

Contents

1	Basics	1
1.1	Appliance Construction	1
1.1.1	Application Overview	1
1.1.2	General Slit Lamp Design	1
1.1.3	Slit Illuminator (Light Projector)	2
1.1.4	Slit Lamp Microscope	4
1.1.5	Appliance Mechanics	6
1.1.6	Appliance Electronics	7
1.2	First Steps: Getting to Know Your Slit Lamp	7
1.2.1	Slit Beam	8
1.2.2	Observation Optics	11
1.2.3	Illumination and Observation Optics: A Very Special Relationship	16
	Literature	20
2	Biomicroscopy	21
2.1	Types of Illumination	21
2.1.1	Direct and Indirect Illumination	21
2.1.2	Direct Illumination	22
2.1.3	Indirect Illumination	29
2.1.4	Summary	37
2.2	Biomicroscopy without Additional Lenses	42
2.2.1	Examining Anterior Eye Segments	42
2.2.2	Further Examinations	48
2.3	Biomicroscopy with Additional Lenses	52
2.3.1	Fundus Observation and Gonioscopy with the Slit Lamp	52
2.3.2	Accessory Lenses for Fundoscopy and Gonioscopy: The Basics	52
2.3.3	Clinical Biomicroscopy with Additional Lenses	56
2.4	Accessory Equipment for Slit Lamps	66
2.4.1	Diagnostic Accessories	66
2.4.2	Accessory Equipment for Documentation: Photo Slit Lamps	69
2.4.3	Accessory Equipment for Therapeutic Purposes	73
	Literature	74

3	Videography: Basics	75
3.1	From Biomicroscopy to Videography	75
3.2	Fundamentals of Videography	75
3.2.1	Practicalities	75
3.2.2	Why Take Videographs?	77
3.2.3	What Should Be Videographed?	77
3.2.4	How Best to Videograph?	78
3.2.5	Photography Basics in Ophthalmology and Videography	78
3.2.6	The Videograph and Other Types of Documentation	80
3.2.7	New Opportunities in Videographic Documentation via Digitalization	81
3.2.8	Reimbursement for Videography in Ophthalmology	82
3.3	Equipment	84
3.3.1	Slit Lamp	84
3.3.2	Video Camera	84
3.3.3	Exam Chair	85
3.3.4	Additional Illumination and Occluder	85
3.3.5	Accessory Lenses	86
3.3.6	Recentration Prism	86
3.3.7	Monitors	87
3.3.8	Video Recording Equipment	88
3.3.9	Color Printer	89
3.4	Imaging Data	90
3.4.1	Image Acquisition	90
3.4.2	Image Processing	91
3.4.3	Image Assessment	94
3.4.4	Data Processing and Storage	99
	Literature	101
4	Special Videography	103
4.1	Applications	103
4.2	Videography of the Globe	103
4.2.1	External Overviews	103
4.2.2	Conjunctiva and Sclera	103
4.2.3	Cornea	104
4.2.4	Iris, Anterior Chamber, Iridocorneal Angle	111
4.2.5	Pupil	113
4.2.6	Lens	119
4.3	Videography of the Fundus	122
4.3.1	Basics	122
4.3.2	Image Acquisition in Fundus Videography	123
4.3.3	Image Processing in Fundus Videography	129
4.3.4	Image Assessment in Fundus Videography	135
4.3.5	External Findings in Fundus Videography	142

4.4	Videography of the Face	142
4.4.1	Image Acquisition in Facial Videography	142
4.4.2	Strabismus Videography	153
4.5	Final Reflections.	161
	Literature	162
5	Videographic Settings for Specific Diseases	165
5.1	The 20 Most Important Videographic Settings	165
5.1.1	Overview:	165
5.1.2	Without Ancillary Lenses	166
5.1.3	With the Goldmann Contact Lens	171
5.1.4	With the Fundus Handheld Lens	172
5.1.5	With the Minus Handheld Lens	178
5.2	Tips for Settings by Diagnosis and Atlas Chapter	182
5.2.1	Eyelids	182
5.2.2	Conjunctiva and Sclera	183
5.2.3	Cornea	183
5.2.4	Contact Lenses.	183
5.2.5	Iris	183
5.2.6	Lens	184
5.2.7	Vitreous Body	184
5.2.8	Retina and Choroid	184
5.2.9	Macula	185
5.2.10	Optic Nerve	185
5.2.11	Glaucoma.	185
5.2.12	Neuro-ophthalmology	185
5.2.13	Orbita, Lacrimal Disease	186
5.2.14	Strabismus	186
5.3	Videographic Atlas.	187
6	History of the Slit Lamp	189
6.1	Slit Lamp Construction.	189
6.1.1	Technical Developments Leading to the Slit Lamp	189
6.1.2	Gullstrand's Slit Lamp and Its Early Improvements	191
6.1.3	Further Improvements on the Slit Lamp	194
6.1.4	Fundus Examination	196
6.1.5	Gonioscopy	201
6.1.6	Slit Lamp Photography	202
6.2	Bibliography.	203
6.2.1	The Earliest German-Language Literature on the Slit Lamp.	203
6.2.2	Further Literature on the Slit Lamp.	205
6.2.3	Current Trends.	205
	Literature	207
	Index.	211