                                                                                                                                                                                                                                                                                         |       |
| nnn560     | Semicircular sectors                                     | <u>Measurement method on a circular ROI with four overlapping 180° semicircular sectors centered on vertical and horizontal axes (superior, inferior, nasal, temporal).</u>                                                                                                                                                                                                                                                                                                                                                                |       |
| nnn56a     | Quadrant sectors                                         | <u>Measurement method on a circular ROI with four 90° sectors centered on vertical and horizontal axes (superior, inferior, nasal, temporal).</u>                                                                                                                                                                                                                                                                                                                                                                                          |       |
| nnn56b     | SNIT rectangular sectors                                 | <u>Measurement method on a rectangular ROI with four overlapping rectangular sectors (superior, nasal, inferior, temporal).</u>                                                                                                                                                                                                                                                                                                                                                                                                            |       |
| nnn561     | Elliptical annulus sectors                               | <u>Measurement method on an elliptical annulus ROI, divided into six 60° sectors with boundaries beginning at 30° from vertical (superior, nasal-superior, nasal-inferior, inferior, temporal-inferior, temporal-superior). The outer ellipse of the annulus has a minor axis diameter equal to the Retinal ROI height and is aligned vertically, and a major axis diameter equal to the Retinal ROI width aligned horizontally. The dimensions of the inner ellipse of the annulus, centered on the fovea, are manufacturer specific.</u> |       |
| nnn562     | Garway-Heath sectors                                     | <u>Measurement method on a circular ROI, divided into six sectors – a 110° nasal sector and a 90° temporal sector centered on the fovea-Bruch's membrane opening (BMO) axis, and four 40° sectors (temporal-superior, nasal-superior, nasal-inferior, temporal-inferior)</u>                                                                                                                                                                                                                                                               |       |
| nnn563     | Quadrant-octant sectors                                  | <u>Measurement method on a circular ROI, divided into six sectors – 90° nasal and temporal quadrants centered on the horizontal axis, and four 45° octants (temporal-superior, nasal-superior, nasal-inferior, temporal-inferior)</u>                                                                                                                                                                                                                                                                                                      |       |

hat gelöscht: measurement area

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hat gelöscht: area of

hat gelöscht: with an outer minor axis diameter of the Retinal ROI height aligned vertically, an outer major axis diameter of the Retinal ROI width aligned horizontally,

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hat gelöscht: measurement area

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| Code Value | Code Meaning             | Definition                                                                                                                                                                         | Notes |
|------------|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| nnn564     | Posterior pole 8x8 grid  | Measurement method on a rectangular ROI divided into an 8x8 grid positioned symmetrically to the fovea-optic disc axis and centered on the optic disc.                             |       |
| nnn565     | RNFL Clockface Method    | Measurement method on a circular ROI centered on the optic nerve head, with twelve measurements of retinal nerve fiber layer thickness made at 30° intervals on the circumference. |       |
| nnn700     | Endothelial cell density | The density of endothelial cells present on the innermost surface of the cornea                                                                                                    |       |
| nnn800     | Geographic atrophy area  | The sum of the areas of all macular atrophy lesions                                                                                                                                |       |

- hat gelöscht: measurement area
- hat formatiert: Nicht Hervorheben
- hat gelöscht: measurement of retinal nerve fiber layer
- hat formatiert: Nicht Hervorheben
- hat gelöscht: divided into twelve 30° sectors,
- hat gelöscht: based on the ROI width