

Table 1. Widely used datasets of lesion detection/segmentation and DR diagnosis/grading

| Dataset name | Number of images | Resolution | Camera | Availability |
|------------------------------|-------------------------------------|------------------------------------|---|---|
| DIARETDB0 | 130 (110 DR, 20 Normal) | - | digital fundus cameras with unknown camera settings, FVO 50° | available online ¹ |
| DIARETDB1 | 89 (84 DR, 5 Normal) | 1500×1152 | ZEISS FF 450plus fundus camera with Nikon F5 digital camera, FOV 50° | available online ² |
| Retinopathy Online Challenge | 100 | - | a Topcon NW 100, a Topcon NW 200, or a CanonCR5-45NM, 2 differently shaped FOVs | available on registration ³ |
| RC-RGB-MA | 250 | 2595×1944 | a DRS non-mydratic fundus camera, FOV45° | available online ⁴ |
| RC-SLO-MA | 58 | 1024×1024 | an EasyScan camera (i-Optics Inc., the Netherlands), FOV45° | available online ⁵ |
| IDRiD | 516 | 4288×2848 | a Kowa VX-10 alpha digital fundus camera, FOV 50° | available online ⁶ |
| Messidor | 1200 | 1440×960, 2240×1488, 2304×1536 | a color video 3CCD camera on a Topcon TRC NW6 non-mydratic retinograph with FOV 45° | available on registration ⁷ |
| Messidor-2 | 1748 | 1440×960, 2240×1488, 2304×1536 | a Topcon TRC NW6 non-mydratic fundus camera with FOV 45° | available on registration ⁸ |
| e-optha EX | 47 with 12,278 exudates, 35 healthy | ranging from 1440×960 to 2544×1696 | - | available on registration ⁹ |
| e-optha MA | 148 with 1306 MA, 233 healthy | ranging from 1440×960 to 2544×1696 | - | available on registration ¹⁰ |
| DDR | 13,673 | mixed | 42 types of fundus cameras with a 45°FOV | available online ¹¹ |
| Kaggle/EyeP | 35,126 train, | mixed | multiple fundus cameras and different fields of views | available on registration ¹² |
| ACS | 53,576 test | | | |
| CLEOPATRA | 298 | - | multiple fundus cameras | not available online |

1 <https://www.it.lut.fi/project/imageret/>

2 <https://www.it.lut.fi/project/imageret/>

3 <http://webeye.ophth.uiowa.edu/ROC/>

4 <http://www.retinacheck.org/datasets>

5 <http://www.retinacheck.org/datasets>

6 <https://ieee-dataport.org/open-access/indian-diabetic-retinopathy-image-dataset-idrid>

7 <http://www.adcis.net/en/third-party/messidor/>

8 <http://www.adcis.net/en/third-party/messidor2/>

9 <http://www.adcis.net/en/third-party/e-optha/>

10 <http://www.adcis.net/en/third-party/e-optha/>

11<https://github.com/nkicls/DDR-dataset>

12<https://www.kaggle.com/c/diabetic-retinopathy-detection/datasets>

Table 2. Widely used datasets for vessel segmentation

| Dataset name | Number of images | Resolution | Camera | Availability |
|--------------|---|-------------|---|--|
| DRIVE | 40 (33 healthy, 7 mild early DR) | 768×584 | a Canon CR5 non-mydratic 3CCD camera, FOV 45° | available on registration ¹ |
| STARE | 400 (vessel segmentation labeling of 40 , A/V labeling of 10) | 700 × 605 | a TopCon TRV-50 fundus camera, FOV35° | available online ² |
| CHASE DB1 | 28 | 1280× 960 | - | available online ³ |
| HRF | 45, 15 each of healthy, DR and glaucomatous | 3504 × 2336 | a Canon CR-1 fundus camera with FOV 45° | available online ⁴ |

1<https://drive.grand-challenge.org/Download/>

2<http://cecas.clemson.edu/~ahoover/stare/>

3<https://blogs.kingston.ac.uk/retinal/chasedb1/>

4<http://www5.cs.fau.de/research/data/fundus-images/>

Table 3. Widely used datasets for OD/OC segmentation and glaucoma diagnosis/grading

| Dataset name | Number of images | Resolution | Camera | Availability |
|--------------|------------------------------------|--------------------------------------|--|---|
| ONHSD | 100 | 640×480 | a Canon CR6 45MNf fundus camera, FOV 45° | available online ¹ |
| Drishti-GS | 101 | 2896×1944 | a fundus camera with FOV 30° | available online ² |
| Drions-DB | 110 | 600×400 | a colour analogical fundus camera | available online ³ |
| ORIGA | 650 (168 glaucomatous, 482 normal) | 3072×2048 | - | not available online |
| RIGA | 750 | ranging from 2240×1488 to 2743×1936 | multiple fundus cameras with different FOV | available online ⁴ |
| RIM-ONE | 169 ONH | - | a fundus camera Nidek AFC-210 with a body of a Canon EOS 5D Mark II of 21.1 megapixels | not available online |
| ACHIKO-K | 258 (144 glaucomatic) | 640 × 480; 2144×1424; 3216×2136, etc | NIKON D80, NIKON D90 | available online ⁵ |
| SEED | 235 (43 glaucoma) | - | - | not available online |

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|--------|------------------------|---------------------------------------|---|--|
| REFUGE | 1200 | 2124×2056, 1634×1634 | a Zeiss Visucam 500 fundus camera and a Canon CR-2 device | available on registration ⁶ |
| SCES | 1676 | 3072×2048 | - | not available online |
| SINDI | 5783 | 3072×2048 | - | not available online |
| LAG | 11,760 (6882 glaucoma) | ranging from 582 × 597 to 3456 × 5184 | 3 types of devices: Topcon, Canon and Carl Zeiss | available online ⁷ |

1<http://www.aldiri.info/Image%20Datasets/ONHSD.aspx>

2<http://cvit.iiit.ac.in/projects/mip/drishti-gs/mip-dataset2/Home.php>

3https://www.researchgate.net/publication/326460478_Glaucoma_dataset_-_DRIONS-DB

4https://deepblue.lib.umich.edu/data/concern/data_sets/3b591905z/

5<https://oar.a-star.edu.sg/jspui/handle/123456789/1080?mode=full>

6<https://refuge.grand-challenge.org/>

7<https://github.com/smilell/AG-CNN>

Table 4. Widely used datasets for AMD diagnosis/grading

| Dataset name | Number of images | Resolution | Camera | Availability |
|----------------|------------------------------|------------|--------|--|
| AREDS | Over 206,500 images | - | - | available online ¹ |
| iChallenge-AMD | 1200 | - | - | available on registration ² |
| KORA | images from 2840 individuals | - | - | available online ³ |

1https://www.ncbi.nlm.nih.gov/projects/gap/cgi-bin/study.cgi?study_id=phs000001.v3.p1

2<http://ai.baidu.com/broad/introduction?dataset=amd>

3<https://epi.helmholtz-muenchen.de/>

Table 5. Widely used datasets for other tasks

| Dataset name | Task | Number of images | Resolution | Camera | Availability |
|--------------|---------------------|--------------------|------------|---|--|
| ODIR | Multiple-disease | Over 10,000 images | mixed | various cameras including Canon, Zeiss and Kowa | available online ¹ |
| PALM | Pathological myopia | - | - | - | available on registration ² |
| FIRE | Image Registration | 129 | 2912x2912 | a Nidek AFC-210 fundus camera, FOV of 45° | available online ³ |

1<https://github.com/nkicisl/OIA-ODIR>

2<https://palm.grand-challenge.org/>

3<https://projects.ics.forth.gr/cvrl/fire/>