

Addendum 3: Castrop Formula Calculator Spreadsheet

J&J ZCB00	Name	Gender	Date of birth	Eye	LVC	CCT	AQD	ACD	LT	AL	R1	R2	AXIS	rpmean	WTW	CAS	RAUX	ALnew	ELP	K	IOL	Rx
Calibration	1000	1	19.06.1948	OD	0	612.00	2.35	2.96	4.27	23.64	8.07	8.07	----	6.71	12.34	0.41	0.27	23.67	4.57	40.75	23.50	-0.41
Calibration	1001	1	18.05.1947	OS	0	566.00	2.62	3.19	4.46	23.14	7.51	7.47	150.00	6.23	12.08	0.41	0.27	23.18	4.84	43.91	21.50	-0.35
Calibration	1002	1	22.11.1990	OS	0	493.00	3.48	3.97	4.50	23.48	7.69	7.54	171.00	6.33	12.41	0.41	0.27	23.50	5.39	43.17	22.00	-0.09
Calibration	1003	1	12.06.1934	OS	0	556.00	2.73	3.29	4.86	23.80	7.99	7.50	79.00	6.44	11.95	0.41	0.27	23.79	5.05	42.46	21.00	0.06
Calibration	1004	1	29.03.1929	OD	0	515.00	3.08	3.60	4.46	24.49	7.98	7.89	86.00	6.60	12.95	0.41	0.27	24.47	5.13	41.43	20.50	-0.23
Calibration	1005	1	18.05.1954	OS	0	566.00	2.90	3.47	4.62	24.31	7.74	7.66	80.00	6.40	11.92	0.41	0.27	24.29	5.13	42.71	19.50	-0.35
Calibration	1006	1	13.09.1965	OD	0	637.00	1.82	2.46	4.19	20.43	7.92	7.58	177.00	6.44	11.64	0.41	0.27	20.59	4.06	42.45	33.50	-0.85
Calibration	1007	1	07.11.1945	OS	0	506.00	2.93	3.44	4.93	22.90	7.67	7.52	100.00	6.31	11.83	0.41	0.27	22.92	5.17	43.29	23.50	0.10
Calibration	1008	1	19.03.1940	OD	0	565.00	2.70	3.27	4.56	23.56	7.91	7.72	103.00	6.50	12.41	0.41	0.27	23.57	4.91	42.08	22.50	-0.24
Calibration	1009	1	30.06.1929	OD	0	568.00	2.23	2.80	4.94	23.19	8.12	7.90	114.00	6.66	11.24	0.41	0.27	23.20	4.70	41.05	25.00	-0.29
Calibration	1010	1	07.11.1933	OS	0	578.00	2.64	3.22	4.50	23.55	8.04	7.91	162.00	6.63	12.95	0.41	0.27	23.57	4.84	41.23	23.50	-0.21
Calibration	1011	1	26.10.1942	OD	0	521.00	1.67	2.19	4.93	22.02	7.43	7.35	138.00	6.14	11.91	0.41	0.27	22.08	4.31	44.49	24.50	-0.67
Calibration	1012	1	16.01.1941	OS	0	602.00	1.99	2.59	5.31	23.24	8.02	7.76	126.00	6.56	12.19	0.41	0.27	23.22	4.73	41.68	24.00	-0.23
Calibration	1013	1	23.09.1927	OD	0	576.00	1.74	2.32	5.53	22.41	7.62	7.58	47.00	6.32	11.90	0.41	0.27	22.42	4.64	43.27	25.00	-0.31
Calibration	1014	1	13.10.1941	OD	0	540.00	2.46	3.00	4.80	22.87	7.56	7.50	109.00	6.26	11.94	0.41	0.27	22.90	4.84	43.67	22.50	-0.03
Calibration	1015	1	17.05.1938	OS	0	592.00	2.87	3.46	4.13	23.05	7.84	7.76	113.00	6.48	11.96	0.41	0.27	23.11	4.85	42.16	24.00	-0.18
Calibration	1016	1	01.11.1943	OD	0	550.00	3.45	4.00	4.75	25.18	8.14	8.02	179.00	6.72	13.73	0.41	0.27	25.12	5.54	40.69	19.50	0.12
Calibration	1017	1	29.06.1951	OD	0	564.00	1.91	2.47	4.59	22.61	7.90	7.82	11.00	6.53	12.06	0.41	0.27	22.66	4.34	41.83	25.50	-0.49
Calibration	1018	1	27.07.1968	OD	0	558.00	2.85	3.41	4.14	26.68	8.25	8.00	7.00	6.75	12.69	0.41	0.27	26.59	4.94	40.47	14.50	0.00
Calibration	1019	1	31.05.1933	OD	0	538.00	2.68	3.22	4.77	23.52	7.62	7.46	91.00	6.27	11.94	0.41	0.27	23.52	5.00	43.61	20.50	-0.09
Calibration	1020	1	22.06.1936	OD	0	497.00	2.74	3.24	4.42	23.78	7.51	7.40	93.00	6.20	11.66	0.41	0.27	23.79	4.89	44.10	18.50	-0.03
Calibration	1021	1	17.06.1944	OS	0	553.00	2.30	2.85	4.71	23.32	7.96	7.84	90.00	6.57	12.36	0.41	0.27	23.33	4.67	41.62	23.50	-0.20
Calibration	1022	1	11.09.1935	OD	0	557.00	2.66	3.22	4.99	24.53	8.00	7.66	101.00	6.51	12.18	0.41	0.27	24.48	5.09	41.99	19.50	-0.16
Calibration	1023	1	05.02.1957	OS	0	514.00	2.24	2.75	4.83	23.79	8.29	8.16	138.00	6.84	11.96	0.41	0.27	23.78	4.63	39.96	24.00	-0.20
Calibration	1024	1	30.12.1944	OS	0	495.00	3.48	3.98	4.34	26.34	8.50	8.32	79.00	6.99	12.17	0.41	0.27	26.25	5.36	39.08	18.00	-0.02
Calibration	1025	1	17.05.1950	OS	0	574.00	2.03	2.60	5.04	22.66	7.53	7.31	116.00	6.17	12.24	0.41	0.27	22.68	4.66	44.33	22.50	-0.33
Calibration	1026	1	29.12.1936	OS	0	547.00	2.74	3.29	4.33	24.29	7.68	7.50	50.00	6.31	13.18	0.41	0.27	24.28	4.89	43.32	18.00	-0.17
Calibration	1027	1	12.02.1981	OS	0	639.00	3.38	4.02	3.77	26.49	7.70	7.67	62.00	6.39	12.47	0.41	0.27	26.42	5.27	42.81	12.50	-0.34
Calibration	1028	1	19.11.1946	OS	0	563.00	2.62	3.18	4.57	22.45	7.59	7.40	13.00	6.23	11.90	0.41	0.27	22.51	4.84	43.88	24.00	-0.14
Calibration	1029	1	15.08.1926	OS	0	522.00	2.15	2.67	5.27	24.05	8.21	7.21	170.00	6.41	12.33	0.41	0.27	24.00	4.78	42.64	19.50	0.03

0 = normal cornea, 1 = LVC or other pathologies
 central corneal thickness
 internal chamber depth
 external chamber depth, derived from CCT+AQD
 lens thickness (optical)
 axial length (optical)
 flat r (mm)
 steep r (mm)
 flat axis (not required for power calc)
 derived from anterior r according to Liou & Brennan, can be overwritten if reliable m
 not required in current version
 comparable to Olsen's C constant, refers to LT
 2nd constant to adjust residual offsets
 ALas "sum of segments" according to Cooke
 ELP calc with or without corneal radii depending on column "F"
 derived corneal power (diopters, thick lens calc)
 in rare cases like LVC, it would make sense to overwrite this with a total K measured by tomography
 IOL to implant
 expected refraction (6 m = 20 ft)

data input, mandatory columns IOL constants derived values, no entry! output

Constants optimized on real refraction data so far

IOL	Cases	Cas	Raux
J&J ZCB00	91	0.41	0.25
Alcon SA60AT	296	0.37	0.00
Alcon Clareon	40	0.40	0.24
B&L MX60	136	0.42	0.01
Hoya Vivinex	30	0.40	0.14
J&J AAB00	85	0.39	-0.15