



CLINICAL GUIDELINE

Diabetic Eye Screening Grading Scheme Guidance (SOAS)

A guideline is intended to assist healthcare professionals in the choice of disease-specific treatments.

Clinical judgement should be exercised on the applicability of any guideline, influenced by individual patient characteristics. Clinicians should be mindful of the potential for harmful polypharmacy and increased susceptibility to adverse drug reactions in patients with multiple morbidities or frailty.

If, after discussion with the patient or carer, there are good reasons for not following a guideline, it is good practice to record these and communicate them to others involved in the care of the patient.

Version Number:	7
Does this version include changes to clinical advice:	No
Date Approved:	27 th August 2025
Date of Next Review:	31 st August 2026
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Approval Group:	National Diabetic Eye Screening Programme Board
Guideline ID Number:	272

Important Note:

The online version of this document is the only version that is maintained.
Any printed copies should therefore be viewed as 'Uncontrolled' and as such, may not necessarily contain the latest updates and amendments.

Screening Oversight Assurance Scotland (SOAS)



Diabetic Eye Screening

Grading Scheme Guidance

Created Date: 27 August 2025

Review Date: 27 August 2026

Version	Date	Change	Author	Authorised
1.0		Initial Grading Scheme. No dates available as no document control page available.	DES Groups	Clinical Lead DES
2.0		Updated Grading Scheme. No dates available as no document control page available.	DES Groups	Clinical Lead DES
3.0	28 February 2025	Review to accommodate changes to grading scheme and update of images which are clearer. Shared with DES Governance Groups. Document control sheet inserted.	DES Matrix Grading Group; Mike Gavin, Neville Lee, Samantha Creamer, Lynsey Scott, Keith Bell, Jodie Meggison	Mike Gavin Clinical Lead
3.1	27 August 2025	Insertion of oct ungradeable image supplied by Mike Gavin and change of colour scheme/font to aid recognition of new scheme.	Mike Gavin Samantha Creamer	Mike Gavin Clinical Lead

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Guidance for changes to Scottish Diabetic Eye Screening Programme

Grading Scheme (updated 27/08/2025)

The grading scheme is hierarchical, and feature based and applies to a macula centred image. The grade for each eye is determined by the lowest grade compatible with the features present. Maculopathy is graded separately and in addition to the overall retinopathy grade.

Retinopathy	Description	Outcome
R0 (no visible retinopathy)	No Diabetic Retinopathy anywhere	Rescreen 12 months (24 months if 2xR0M0 – Optomize will determine)
R1 (mild)	Background Diabetic Retinopathy BDR – Mild The presence of at least one of any of the following features anywhere <ul style="list-style-type: none"> • Dot haemorrhages/microaneurysms • Hard exudates • Cotton wool spots • Blot haemorrhages (<4 in one or both hemi-fields) • Flame haemorrhages 	Rescreen 12 months
R2 (observable background)	Background Diabetic Retinopathy BDR – Observable Four or more blot haemorrhages in one hemi-field only (Inferior and superior hemi-fields delineated by a line passing through the centre of the fovea and optic disc)	Rescreen 6 months
R3 (referable background)	Background Diabetic Retinopathy BDR – Referable Any of the following features: <ul style="list-style-type: none"> • Four or more blot haemorrhages in both inferior and superior hemi-fields • Venous beading • IRMA 	Refer Ophthalmology - Routine
R4 (proliferative)	Proliferative Diabetic Retinopathy PDR Any of the following features: <ul style="list-style-type: none"> • Active new vessels at the Optic Disc or Elsewhere • Vitreous haemorrhage. 	Refer Ophthalmology - Urgent These patients are likely to receive laser treatment or another intervention.
R4i (inactive proliferative)	Treated Proliferative Diabetic Retinopathy PDR Any of the following features: <ul style="list-style-type: none"> • new vessels with evidence of laser treatment 	Rescreen 12 months
R6 (inadequate)	Not Adequately Visualised Retina not sufficiently visible for assessment (optic disc not entirely visible/fovea less than 2DD from the edge of the image/3rd generation vessels radiating from fovea not visible) Note that Optomize will overrule an R6 if features sufficient to achieve a grade of R3, R4 or M2 are identified which require an ophthalmology referral.	Technical Failure Arrange alternative screening examination within the screening programme.

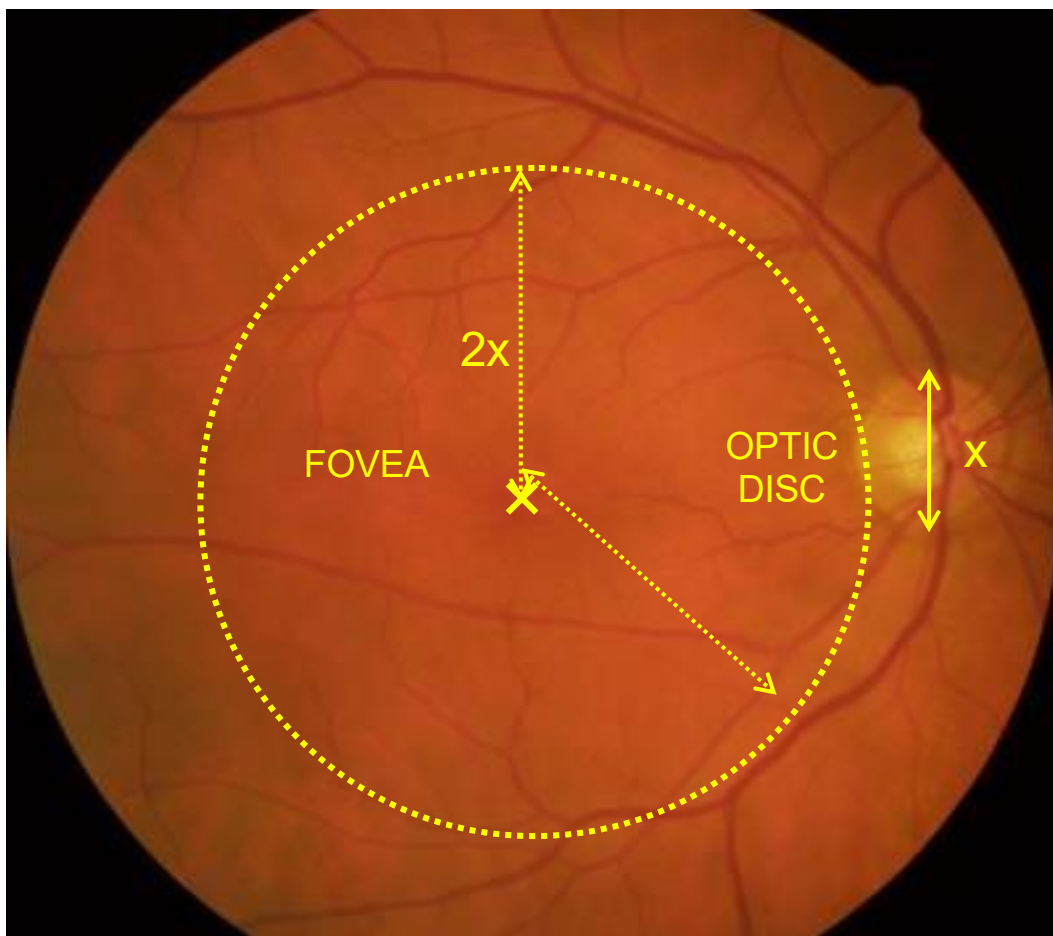
Maculopathy	Description	Outcome
M0 (No maculopathy)	No features \leq 2 disc diameters from the centre of the fovea sufficient to qualify for M1 or M2 as defined below.	Rescreen 12 months
M1 (Observable)	Hard exudates within a radius of > 1 but ≤ 2 disc diameters the centre of the fovea	Rescreen 12 months
M2	Hard exudates within a radius of ≤ 1 disc diameter of the centre of the fovea and vision better than 6/9.5 (0.2 logMAR or 75 ETDRS letters)	Rescreen 6 or 12 months (discretionary)
	Hard exudates within a radius of ≤ 1 disc diameter of the centre of the fovea and vision at 6/9.5 (0.2 logMAR or 75 ETDRS letters) or worse	For OCT surveillance scan

Coincidental findings	Description	Outcome
Photo-coagulation	Laser photocoagulation scars present: PRP / Macular / PRP + Macular	
Other	Other non-diabetic lesion present: <ul style="list-style-type: none"> ▪ Age-related macular degeneration ▪ Asteroid hyalosis ▪ Cupped Disc ▪ Drusen ▪ Myelinated nerve fibres ▪ Pigmented lesion (naevus) ▪ Retinal vein thrombosis ▪ Other Non-DR 	May require a Non-DR Referral depending on local arrangements, e.g. for new vein occlusion/ Wet AMD / suspicious naevus

OCT finding	Description		Outcome
ILM	Not visible within 5 ETDRS circle	OCT Technical failure	Refer ophthalmology
Field	5 central ETDRS zones outside scan area	OCT Technical failure	Refer ophthalmology
	Severe artefacts present	OCT Technical failure	Refer ophthalmology
Outer Ring Oedema	Visible Intra-retinal fluid within outer ETDRS ring	OCT observable Outer ring oedema	Rescreen with photographs and optical coherence tomography in 12 months. If vision is better than 6/9.5 (0.2 logMAR or 75 ETDRS letters), rescreen with photography only
Inner Ring Oedema	Visible Intra-retinal fluid within inner ETDRS ring	OCT observable Inner ring oedema	Rescreen with OCT 6 months and photography if necessary, annual photography cycle. If vision is better than 6/9.5 (0.2 logMAR or 75 ETDRS letters), rescreen in 6 months with photography only .
Central Oedema	Visible Intra-retinal fluid within centre of ETDRS grid and foveal contours preserved	OCT observable Central oedema	Rescreen with OCT 6 months and photography if necessary, annual photography cycle
	Visible Intra-retinal fluid within centre of ETDRS grid and foveal contours lost	OCT referable Central oedema	Refer ophthalmology
Non-DR	Age-related macular degeneration Drusen Retinal vein thrombosis Epiretinal membrane Other Non-DR		

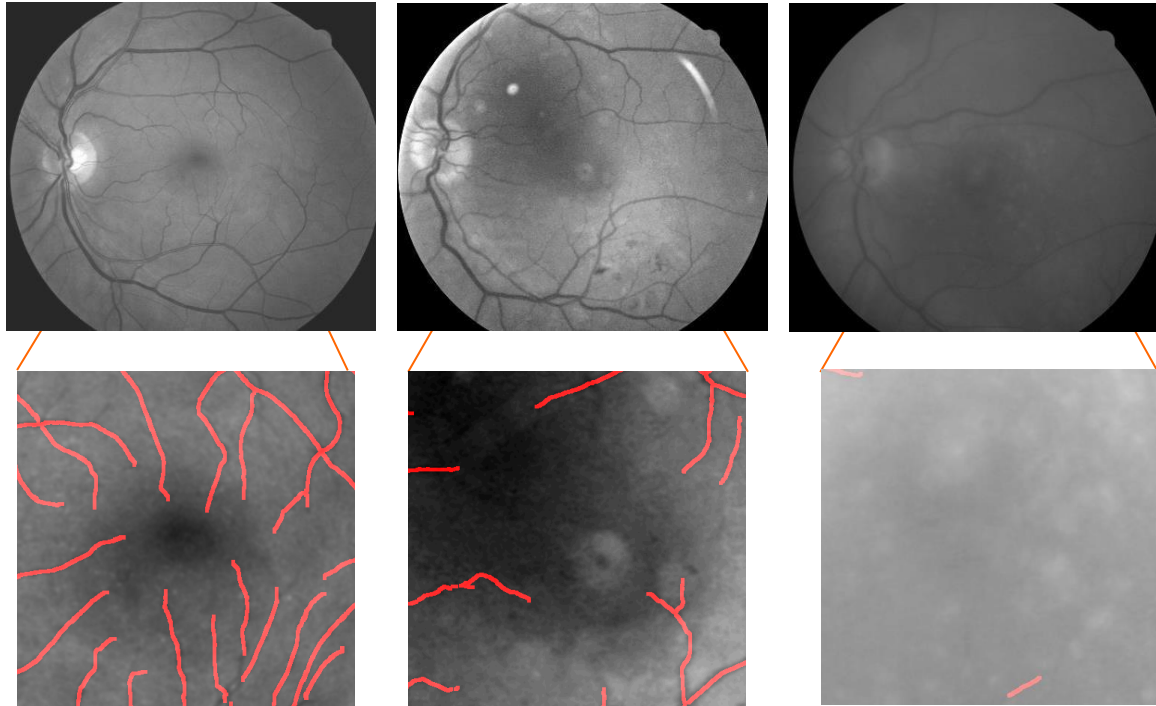
Image Quality Definition

1. An image with visible referable retinopathy or maculopathy is always an adequate image for the purposes of grading.
2. An image that has adequate quality for grading has both adequate field definition (“has the correct area of retina been photographed?”) and adequate clarity (“would referable retinopathy and maculopathy be identified *if* present”).
 - 2.1 An image with adequate field definition displays the intended macula centred 45° portion of the retina
 - 2.1.1. The entire optic disc must be displayed, with a rim of visible retina around it.
 - 2.1.2. The fovea must be at least 2.0 DD from the edge of the image.



2.2 An image with adequate image clarity allows referable retinopathy and maculopathy to be identified if present.

2.2.1. The third generation vessels radiating around the fovea must be visible.



Sample photos Retinopathy

R0 - A clear image that has no obvious microaneurysms.



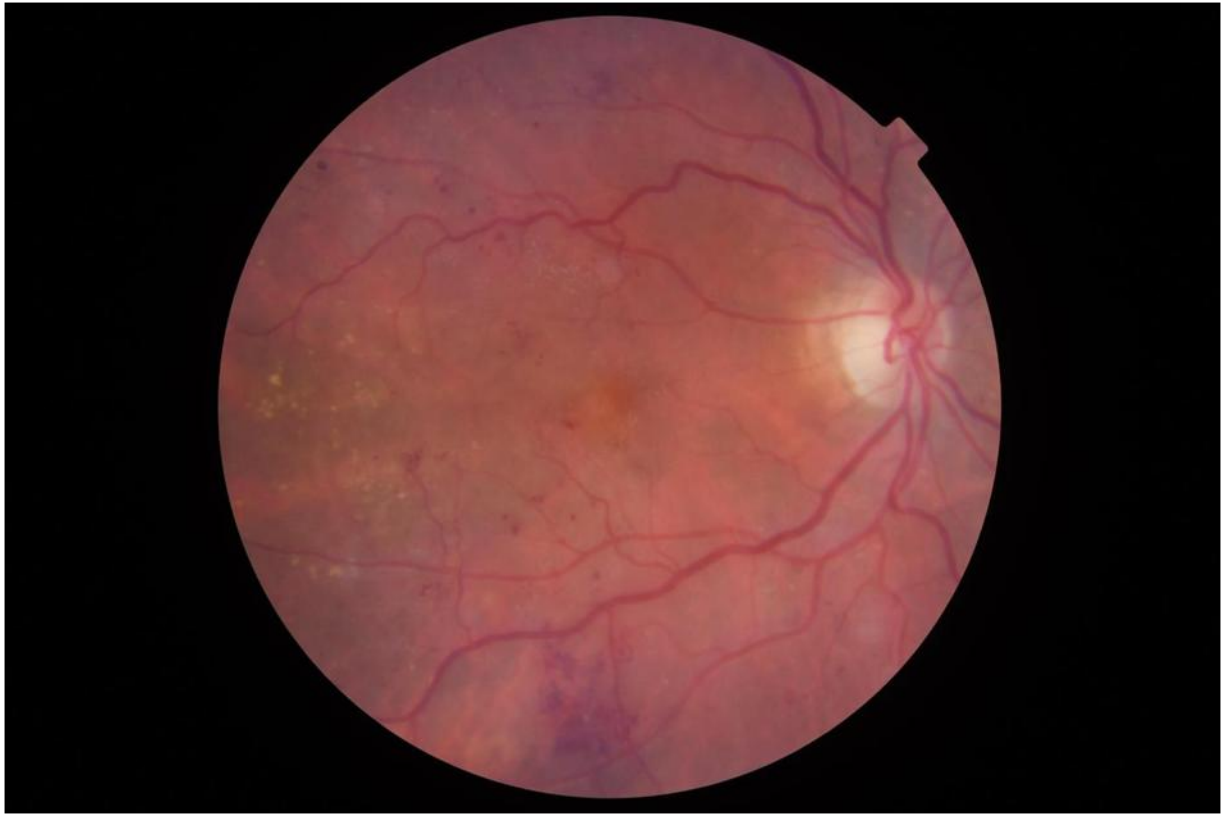
R1 - Microaneurysms visible near the fovea but no other obvious retinopathy.



R2 and R3 - Images that have blot haemorrhages in one or both hemi-fields.



R3. IRMA

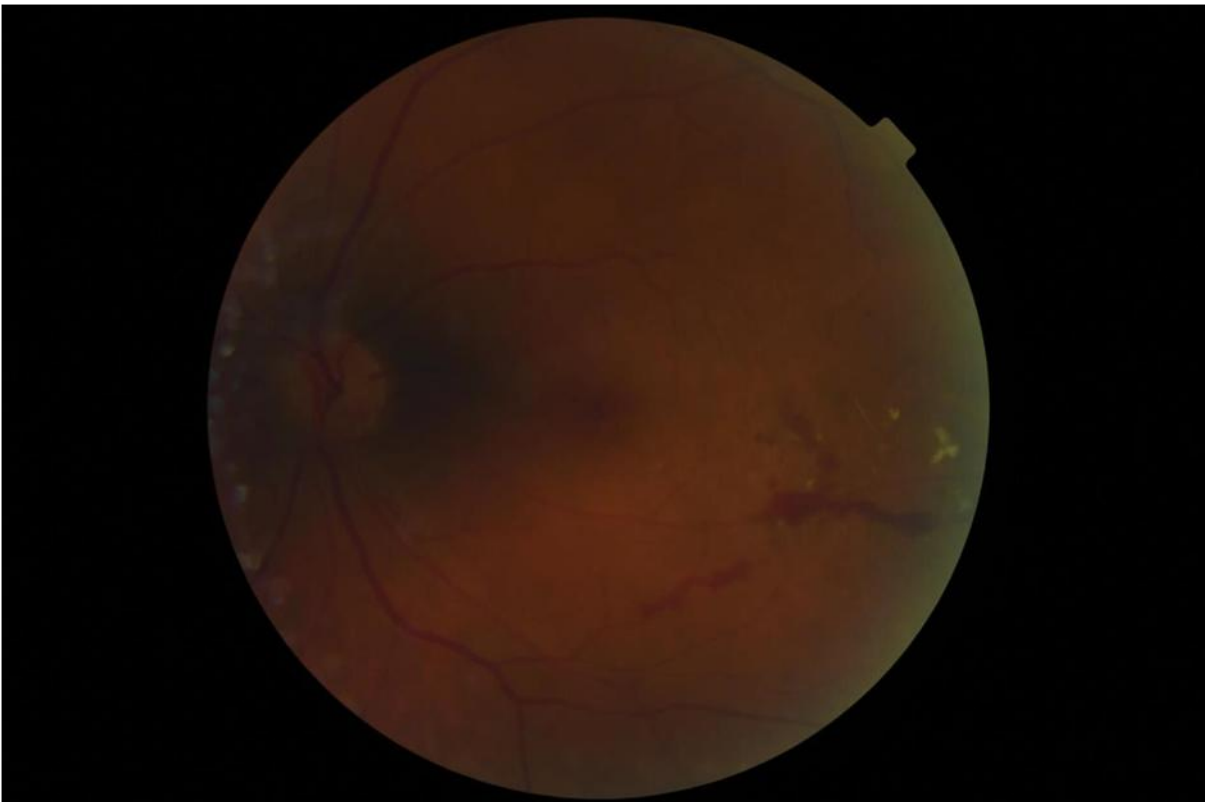


R4. New vessels at disc

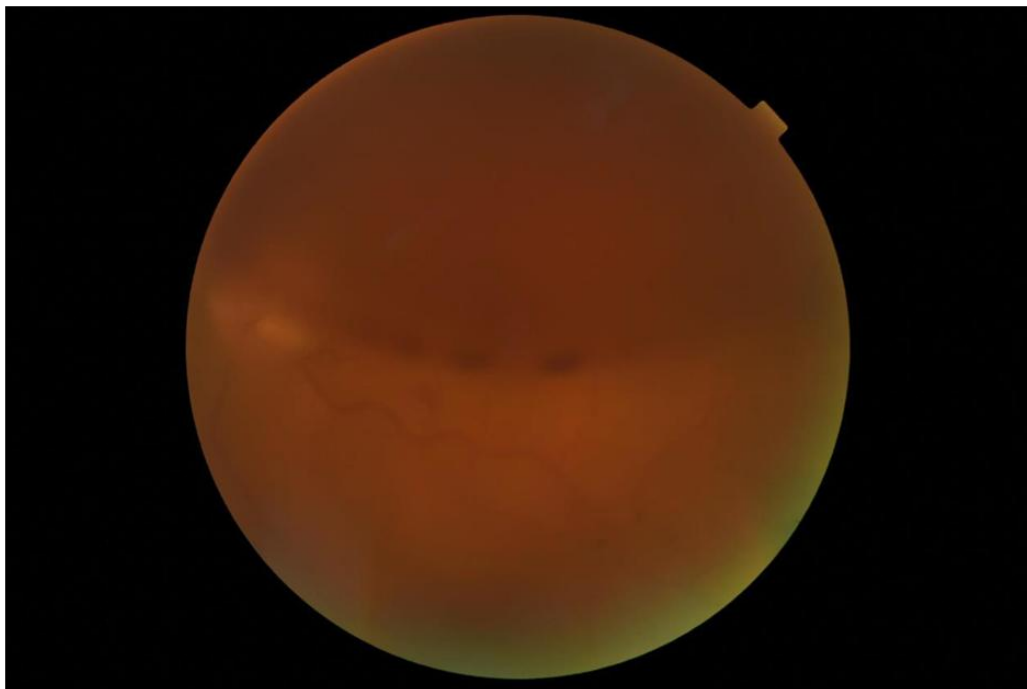
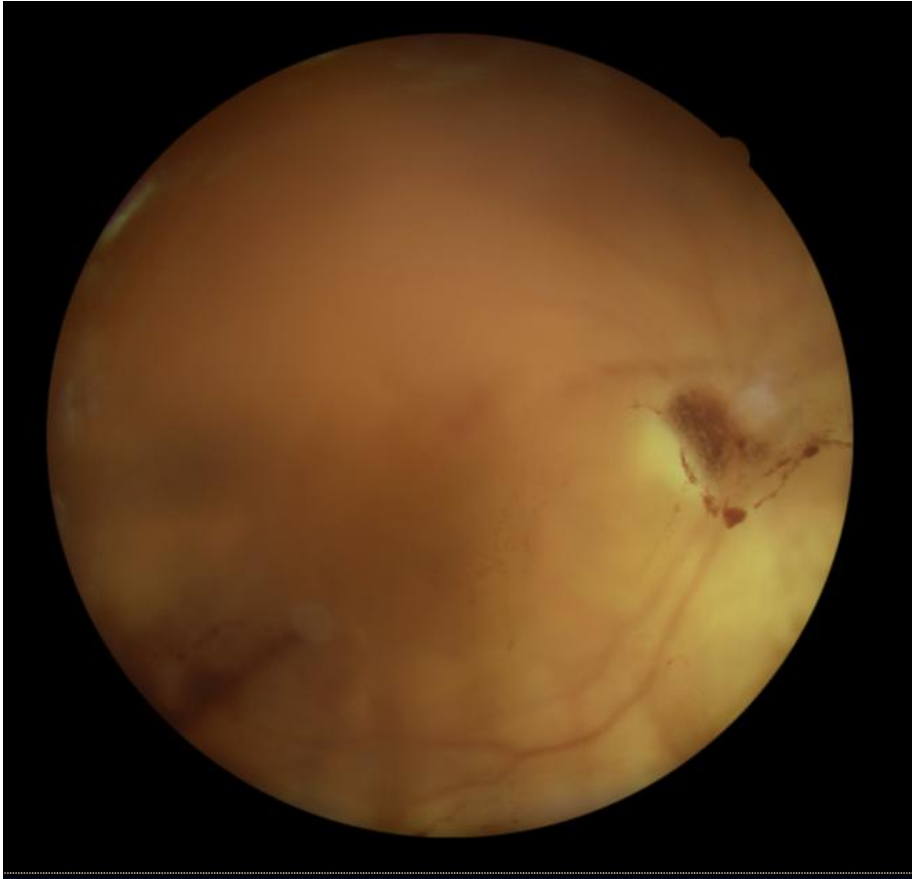




R4 – Pre-Retinal Haemorrhage / New Vessels Elsewhere



R4 – Vitreous Haemorrhage



Sample photos Maculopathy

M1 - Hard exudates present between 1 and 2 disc diameters of fovea.



M2 - Hard exudates present within 1 disc diameter of fovea.

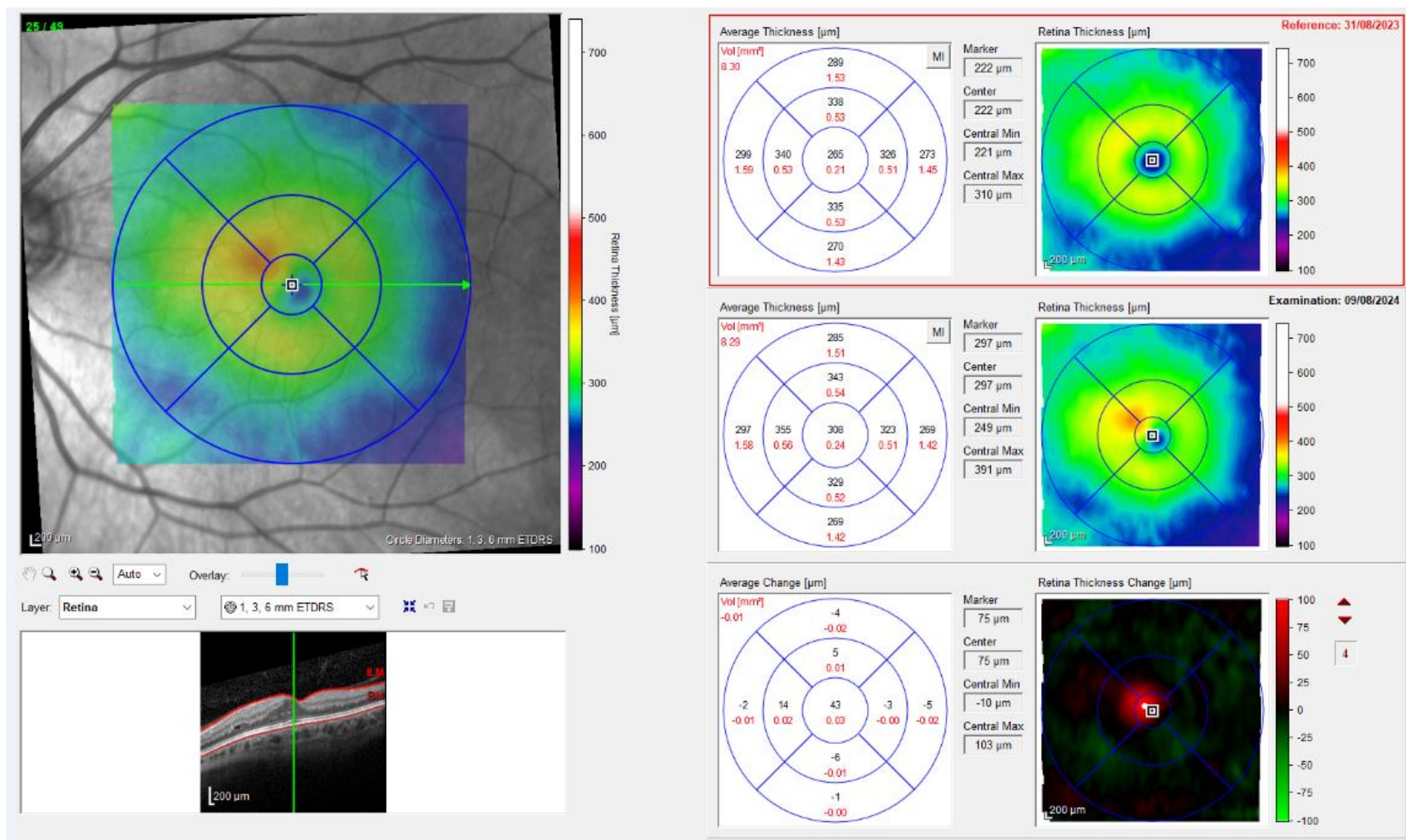


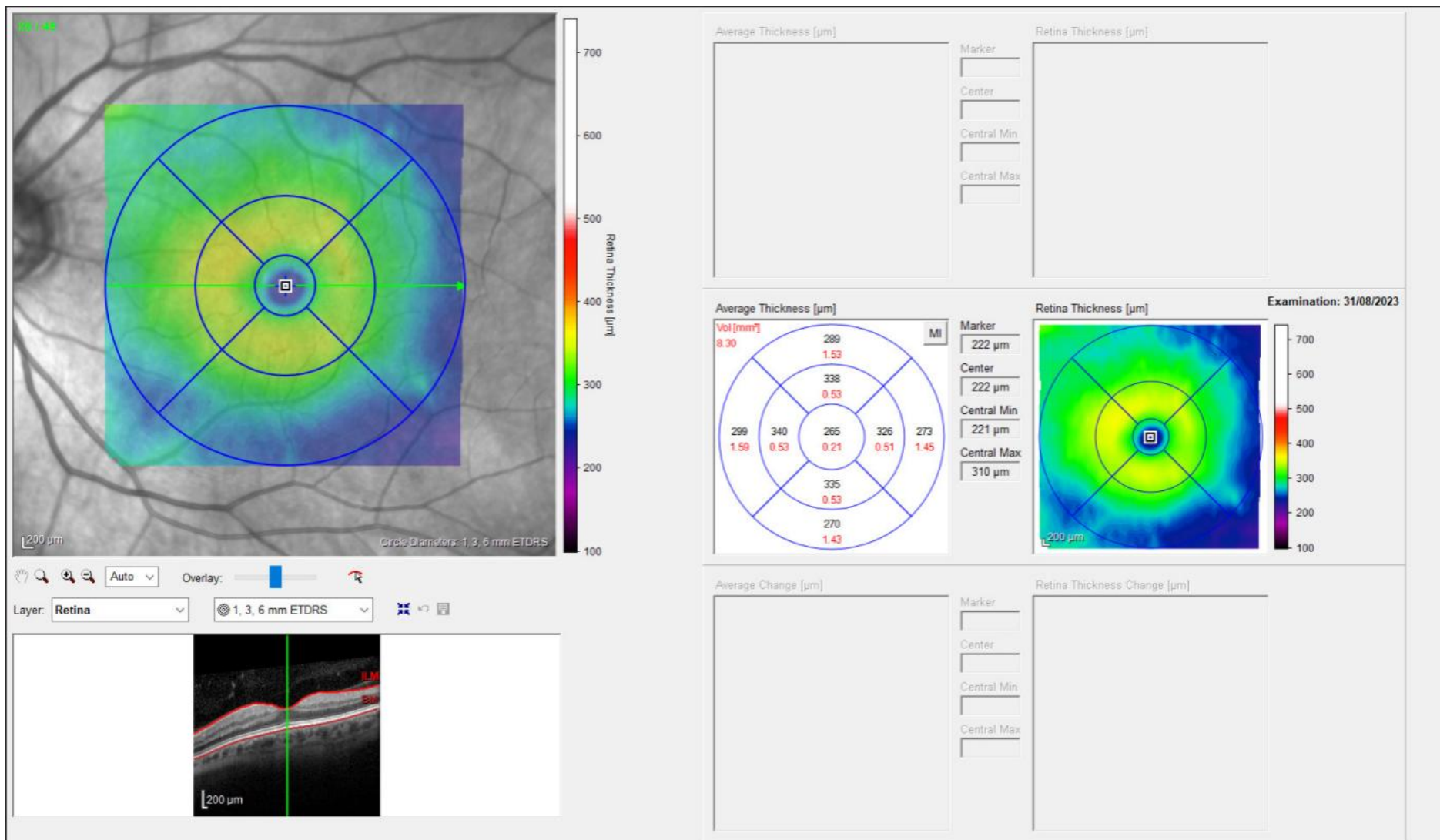
Sample photo Ungradable

R6 - A clearly ungradable image.

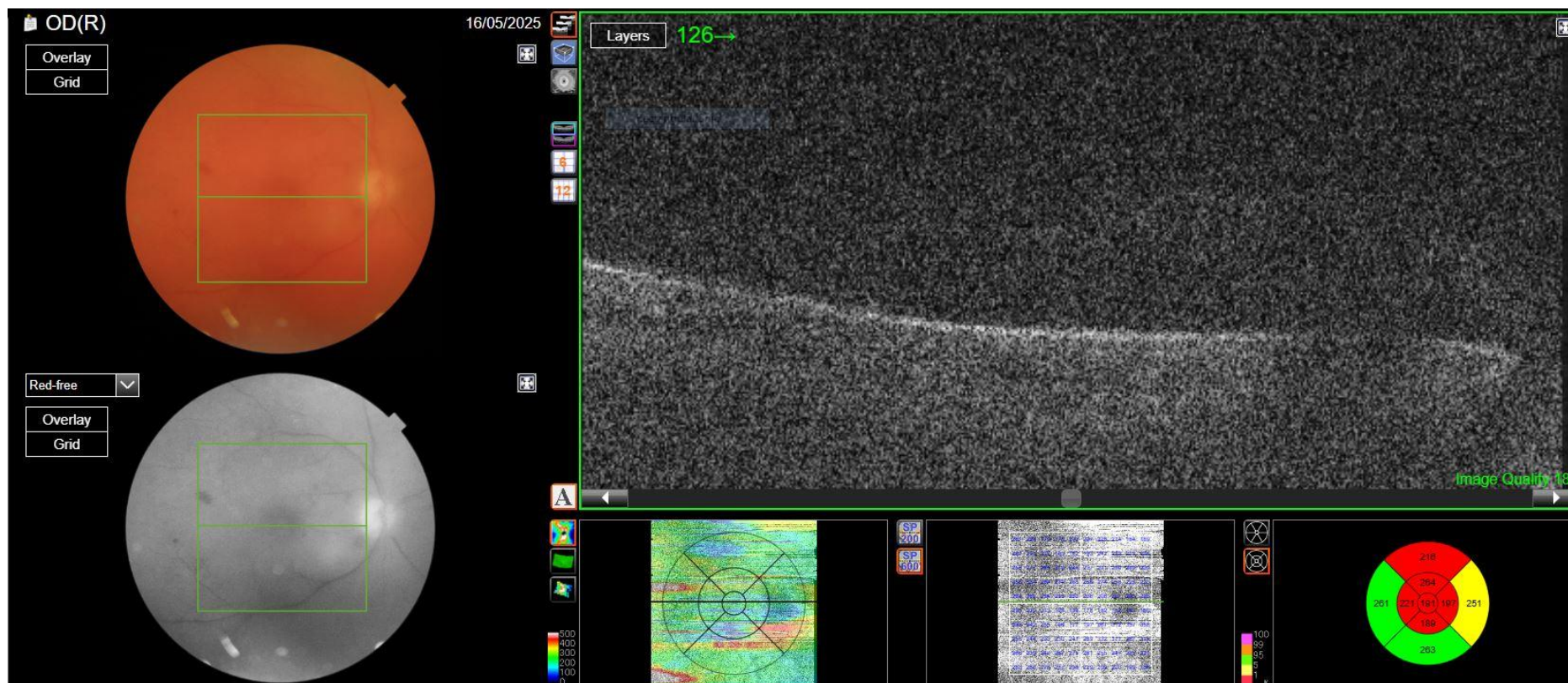


OCT IMAGE QUALITY – GRADABLE QUALITY

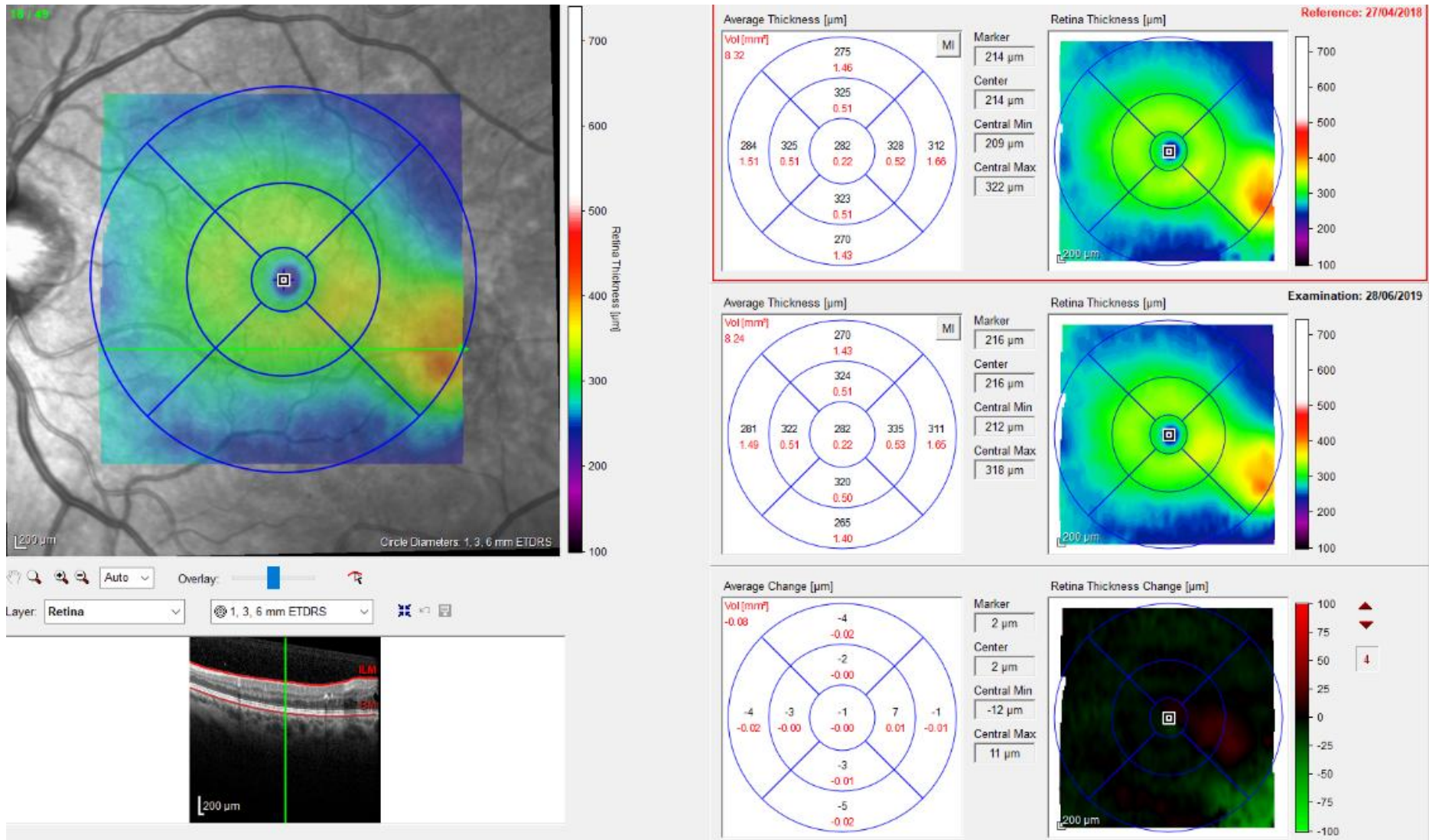




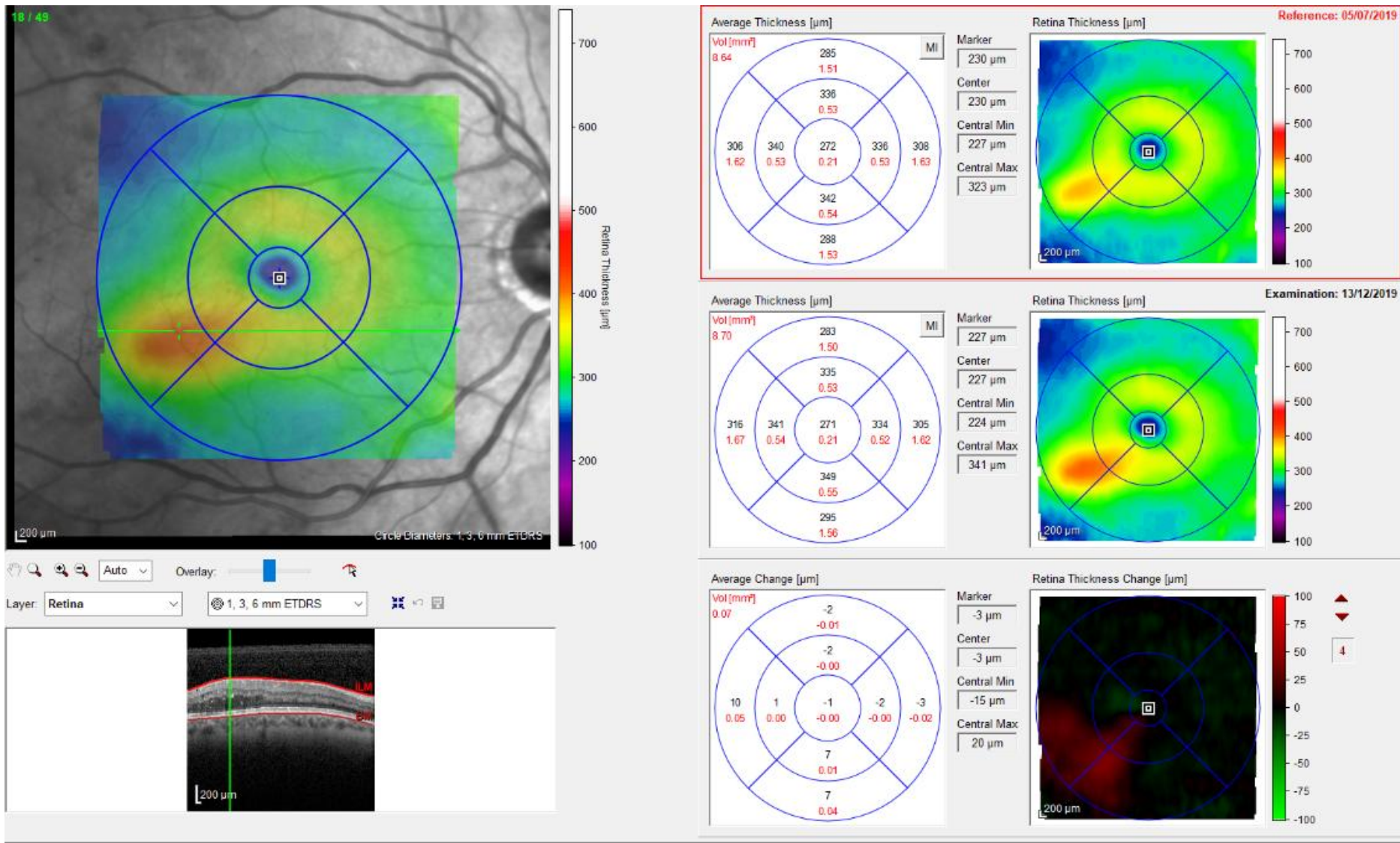
OCT IMAGE QUALITY – UNGRADABLE QUALITY



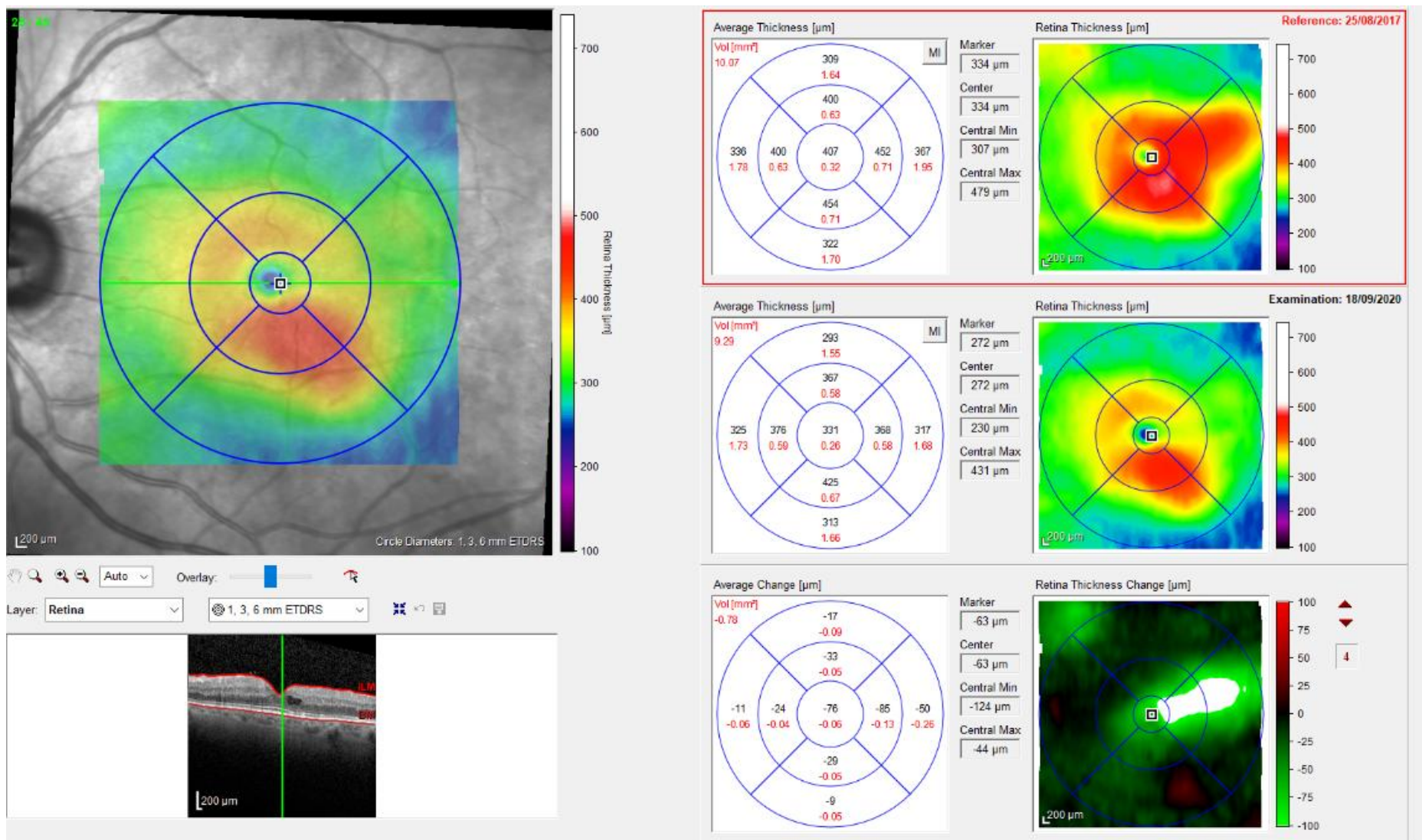
OCT – Outer Ring Oedema



OCT – Inner Ring Oedema



OCT – Observable Central Oedema



OCT – Referable Central Oedema

