

GelSight .zip file

Monday, January 12, 2026 2:26 PM

📁 PitDetection	1/12/2026 2:09 PM	File folder
📁 Reports	1/12/2026 2:09 PM	File folder
📁 SurfaceRoughness	1/12/2026 2:09 PM	File folder
📁 Offset	1/12/2026 2:08 PM	File folder
📁 HoleDiameter	1/12/2026 2:08 PM	File folder
📁 DefectDetection	1/12/2026 2:08 PM	File folder

First layer

Pit Detection

Monday, January 12, 2026 2:28 PM

pitDetection.x3p	1/12/2026 2:09 PM	X3P File	18,750 KB
scan	1/12/2026 2:09 PM	Yaml Source File	2 KB
scan.yaml.bak	1/12/2026 2:09 PM	BAK File	2 KB
thumbnail	1/12/2026 2:09 PM	JPG File	6 KB
PitDetection.stl	1/12/2026 2:09 PM	STL File	410,753 KB
aligned01	1/12/2026 2:08 PM	PNG File	2,553 KB
aligned02	1/12/2026 2:08 PM	PNG File	2,347 KB
aligned03	1/12/2026 2:08 PM	PNG File	2,414 KB
aligned04	1/12/2026 2:08 PM	PNG File	2,367 KB
aligned05	1/12/2026 2:08 PM	PNG File	2,324 KB
aligned06	1/12/2026 2:08 PM	PNG File	2,559 KB
Calib-4E07-XNIU_20250917_1255	1/12/2026 2:08 PM	PNG File	1,264 KB
Calib-4E07-XNIU_20250917_1255	1/12/2026 2:08 PM	Yaml Source File	10 KB
G500-08b-repeat-002.tmd	1/12/2026 2:08 PM	TMD File	16,447 KB
G500-08b-repeat-002_nrm	1/12/2026 2:08 PM	PNG File	20,444 KB
image01	1/12/2026 2:08 PM	PNG File	2,993 KB
image02	1/12/2026 2:08 PM	PNG File	3,012 KB
image03	1/12/2026 2:08 PM	PNG File	3,047 KB
image04	1/12/2026 2:08 PM	PNG File	3,038 KB
image05	1/12/2026 2:08 PM	PNG File	3,012 KB
image06	1/12/2026 2:08 PM	PNG File	3,050 KB
image07	1/12/2026 2:08 PM	PNG File	2,940 KB
analysis	1/12/2026 2:09 PM	File folder	

Top Level

scancontext	1/12/2026 2:09 PM	Yaml Source File	13 KB
io_1143073375	1/12/2026 2:09 PM	File folder	

Analysis folder (there was a single image in the "io_1143073375" folder)

```
version: 3.7
routines:
- type: PitDetection
  id: 1143073375
  name: Pit Detection
  annotationids: '[]'
  featuresize: 0.125
  depththreshold: 0.0127
  mindepth: 0.003
  maxdepth: 2
  minpitdiameter: 0.0127
  maxpitdiameter: 10
  includeroiborderparticles: false
  primaryshapeid: 0
  pitcount: 58
  coverage: 0.166748451628
  smallestdiameter: 0.0582734383643
  largestdiameter: 0.359381347895
  maxpitdepth: 0.0928513780236
  nominaldiameter: 0.125
  image: image.png
  minpt: (1900, 679)
report:
  fields:
    - name: centroid
      type: Point
    - name: area
      type: Area
    - name: depth
      type: Length
    - name: length
      type: Length
    - name: width
      type: Length
    - name: diameter
      type: Length
    - name: volume
      type: Volume
  records:
    - - (1460.14400144, 57.5469354694)
      - 0.0834749158892 mm2
      - 0.0860527604818 mm
      - 0.333451169045 mm
      - 0.312507526682
```

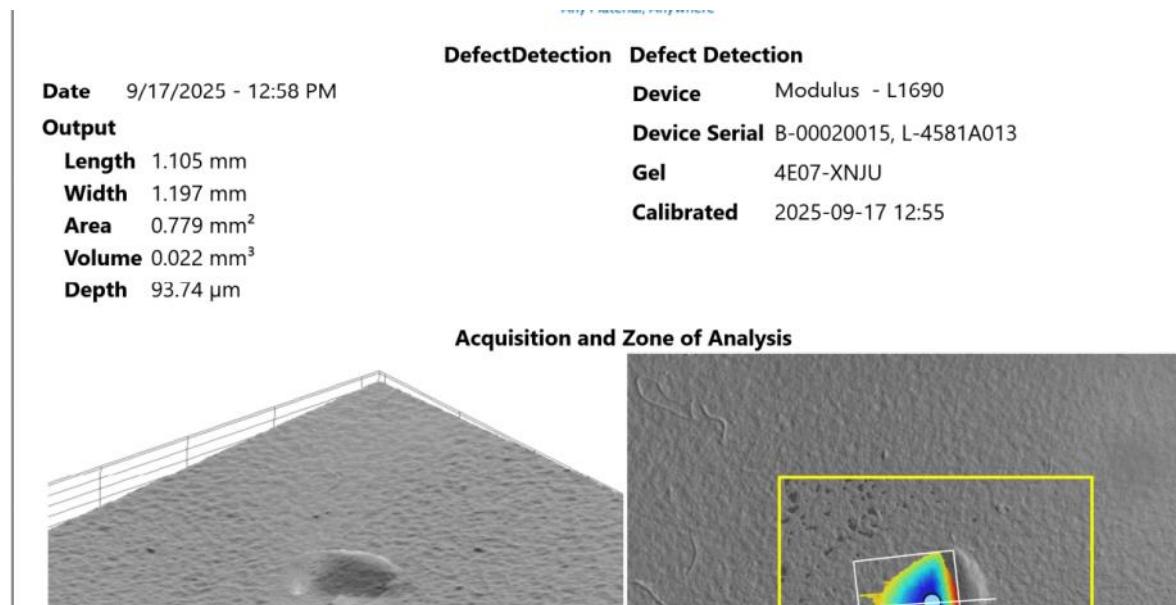
scandcontext.yml

Reports

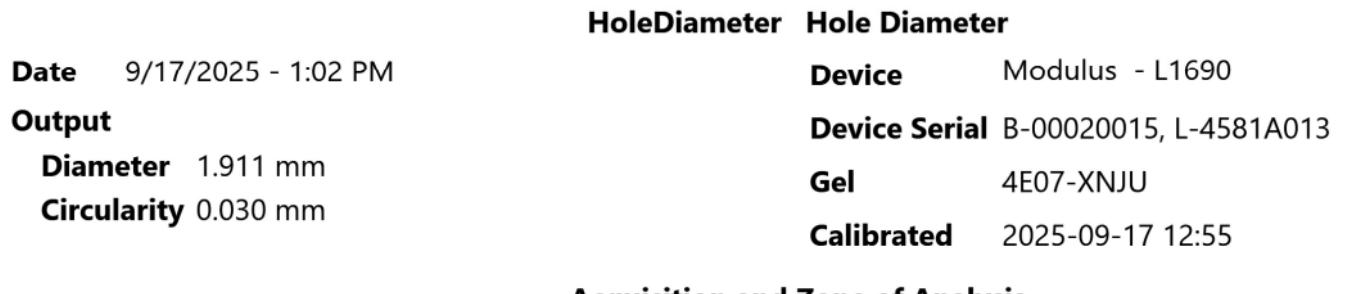
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Note that there are PDFs

 DefectDetection	1/12/2026 2:09 PM	PDF File	971 KB	
 HoleDiameter	1/12/2026 2:09 PM	PDF File	836 KB	
 Offset	Type: PDF File Size: 835 KB Date modified: 1/12/2026 2:09 PM	1/12/2026 2:09 PM	PDF File	935 KB
 PitDetection	1/12/2026 2:09 PM	PDF File	798 KB	
 SurfaceRoughness	1/12/2026 2:09 PM	PDF File	926 KB	



Defect Detection



Date 9/17/2025 - 1:02 PM

Output

Diameter 1.911 mm

Circularity 0.030 mm

HoleDiameter Hole Diameter

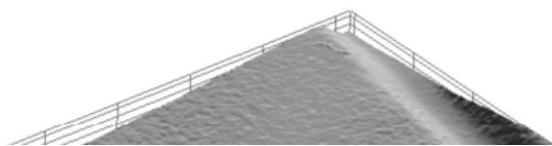
Device Modulus - L1690

Device Serial B-00020015, L-4581A013

Gel 4E07-XNJU

Calibrated 2025-09-17 12:55

Acquisition and Zone of Analysis



Hole Diameter

Date 9/19/2025 - 1:12 PM

Output

Offset 87.90 µm

Width 0.384 mm

Offset Offset

Device Modulus - L1690

Device Serial B-00020015, L-4581A013

Gel 4E07-XNJU

Calibrated 2025-09-17 12:55

Acquisition and Zone of Analysis



Offset

Date 9/17/2025 - 1:00 PM

Output

Number of Pits 58

Coverage 16.675 %

Pit Minimum 0.058 mm

Pit Maximum 0.359 mm

Max Pit Depth 92.85 µm

Nominal Diameter 125.00 µm

PitDetection Pit Detection

Device Modulus - L1690

Device Serial B-00020015, L-4581A013

Gel 4E07-XNJU

Calibrated 2025-09-17 12:55

Acquisition and Zone of Analysis



PitDetection

SurfaceRoughness **Surface Roughness**

Date 9/29/2025 - 2:34 PM **Device** Series 2, 0.5X, 5 MP

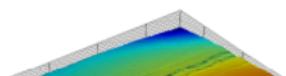
Output **Device Serial** 243008

Sa 2.41 µm **Gel** 436U-Y58K

Sz 87.10 µm **Calibrated** 2025-09-12 09:28

Scale Factor 1.00

Acquisition and Zone of Analysis



SurfaceRoughness

SurfaceRoughness

Monday, January 12, 2026 2:28 PM

Calib-436U-Y58K_20250912_0928	1/12/2026 2:09 PM	PNG File	1,209 KB
Calib-436U-Y58K_20250912_0928	1/12/2026 2:09 PM	Yaml Source File	10 KB
image01	1/12/2026 2:09 PM	PNG File	2,927 KB
image02	1/12/2026 2:09 PM	PNG File	2,986 KB
image03	1/12/2026 2:09 PM	PNG File	2,987 KB
image04	1/12/2026 2:09 PM	PNG File	2,900 KB
image05	1/12/2026 2:09 PM	PNG File	2,919 KB
image06	1/12/2026 2:09 PM	PNG File	2,958 KB
scan	1/12/2026 2:09 PM	Yaml Source File	2 KB
scan.yaml.bak	1/12/2026 2:09 PM	BAK File	1 KB
Scan-006.tmd	1/12/2026 2:09 PM	TMD File	19,790 KB
Scan-006_nrm	1/12/2026 2:09 PM	PNG File	24,924 KB
thumbnail	1/12/2026 2:09 PM	JPG File	3 KB
analysis	1/12/2026 2:09 PM	File folder	

Root level

scancontext	1/12/2026 2:09 PM	Yaml Source File
io_280719947	1/12/2026 2:09 PM	File folder

Analysis folder (there is a single image in "io_280719947" folder)

Offset

Monday, January 12, 2026 2:28 PM

 scan	1/12/2026 2:08 PM	Yaml Source File	2 KB
 scan.yaml.bak	1/12/2026 2:08 PM	BAK File	2 KB
 Scan-001_nrm	1/12/2026 2:08 PM	PNG File	20,385 KB
 thumbnail	1/12/2026 2:08 PM	JPG File	3 KB
 aligned01	1/12/2026 2:08 PM	PNG File	2,212 KB
 aligned02	1/12/2026 2:08 PM	PNG File	2,288 KB
 aligned03	1/12/2026 2:08 PM	PNG File	2,221 KB
 aligned04	1/12/2026 2:08 PM	PNG File	2,215 KB
 aligned05	1/12/2026 2:08 PM	PNG File	2,257 KB
 aligned06	1/12/2026 2:08 PM	PNG File	2,259 KB
 Calib-4E07-XNJU_20250917_1255	1/12/2026 2:08 PM	PNG File	1,264 KB
 Calib-4E07-XNJU_20250917_1255	1/12/2026 2:08 PM	Yaml Source File	10 KB
 image01	1/12/2026 2:08 PM	PNG File	2,943 KB
 image02	1/12/2026 2:08 PM	PNG File	2,973 KB
 image03	1/12/2026 2:08 PM	PNG File	2,961 KB
 image04	1/12/2026 2:08 PM	PNG File	2,957 KB
 image05	1/12/2026 2:08 PM	PNG File	2,954 KB
 image06	1/12/2026 2:08 PM	PNG File	2,980 KB
 image07	1/12/2026 2:08 PM	PNG File	2,916 KB
 Scan-001.tmd	1/12/2026 2:08 PM	TMD File	16,447 KB
 analysis	1/12/2026 2:08 PM	File folder	

Root folder.

 scancontext	1/12/2026 2:08 PM	Yaml Source File
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The analysis folder

```
version: 3.7
shapes:
└- id: 1923415219
    type: line
    regions: '[{end: 1127.43689938, id: 41862782, start: 0, width: 1}]'
    snapmargin: 0.3 mm
    x1: 706.285714286
    y1: 1707.52597403
    x2: 1689.46753247
    y2: 1155.74025974
routines:
└- type: Offset
    id: 1882743009
    name: Offset
    annotationids: '[]'
    levelorder: 1
    levelregions: '[(0.79309387765, 0.99309387765, None), (2.03962522651, 2.23962522651, None)]'
    numprofiles: 1
    profilewidth: 0.2
    reintegrate: false
    primaryshapeid: 1923415219
    offsetregion1: (1.09309387765, 1.93962522651, Min)
    offsetregion2: (1.98962522651, 2.18962522651, Mean)
    debug: false
    offset: 0.0879013537644
    width: 0.383541711456
    profile: '[(0, -0.0135357715825), (0.00273958365326, -0.0134273413), (0.00547916730652, -0.0133154654368), (0.09309387765, -0.00665005882813), (0.0958334613, -0.00725359964349), (0.09857304496, -0.0078100512, 1.70676061598, -0.0883346966375)]
    point1: (1249.30192051, 1402.77198074)
    region1: '[(1.09309387765, -0.00665005882813), (1.0958334613, -0.00725359964349), (1.09857304496, -0.0078100512, 1.99167731592, -0.00174851289618), (1.99441689957, -0.00169170408269), (1.99715648323, -0.001668892, 2.09030232744, -0.000433342873032)]
    point2: (1371.32803427, 1334.2879373)
    region2: '[(706.285714286, 1707.52597403, 1689.46753247, 1155.74025974)]'
    autooffset: true
    meta_PassedAnalysis: True
    meta_sdkversion: 4.2.240.0
```

The contents of the scancontext.yml file

HoleDiameter

Monday, January 12, 2026 2:28 PM

image01	1/12/2026 2:08 PM	PNG File	2,985 KB
image02	1/12/2026 2:08 PM	PNG File	3,000 KB
image03	1/12/2026 2:08 PM	PNG File	3,025 KB
image04	1/12/2026 2:08 PM	PNG File	3,021 KB
image05	1/12/2026 2:08 PM	PNG File	3,009 KB
image06	1/12/2026 2:08 PM	PNG File	3,044 KB
image07	1/12/2026 2:08 PM	PNG File	2,936 KB
scan	1/12/2026 2:08 PM	Yaml Source File	2 KB
scan.yaml.bak	1/12/2026 2:08 PM	BAK File	2 KB
thumbnail	1/12/2026 2:08 PM	JPG File	4 KB
aligned01	1/12/2026 2:08 PM	PNG File	2,222 KB
aligned02	1/12/2026 2:08 PM	PNG File	2,384 KB
aligned03	1/12/2026 2:08 PM	PNG File	2,421 KB
aligned04	1/12/2026 2:08 PM	PNG File	2,230 KB
aligned05	1/12/2026 2:08 PM	PNG File	2,410 KB
aligned06	1/12/2026 2:08 PM	PNG File	2,354 KB
Calib-4E07-XNJU_20250917_1255	1/12/2026 2:08 PM	PNG File	1,264 KB
Calib-4E07-XNJU_20250917_1255	1/12/2026 2:08 PM	Yaml Source File	10 KB
G500-08b-repeat-003.tmd	1/12/2026 2:08 PM	TMD File	16,447 KB
G500-08b-repeat-003_nrm	1/12/2026 2:08 PM	PNG File	20,246 KB
analysis	1/12/2026 2:08 PM	File folder	

Root folder. The analysis folder has a single doc in it – scancontext.yml:

```
version: 3.7
shapes:
  - id: 2048951235
    type: circle
    snapmargin: 0.3 mm
    points: '[(768.993307721, 1035.34764248), (1011.97231876, 581.374118663), (1456.6600205, 863.044055032)]'
    routines:
      - type: HoleByEdge
        id: 1538058288
        name: Hole Diameter
        annotationids: '[]'
        edgesearch: 0.6
        regionmode: top
        nominaldiameter: 1.778
        primaryshapeid: 2048951235
        diameter: 1.91052823765 mm
        circularity: 0.0304728653581 mm
        circle: (1116.56578235, 927.845944351, 348.515461315)
        minpt: (1387, 716)
        maxpt: (972, 604)
        meta_PassedAnalysis: True
        meta_sdkversion: 4.2.240.0
```

scancontext.yml

DefectDetection

Monday, January 12, 2026 2:29 PM

 G500-08b-repeat-001_nrm	1/12/2026 2:08 PM	PNG File	20,198 KB
 image01	1/12/2026 2:08 PM	PNG File	3,003 KB
 image02	1/12/2026 2:08 PM	PNG File	3,012 KB
 image03	1/12/2026 2:08 PM	PNG File	3,033 KB
 image04	1/12/2026 2:08 PM	PNG File	3,017 KB
 image05	1/12/2026 2:08 PM	PNG File	3,011 KB
 image06	1/12/2026 2:08 PM	PNG File	3,060 KB
 image07	1/12/2026 2:08 PM	PNG File	2,942 KB
 scan	1/12/2026 2:08 PM	Yaml Source File	2 KB
 scan.yaml.bak	1/12/2026 2:08 PM	BAK File	2 KB
 thumbnail	1/12/2026 2:08 PM	JPG File	4 KB
 aligned01	1/12/2026 2:08 PM	PNG File	2,345 KB
 aligned02	1/12/2026 2:08 PM	PNG File	2,448 KB
 aligned03	1/12/2026 2:08 PM	PNG File	2,404 KB
 aligned04	1/12/2026 2:08 PM	PNG File	2,134 KB
 aligned05	1/12/2026 2:08 PM	PNG File	2,494 KB
 aligned06	1/12/2026 2:08 PM	PNG File	2,441 KB
 Calib-4E07-XNJU_20250917_1255	1/12/2026 2:08 PM	PNG File	1,264 KB
 Calib-4E07-XNJU_20250917_1255	1/12/2026 2:08 PM	Yaml Source File	10 KB
 G500-08b-repeat-001.tmd	1/12/2026 2:08 PM	TMD File	16,447 KB
 analysis	1/12/2026 2:08 PM	File folder	

Root folder

 scancontext	1/12/2026 2:08 PM	Yaml Source File
 io_881565834	1/12/2026 2:08 PM	File folder

The analysis folder - there is a single image in the "io_" folder.

```
version: 3.7
shapes:
- id: 1285316935
  type: rectangle
  x: 662.142857143
  y: 545.766233766
  w: 1360.4025974
  h: 1149.72077922
  rotation: 0
  routines:
- type: DefectDetection
  id: 881565834
  name: Defect Detection
  annotationids: '[]'
  scratchtype36: 2
  autothreshold: true
  depththreshold: 0.005
  levelwidth: 0.35
  leveldiscardwidth: 0.2
  levelregions: '[(0, 0.350841848806, None), (1.54041499241, 1.88851588928, None)]'
  primaryshapeid: 1285316935
  debug: false
  length: 1.10483882013 mm
  width: 1.19671271864 mm
  area: 0.77854575067 mm2
  volume: 0.0218922324125 mm3
  depth: 0.0937405147929 mm
  point: (1327.9153795, 1087.67204659)
  image: image.png
  profile: '[(0, 0.00306085375458), (0.0027409519438, 0.00275573120608), (0.00548190388759, 0.00248190388759), (0.008237405147929, 0.0110209089424), (0.0109237405147929, 0.0137131224), (0.01361009519438, 0.01639920114), (0.016296458443, 0.0190855625577), (0.0189828219438, 0.0217720114), (0.0216691854438, 0.02445825577), (0.0243555489438, 0.0271345920114), (0.0270419124438, 0.03981095577), (0.0297282759438, 0.04249731864), (0.0324146394438, 0.04518368151), (0.0350010029438, 0.04786904438), (0.0376873664438, 0.05055440728), (0.0403737309438, 0.05323977015), (0.0430600944438, 0.05592513302), (0.0457464579438, 0.05861049589), (0.0484328214438, 0.06129585876), (0.0511191849438, 0.06398122163), (0.0538055484438, 0.0666665845), (0.0564919119438, 0.06935194737), (0.0591782754438, 0.07203731024), (0.0618646389438, 0.07472267311), (0.0645510024438, 0.07740803598), (0.0672373659438, 0.08009339885), (0.0799237294438, 0.08277876172), (0.0826100929438, 0.08546412459), (0.0852964564438, 0.08814948746), (0.0879828209438, 0.09083485033), (0.0906691844438, 0.0935202132), (0.0933555479438, 0.09620557607), (0.0960419114438, 0.09889093894), (0.0987282749438, 0.10157629181), (0.1014146384438, 0.10426165468), (0.1040910019438, 0.10694701755), (0.1067773654438, 0.10963238042), (0.1094637289438, 0.11231774329), (0.1121500924438, 0.11500310616), (0.1148364559438, 0.11768846903), (0.1175228194438, 0.1203738319), (0.1202091829438, 0.12305919477), (0.1228955464438, 0.12574455764), (0.1255819109438, 0.12842992051), (0.1282682744438, 0.13111528338), (0.1309546379438, 0.13379964625), (0.1336410014438, 0.13648500912), (0.1363273649438, 0.139170372), (0.1390137284438, 0.14185573487), (0.1416990919438, 0.14454109774), (0.1443854554438, 0.14722646061), (0.1470718189438, 0.15], [(-0.0027409519438, -0.00275573120608), (-0.00548190388759, -0.00248190388759), (-0.008237405147929, -0.0110209089424), (-0.0109237405147929, -0.0137131224), (-0.01361009519438, -0.01639920114), (-0.0162964584438, -0.0190855625577), (-0.0189828219438, -0.0217720114), (-0.0216691854438, -0.02445825577), (-0.0243555489438, -0.0271345920114), (-0.0270419124438, -0.03981095577), (-0.0324146394438, -0.04518368151), (-0.0376873664438, -0.05055440728), (-0.043060094438, -0.05592513302), (-0.0484328214438, -0.06129585876), (-0.0538055484438, -0.0666665845), (-0.0591782754438, -0.07203731024), (-0.0645510024438, -0.07740803598), (-0.069923729438, -0.08277876172), (-0.0752964564438, -0.08814948746), (-0.080669184438, -0.0935202132), (-0.086041911438, -0.09889093894), (-0.091414638438, -0.10426165468), (-0.096787365438, -0.11063238042), (-0.102160092438, -0.11700310616), (-0.107532819438, -0.1233738319), (-0.112905546438, -0.12974455764), (-0.118278274438, -0.13611528338), (-0.123651001438, -0.14248500912), (-0.129023728438, -0.14885573487), (-0.134396455438, -0.15522646061), (-0.139769091938, -0.16159964625), (-0.145141818938, -0.167970372), (-0.150513728438, -0.17434109774), (-0.155885455438, -0.18071246061), (-0.161257364938, -0.18708383438), (-0.166629091938, -0.19345520815), (-0.172000818938, -0.19982658192), (-0.177372546438, -0.20619795569), (-0.182744273438, -0.21256932946), (-0.188115991938, -0.21894070323), (-0.193487718938, -0.225312077), (-0.198859436438, -0.23168345077), (-0.204231153438, -0.23805482454), (-0.209602870938, -0.24442619831), (-0.214974588438, -0.25079757208), (-0.220346305438, -0.25716894585), (-0.225718022438, -0.26354031962), (-0.231089739438, -0.26991169339), (-0.236461456438, -0.27628306716), (-0.241833173438, -0.28265444093), (-0.247204890438, -0.2890258147), (-0.252576607438, -0.29539718847), (-0.257948324438, -0.30176856224), (-0.263320041438, -0.30813993601), (-0.268691758438, -0.31451130978), (-0.274063475438, -0.32088268355), (-0.279435192438, -0.32725405732), (-0.284806909438, -0.33362543109), (-0.289178626438, -0.34000680486), (-0.294550343438, -0.34638817863), (-0.299922060438, -0.3527695524), (-0.305293777438, -0.35914092617), 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```

Schema Example

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Overview

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Provided by Neil on 1/12/2026

```
version: 3.7
shapes:
  - id: 1633818830
    type: line
    regions: '[{"end: 3520.56692812, id: 1283848685, start: 0, width: 71.7399988813}]'
    snapmargin: 0.25 mm
    x1: 1226.10878661
    y1: 1010.61087866
    x2: 3700.61924686
    y2: 3514.84518828
  - id: 806847983
    type: ruler
    x1: 624.20083682
    y1: 1233.53974895
    x2: 639.062761506
    y2: 3566.86192469
  - id: 662335758
    type: circle
    snapmargin: 0.25 mm
    x: 1619.94979079
    y: 1419.31380753
    r: 752.54775861
  - id: 1252392894
    type: circle
    snapmargin: 0.25 mm
    x: 2467.07949791
    y: 2920.36820084
    r: 828.443995398
  - id: 1438146663
    type: circle
    snapmargin: 0.25 mm
    x: 1478.76150628
    y: 1426.74476987
    r: 420.686986142
  - id: 133020922
    type: rectangle
    x: 720.80334728
    y: 1367.29707113
    w: 2348.18410042
    h: 1478.76150628
    rotation: 0
  - id: 1180352671
```

Scancontext.yml

Shape Schema

ShapeRegion

Field	Type	Nullable
id	Integer (PK)	No
start	Double	No
end	Double	No

width	Double	No
-------	--------	----

Shape

Field	Type	
id	Integer (PK)	No
type	String	No
shapeid	Integer (FK:type)	No

LineShape

Field	Type	Nullable
id	Integer (PK)	No
shapeid	Integer (FK:shape)	No
regionids	List<Integer, FK:ShapeRegion>	Yes
snapmargin	String	No
x1	Double	No
y1	Double	No
x2	Double	No
y2	Double	No

CircleShape

Field	Type	Nullable
id	Integer (PK)	No
shapeid	Integer (FK:shape)	No
snapmargin	String	No
x	Double	No
y	Double	No
r	Double	No

RectangleShape

Field	Type	Nullable
id	Integer (PK)	No
shapeid	Integer (FK:shape)	No
x	Double	No
y	Double	No
width	Double	No
height	Double	No
rotation	Double	No

Annotation

Field	Type	Nullable
id	Integer (PK)	No
type	String	No
typeid	Integer (FK:type)	No

Ruler

Field	Type	Nullable
id	Integer (PK)	No
annotationid	Integer (FK:Annotation)	No
x1	Integer	No
y1	Integer	No
x2	Integer	No
y2	Integer	No

Object Schema

Line

Field	Type	Nullable
id	Integer (PK)	No
x1	Integer	No
y1	Integer	No
x2	Integer	No
y2	Integer	No

Point

Field	Type	Nullable
id	Integer (PK)	No
x	Integer	No
y	Integer	No

Circle

Field	Type	Nullable
id	Integer (PK)	No
x	Double	No
y	Double	No
r	Double	No

Profile

Field	Type	Nullable
id	Integer (PK)	No

pointids	List<Integer, FK:Point>	No
----------	-------------------------	----

OffsetRegion

Field	Type	Nullable
id	Integer (PK)	No
xmin	Double	No
xmax	Double	No
description	String	No

Routine Schema

Offset

Field	Type	Nullable
id	Integer (PK)	No
annotationids	List<Integer, FK:Annotation>	Yes
levelorder	Integer	Yes
levelregionids	List<Integer, FK:Profile>	Yes
numprofiles	Integer	No
profilewidth	Double	No
reintegrate	Bool	No
primaryshapeid	Integer (FK:LineShape)	No
offsetregion1	OffsetRegion	No
offsetregion2	OffsetRegion	No
debug	Bool	No
offset	Double	No
width	Double	No
profile	Profile	No
region1	Profile	No
region1pt	Point	No
point1	Point	No
region2	Profile	No
region2pt	Point	No
point2	Point	No
profilelineids	List<Integer, FK:Line>	No
autooffset	Bool	No
meta_PassedAnalysis	Bool	No
meta_FailureReason	String	Yes
meta_sdkversion	String	No

Scratch

Field	Type	Nullable
-------	------	----------

id	Integer (PK)	No
annotationids	List<Integer, FK:Annotation>	Yes
tolerance	Double	No
filtersg	Double	No
polyorder	Integer	No
shapeids	List<Integer, FK:Shape>	Yes
debug	Bool	No
meta_PassedAnalysis	Bool	No
meta_FailureReason	String	Yes
meta_sdkversion	String	No

HoleDiameter

Field	Type	Nullable
id	Integer (PK)	No
annotationids	List<Integer, FK:Annotation>	Yes
edgesearch	Double	No
regionmode	String	No
nominaldiameter	Double	No
primaryshapeid	Integer (FK:Shape)	Yes
diameter	String	No
circularity	String	No
circleid	Integer (FK:Circle)	No
minptid	Integer (FK:Point)	No
maxptid	Integer (FK:Point)	No
debug	Bool	No
meta_PassedAnalysis	Bool	No
meta_FailureReason	String	Yes
meta_sdkversion	String	No

BendAnalysis

Field	Type	Nullable
id	Integer (PK)	No
annotationids	List<Integer, FK:Annotation>	Yes
low	Double	No
primaryshapeid	Integer (FK:Shape)	Yes
high	Double	No
debug	Bool	No
meta_PassedAnalysis	Bool	No
meta_FailureReason	String	Yes
meta_sdkversion	String	No

BevelAngle

Field	Type	Nullable
id	Integer (PK)	No
annotationids	List<Integer, FK:Annotation>	Yes
tolerance	Double	No
filtersg	Double	No
polyorder	Integer	No
shapeids	List<Integer, FK:Shape>	Yes
debug	Bool	No
meta_PassedAnalysis	Bool	No
meta_FailureReason	String	Yes
meta_sdkversion	String	No

ChannelBalance

Field	Type	Nullable
id	Integer (PK)	No
annotationids	List<Integer, FK:Annotation>	Yes
deviation	Double	No
averageintensity	Double	No
maxdeviation	Double	No
passfail	Bool	No
debug	Bool	No
meta_PassedAnalysis	Bool	No
meta_FailureReason	String	Yes
meta_sdkversion	String	No

CircleRefine

Field	Type	Nullable
id	Integer (PK)	No
annotationids	List<Integer, FK:Annotation>	Yes
primaryshapeid	Integer (FK:Shape)	Yes
debug	Bool	No
meta_PassedAnalysis	Bool	No
meta_FailureReason	String	Yes
meta_sdkversion	String	No

DefectDetection

Field	Type	Nullable
id	Integer (PK)	No
annotationids	List<Integer, FK:Annotation>	Yes

scratchtype36	<u>Double</u>	No
autothreshold	Bool	No
depththreshold	Double	No
levelwidth	Double	No
leveldiscardwidth	Double	No
levelregionids	List<Integer, FK: OffsetRegion>	No
primaryshapeid	Integer (FK:Shape)	No
debug	Bool	No
length	String	No
width	String	No
area	String	No
volume	String	No
depth	String	No
pointid	Integer (FK:Point)	No
image	String	No
profileid	Integer (FK:Profile)	No
minptid	Integer (FK:Point)	No
plotid	Integer (FK:Profile)	No
profilelineids	List<Integer, FK:Line>	No
debug	Bool	No
meta_PassedAnalysis	Bool	No
meta_FailureReason	String	Yes
meta_sdkversion	String	No

EdgeBreak

Field	Type	Nullable
id	Integer (PK)	No
annotationids	List<Integer, FK:Annotation>	Yes
edgetype	String	No
minradius	Double	No
maxradius	Double	No
shapeids	List<Integer, FK:Shape>	Yes
debug	Bool	No
meta_PassedAnalysis	Bool	No
meta_FailureReason	String	Yes
meta_sdkversion	String	No

Sections

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These are the top-level sections in `scancontext.yaml`.

This is a breakdown of the **top-level structure of `scancontext.yaml`** and what each section represents. This focuses ONLY on the **outermost hierarchy** — the “shape of the file” — before diving into any shapes or routines themselves.

Top-Level Sections in `scancontext.yaml`

The top level typically contains **two major elements**:

shapes:

routines:

Below is what each section represents conceptually.

◊ 1. shapes:

What it is

A **list of geometric objects** detected or defined in the scan.

What it represents

These are the **raw geometric primitives** extracted directly from the image/scan.

Each entry under `shapes:` describes a geometric feature such as:

Shape Type	Meaning
line	A detected edge or measured profile axis
circle	Hole, boss, round feature
rectangle	Bounding box, ROI, inspection window
ruler	Calibration reference for unit scaling
(sometimes) profile, annotation, etc.	Depending on scanner version

Each shape includes:

- **id**: unique identifier
- **type**
- **coordinates / size** (x,y,width,height,radius)
- **snapmargin**: tolerance for fitting to image data
- **regions** (only for some shapes): sampling windows used by routines

Why this section exists

Because the inspection routines (next section) rely on referential geometry.

Think of shapes: as the **foundation** of all measurements.

◊ 2. routines:

What it is

A list of **analysis operations** performed on the scan.

These correspond to the measurement algorithms available in your system (Offset, Scratch, HoleDiameter, BendAnalysis, etc.)

What it represents

Each routine describes:

- Which shape(s) it uses
- How the measurement was computed
- All numeric results
- QA pass/fail metadata
- SDK version
- Debug status

A typical routine includes fields like:

- id
- type (Offset, Scratch...)
- primaryshapeid
- annotationids
- offset, width, tolerance, etc.
- profile (long array of sampled data)
- meta_PassedAnalysis
- meta_FailureReason
- meta_sdkversion

Why this section exists

This is the **core “results” section** — where all inspection output lives.

Without routines, the shapes would simply be geometry with no meaning.

The routines transform them into **measurements and actionable data**.



Putting It All Together: The Logical Structure

Here is the conceptual meaning of the entire YAML:

version: Defines the format of all data in this scan.

shapes: Defines all geometry extracted from the scan.

(lines, circles, rectangles, rulers...)

routines: Defines all measurements performed on the shapes.

(offset calculations, defect detection, profiling...)

This gives you a **two-layer model**:



Layer 1: Geometry (shapes)

Raw spatial information → *Where is everything located?*



Layer 2: Measurement (routines)

Analysis built on geometry → *What did we measure and what are the results?*



Why This File Is Structured This Way

This organization mimics:

- CAD systems (geometry + feature operations)
- Vision inspection systems (features + measurements)
- Metrology workflows (surfaces + evaluations)
- Offset/profiling tools (line → sample region → profile → measurement)

The **shapes** define the coordinate system of the part,
The **routines** define the analytical operations performed on that geometry.

ETL Spitballing

Tuesday, January 13, 2026 9:15 AM

Spitballing with Shean while we wait for more schema and access

Bronze

The raw scans themselves, untouched

Silver

Two tables: shapes and schema

Set data types and nullability. Flatten YAML fields.

Gold

- Dimension tables for BI
- Features tables for ML
- Fact tables for measurements
- Aggregate tables for reporting

Dimension tables (from "shapes")

- o Dim_line
- o Dim_circle
- o Dim_rectangle
- o Dim_ruler
- o More, depending on schema?

Fact Tables (from "routines")

- o Fact_offset_routine
- o Fact_scratch_routine
- o Fact_hole_diameter_routine
- o Fact_defect_detection_routine