

The alternative drainage design software

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Seawinds, Carpenters Lane,
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Tel: 01983 740064

Job No.	1234/2010		
Sheet no.	1		
Date	24/09/10		
By	Checked	Approved	

MasterDrain
SW 12.23

Project **Crown Estates**

Title **Surcharge calcs (Sized at 2 yrs storm) for COLLEGE.SW - surcharged at 50 yrs storm.**

Free flowing outlet

PEAK hydrograph values printed

Mean rain intens. 86.00 mm/hr

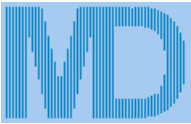
Peak rain intens. 337.12 mm/hr

Return period = 50 yrs

Storm duration = 15 mins

Storm profile = Summer 50%

Entry No.	SECT. No.	MANHOLE REF	PIPE CAPACITY l/s	RATE FLOW l/s	PIPE DIAM mm	CHAMBER DIAM/LxW mm	INVERT LEVEL m	WATER LEVEL m	GRND LEVEL m	SURCHARGE fract.	Depth	OVERFLOW l/s	FLOODED VOL m³	UPSTRM VOL m³	STATUS
1	I	1.01 SW1.01	16.2	6.1	150	1200	10.65	10.71	12.00	0.38	0.061	0.00	0.00	0.00	OK
2	I	1.02 SW1.02	16.2	18.3	150	1200	10.48	10.65	12.00	1.14	0.165	2.19	0.00	0.35	Surcharged
3	B	2.01 SW2.01	35.7	12.2	150	1200	10.65	10.71	12.00	0.34	0.057	0.00	0.00	0.00	OK
4	I	1.03 SW1.03	38.6	48.9	225	1200	9.98	10.28	12.00	1.27	0.294	10.38	0.00	1.36	Surcharged
5	B	3.01 SW3.01	16.2	6.1	150	1200	10.65	10.71	12.00	0.38	0.061	0.00	0.00	0.00	OK
6	B	3.02 SW3.02	19.5	21.4	150	1200	10.48	10.65	12.00	1.10	0.163	1.93	0.00	0.35	Surcharged
7	B	4.01 SW4.01	16.2	24.5	150	1200	10.65	10.86	12.00	1.51	0.205	8.31	0.00	0.00	Surcharged
8	S1	5.01 SW5.01	18.3	19.1	150	1200	10.65	10.81	12.00	1.04	0.155	0.82	0.00	0.00	Surcharged
9	B	4.02 SW4.02	16.2	43.6	150	1200	10.38	10.71	12.00	2.70	0.332	27.42	0.00	1.01	Surcharged
10	B	4.03 SW4.03	25.4	68.0	150	1200	10.01	10.44	12.10	2.68	0.433	42.62	0.00	0.80	Surcharged
11	I	1.04 SW1.04	82.5	138.4	300	1200	9.76	10.43	12.00	1.68	0.671	55.90	0.00	2.86	Surcharged
12	B	6.01 SW6.01	57.7	146.8	225	1200	10.57	11.39	12.00	2.54	0.816	89.05	0.00	0.00	Surcharged
13	I	1.05 SW1.05	114.8	285.2	375	1500	9.65	10.75	12.00	2.48	1.098	170.41	0.00	4.40	Surcharged
14	B	7.01 SW7.01	64.0	122.3	225	1200	10.57	11.19	12.00	1.91	0.612	58.29	0.00	0.00	Surcharged
15	B	8.01 SW8.01	64.0	140.7	225	1200	10.57	11.31	12.00	2.20	0.733	76.64	0.00	0.00	Surcharged
16	I	1.06 SW1.06	360.7	548.2	600	1800	9.43	10.59	12.00	1.52	1.153	187.45	0.00	13.14	Surcharged
17	B	9.01 SW9.01	207.7	458.7	450	1200	10.50	12.61	12.00	2.21	2.115	250.99	41.73	0.00	Flooded
18	B	9.02 SW9.02	207.7	477.8	450	1200	10.44	12.68	12.00	2.30	2.242	270.11	46.21	2.39	Flooded
19	B	9.03 SW9.03	207.7	477.8	450	1200	10.31	12.55	12.00	2.30	2.242	270.11	37.53	4.77	Flooded
20	S1	10.01 SW10.01	23.0	19.1	150	1200	10.65	10.77	12.00	0.83	0.116	0.00	0.00	0.00	OK
21	B	9.04 SW9.04	33.7	0.0	150	1200	10.23	10.23	12.00	0.00	0.000	0.00	0.00	3.62	OK
22	I	1.07 SW1.07	360.7	1045.1	600	1800	9.32	11.94	12.00	2.90	2.618	684.40	0.00	11.75	Warning



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Project Crown Estates
Title Surcharge calcs (Sized at 2 yrs storm) for COLLEGE.SW - surcharged at 50 yrs storm.

Notes

Printout headings

- | | | |
|---|---|---|
| 1) Entry no - position in file | 2) Section no - pipe identifier | 3) Manhole ref - Manhole identifier |
| 4) Pipe cap - full bore capacity of that pipe | 5) Rate of flow - calculated flow rate (l/s) ‡ = flow restrictor. | 6) Pipe diam - outlet pipe diameter (mm) |
| 7) Chamber diam - chamber diam. at base of MH | 8) Invert level - invert level of manhole | 9) Water level - calculated peak water level. |
| 10) Grnd level - ground / cover level | 11) Surch. fract - calc.flow/pipe capacity | 12) Surch. depth - surcharge level above soffit |
| 13) Overflow - surcharged flow rate (l/s) | 14) Flooded vol - volume of water above cover | 15) Upstrm Vol - upstream pipe vol to previous manhole(s) |
| 16) Status - OK - outlet not surcharged | 17) Status - Surcharged - outlet surcharged | 18) Status - Warning - water level at/above warning |
| 19) Status - Flooded - cover over-topped | | |

Title box

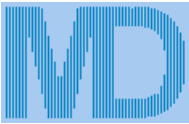
Hydrograph data

- | | | |
|---|--------------------------------------|--|
| 1) Ret. period - that used to calculate profile | 2) Duration - length of storm (mins) | 3) Profile - either Winter (75%) or Summer (50%) |
|---|--------------------------------------|--|

Flood volumes

Manhole reference - SW9.01	Flooded volume - 111.1644 m ³	Flooded time - 0.50 mins
Manhole reference - SW9.02	Flooded volume - 226.9994 m ³	Flooded time - 0.50 mins
Manhole reference - SW9.03	Flooded volume - 333.176 m ³	Flooded time - 0.38 mins

Check that the upstream storage of the manhole is adequate to take the flood volume - see Upstrm Vol above.



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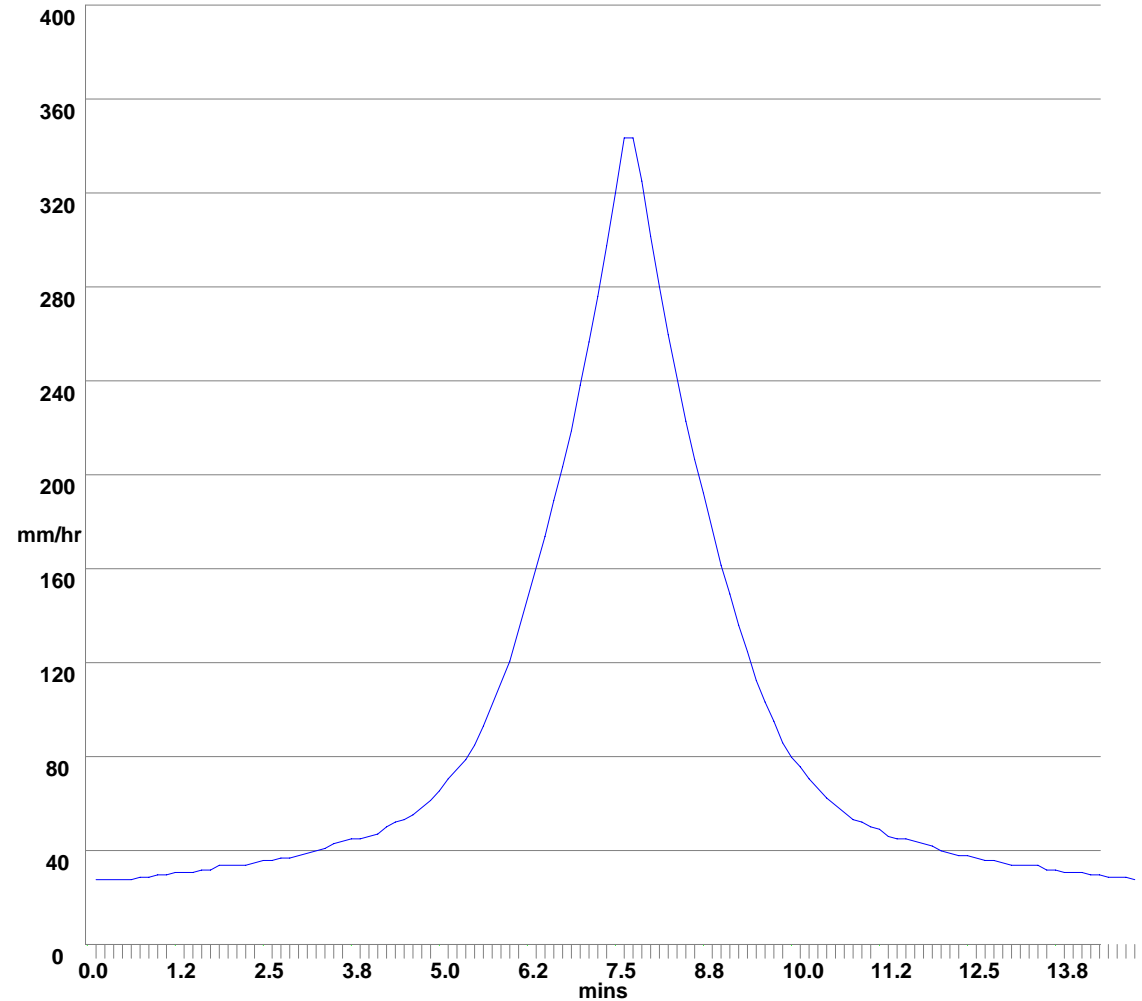
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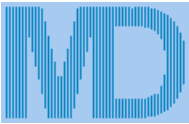
Project
Crown Estates

Title
Surcharge calcs (Sized at 2 yrs storm) for COLLEGE.SW - surcharged at 50 yrs storm.

Time mins	Rain mm/hr	Time mins	Rain mm/hr	Time mins	Rain mm/hr
0:08	27.00	5:08	69.00	10:08	74.00
0:15	27.00	5:15	73.00	10:15	69.00
0:22	27.00	5:22	77.00	10:22	65.00
0:30	27.00	5:30	83.00	10:30	61.00
0:38	27.00	5:38	91.00	10:38	58.00
0:45	28.00	5:45	100.00	10:45	55.00
0:52	28.00	5:52	109.00	10:52	52.00
1:00	29.00	6:00	118.00	11:00	51.00
1:08	29.00	6:08	131.00	11:08	49.00
1:15	30.00	6:15	144.00	11:15	48.00
1:22	30.00	6:22	157.00	11:22	45.00
1:30	30.00	6:30	170.00	11:30	44.00
1:38	31.00	6:38	185.00	11:38	44.00
1:45	31.00	6:45	199.00	11:45	43.00
1:52	33.00	6:52	214.00	11:52	42.00
2:00	33.00	7:00	233.00	12:00	41.00
2:08	33.00	7:08	251.00	12:08	39.00
2:15	33.00	7:15	270.00	12:15	38.00
2:22	34.00	7:22	291.00	12:22	37.00
2:30	35.00	7:30	313.00	12:30	37.00
2:38	35.00	7:38	336.00	12:38	36.00
2:45	36.00	7:45	336.00	12:45	35.00
2:52	36.00	7:52	318.00	12:52	35.00
3:00	37.00	8:00	295.00	13:00	34.00
3:08	38.00	8:08	274.00	13:08	33.00
3:15	39.00	8:15	254.00	13:15	33.00
3:22	40.00	8:22	236.00	13:22	33.00
3:30	42.00	8:30	218.00	13:30	33.00
3:38	43.00	8:38	202.00	13:38	31.00
3:45	44.00	8:45	188.00	13:45	31.00
3:52	44.00	8:52	173.00	13:52	30.00
4:00	45.00	9:00	158.00	14:00	30.00
4:08	46.00	9:08	146.00	14:08	30.00
4:15	49.00	9:15	133.00	14:15	29.00
4:22	51.00	9:22	122.00	14:22	29.00
4:30	52.00	9:30	110.00	14:30	28.00
4:38	54.00	9:38	101.00	14:38	28.00
4:45	57.00	9:45	93.00	14:45	28.00
4:52	60.00	9:52	84.00	14:52	27.00
5:00	64.00	10:00	78.00	15:00	27.00

Hydrograph profile derived from data in the Flood Studies Report





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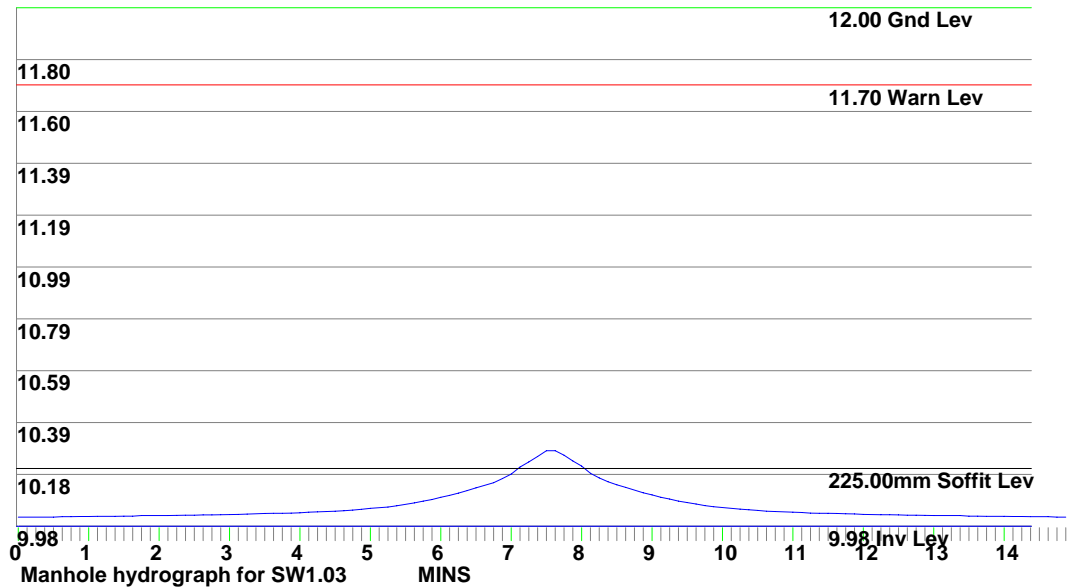
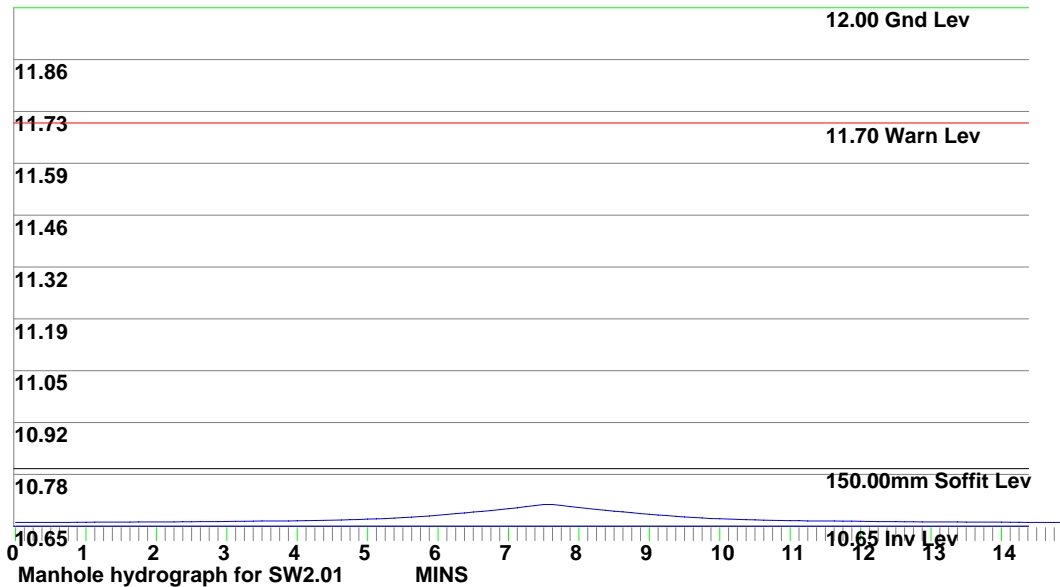
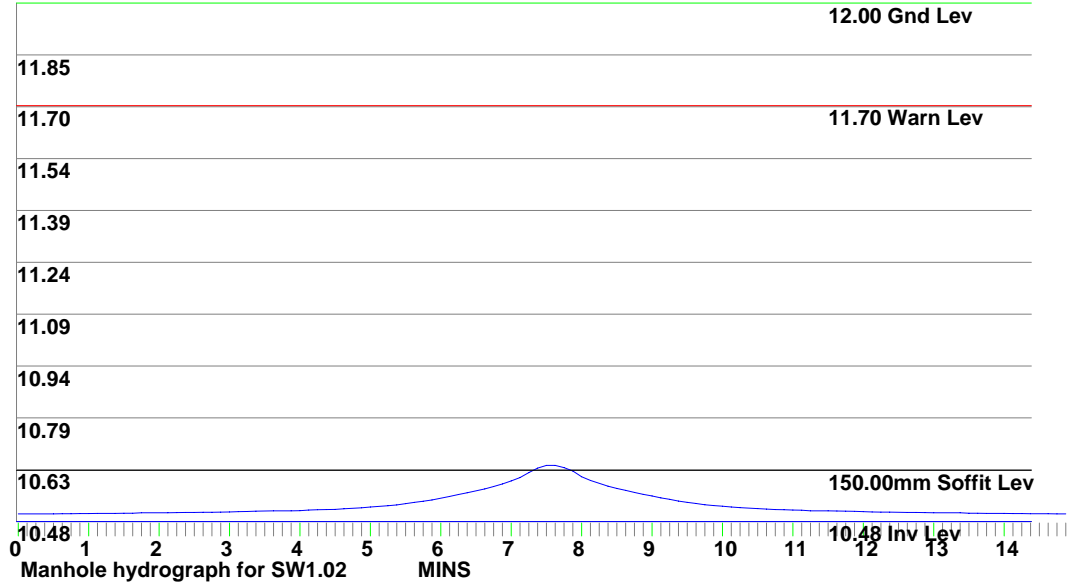
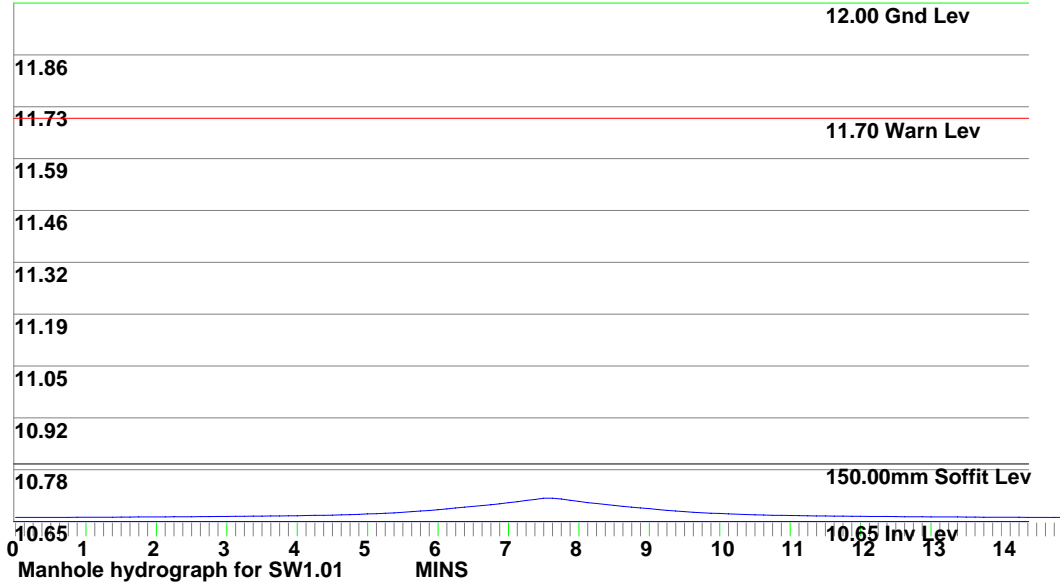
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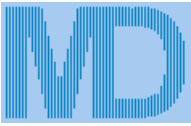
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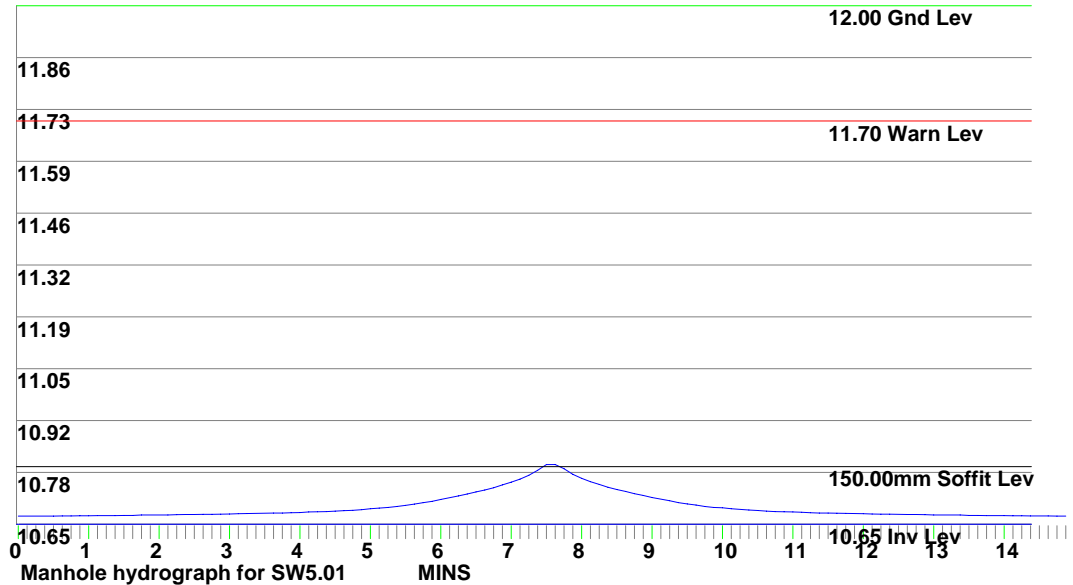
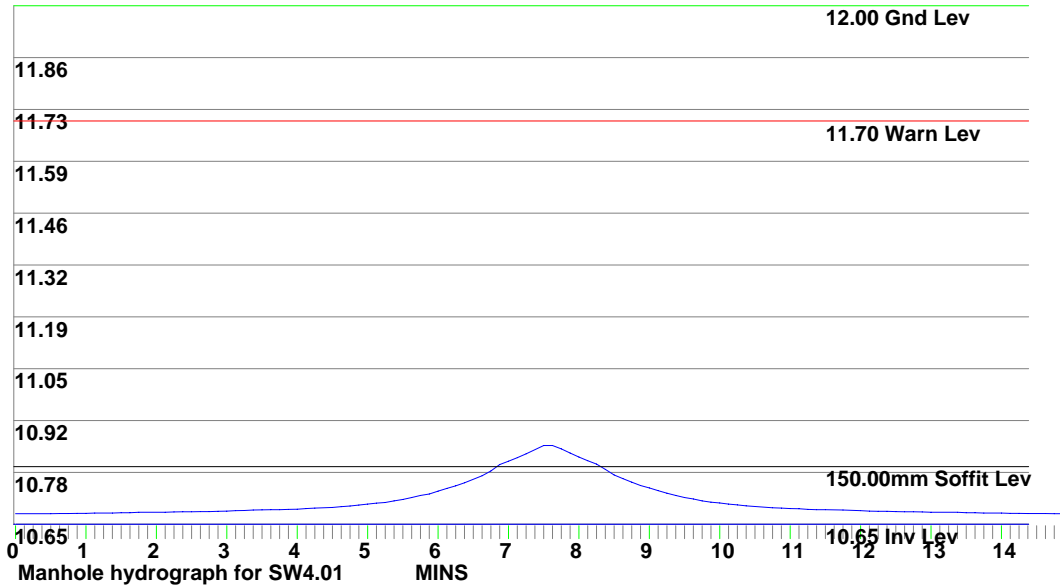
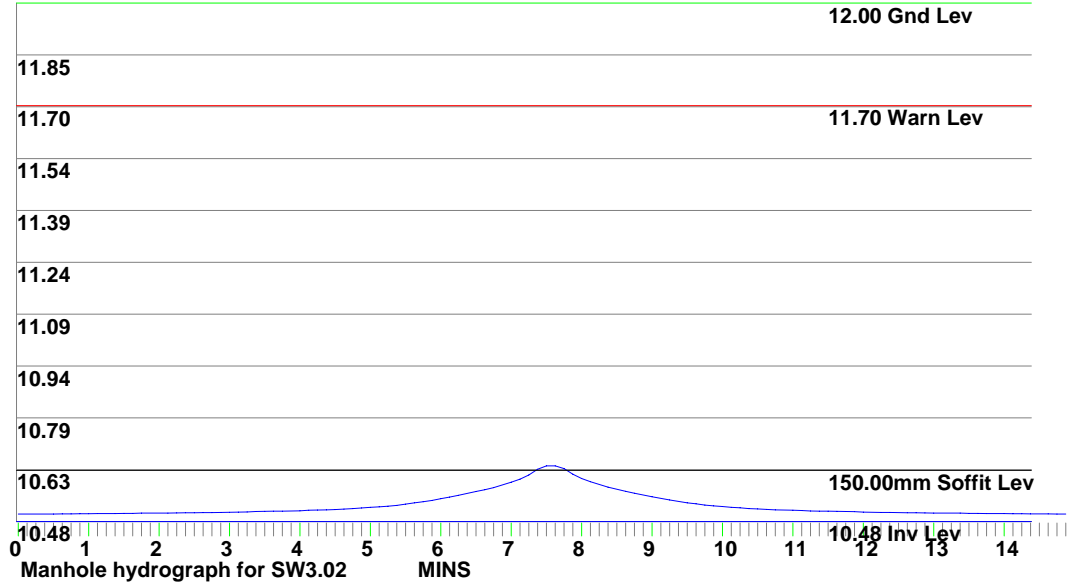
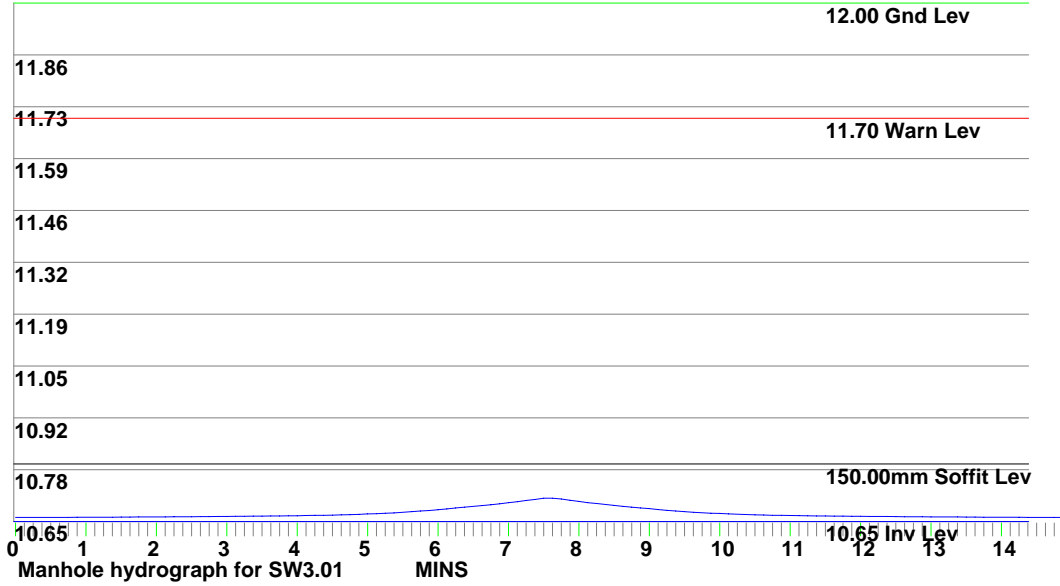


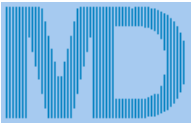
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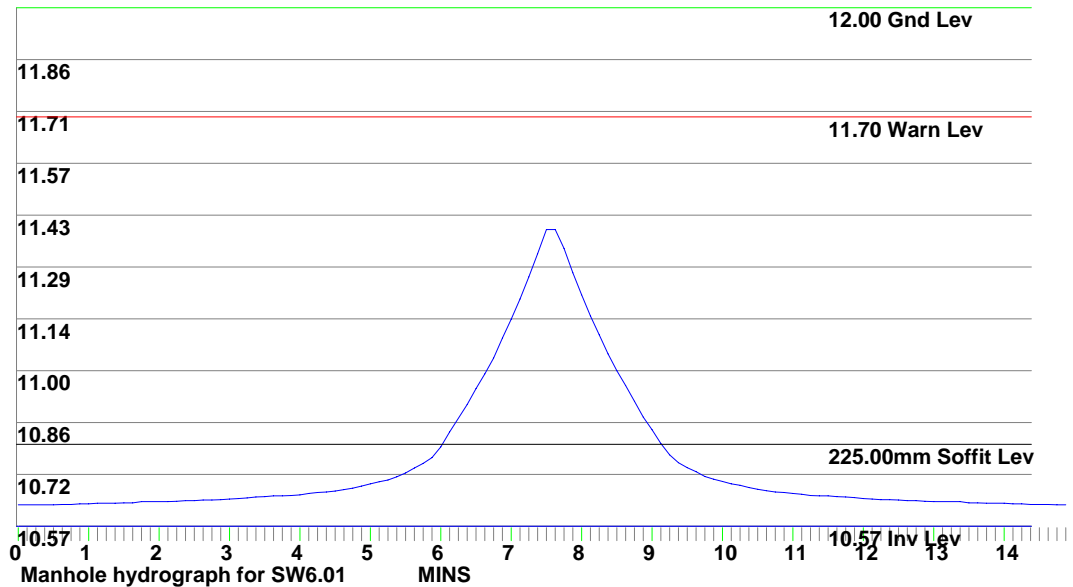
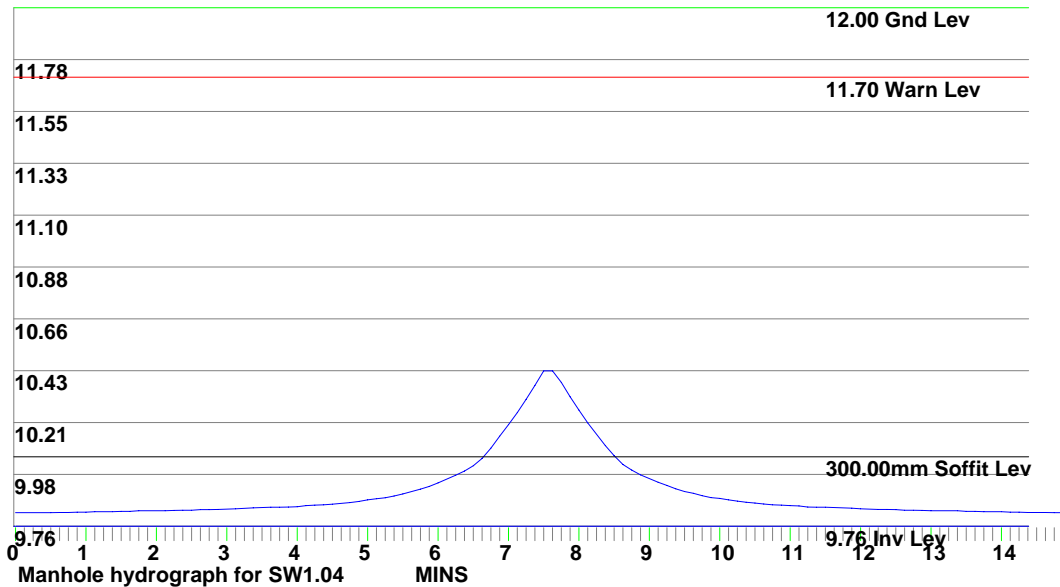
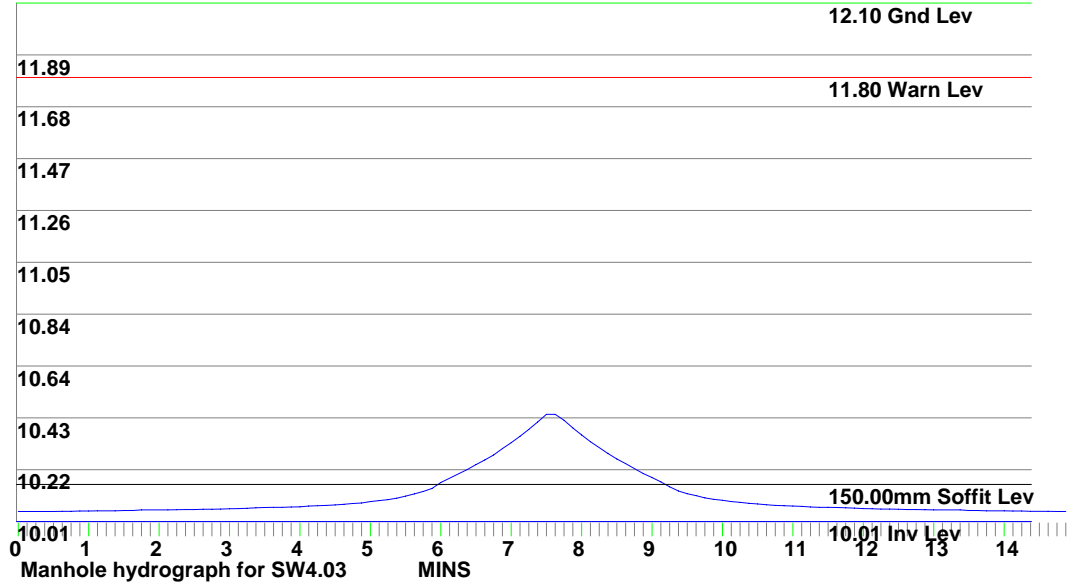
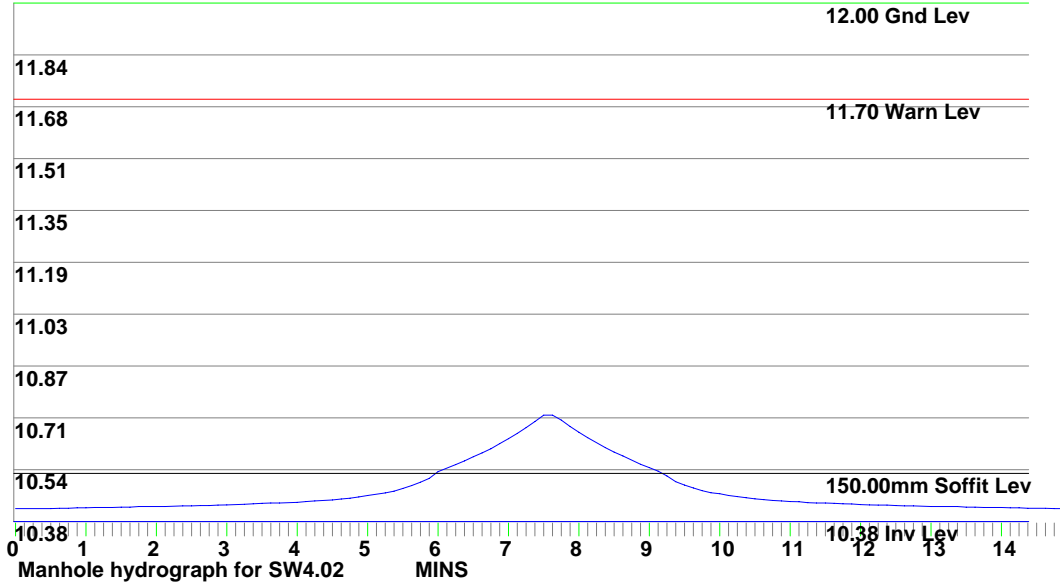


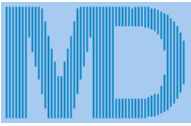
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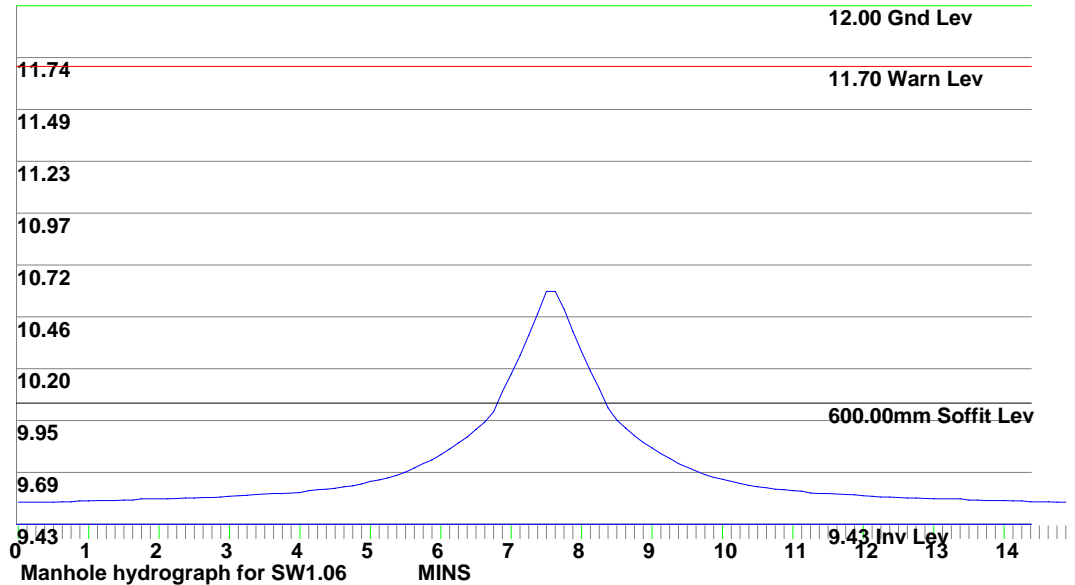
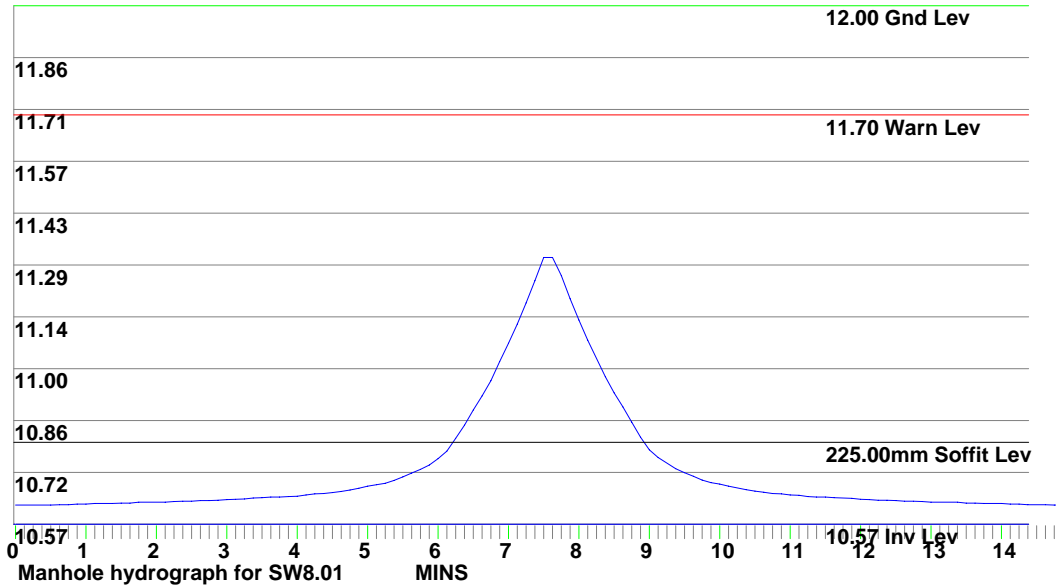
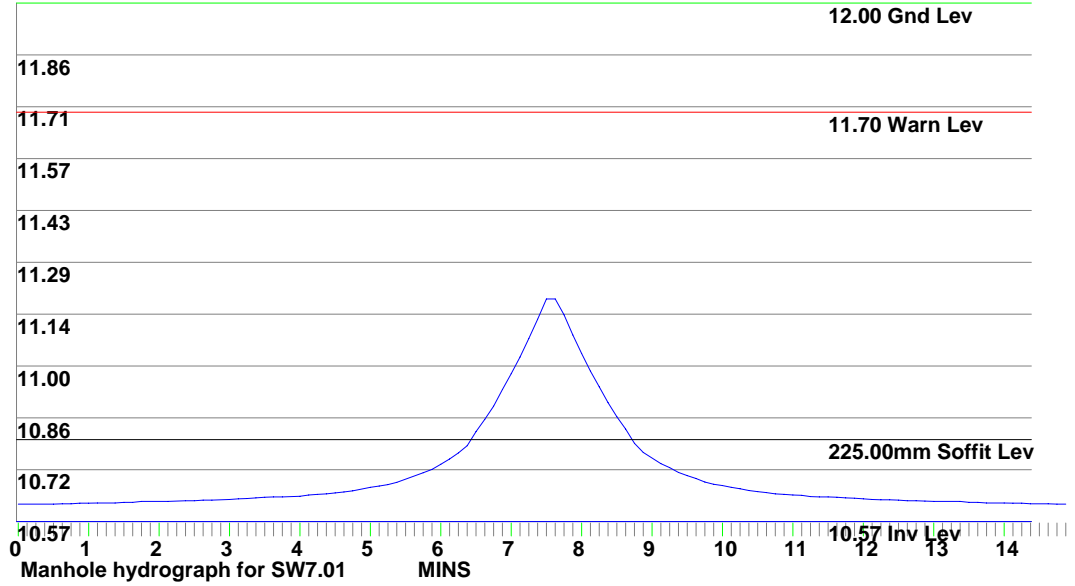
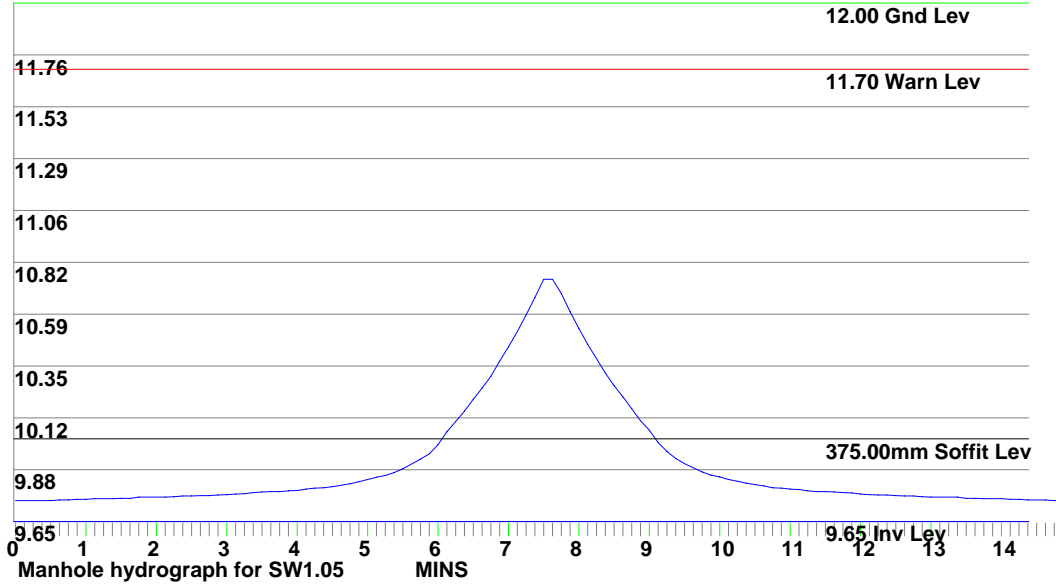


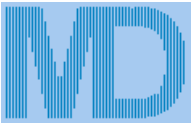
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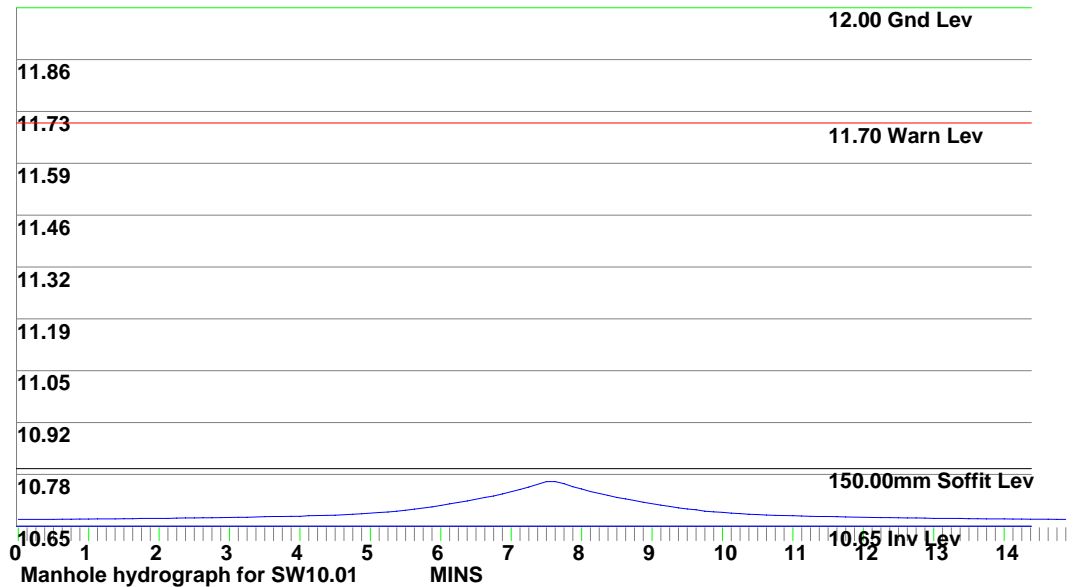
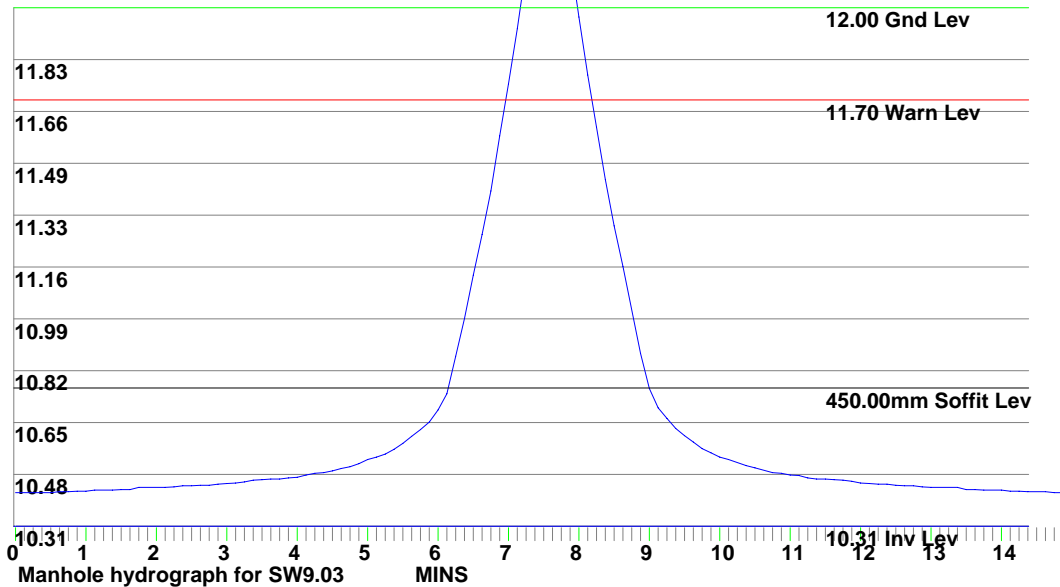
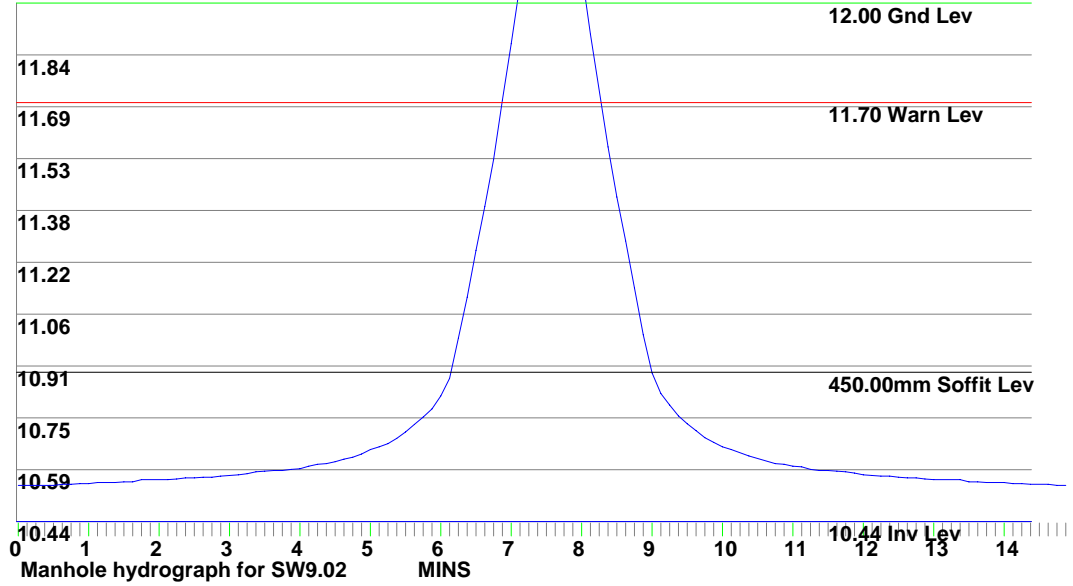
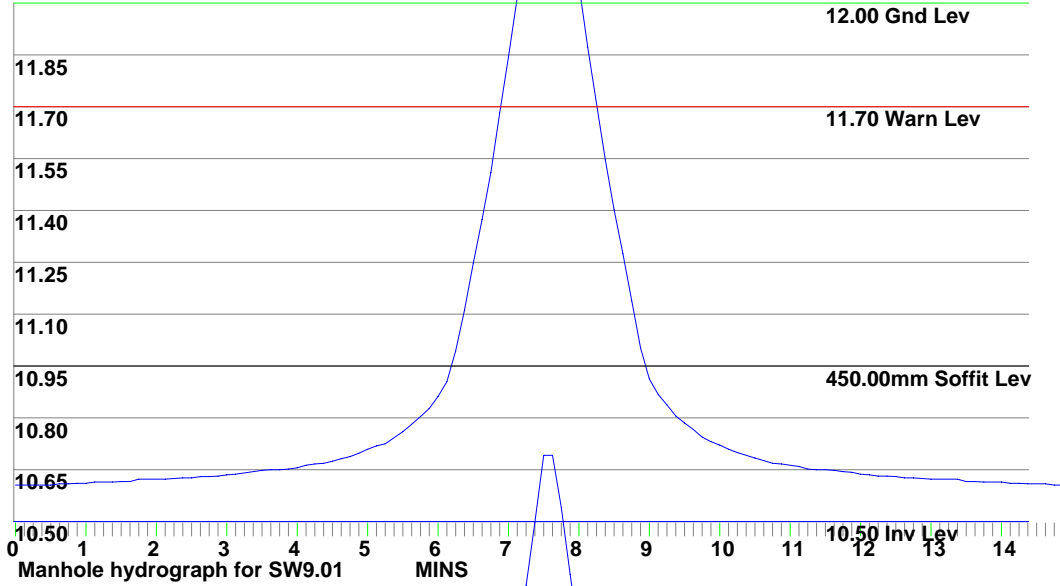
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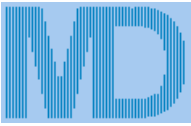
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