Detailed Results – Supplementary Material

August 11, 2025

Planner	Coverage			PAR10			IPC quality		
	O	S	C	O	S	C	O	S	C
blocksworld									
lama	30	30	30	0.1	0.1	0.1	27.9	26.6	26.6
BFWS	30	30	30	1.6	2.3	2.2	26.6	28.3	28.3
decstar	30	30	30	0.2	0.2	0.2	19.9	30.0	30.0
powerlifted	30	30	30	4.5	1.8	1.8	27.4	28.5	28.5
ferry									
lama	30	30	30	0.0	0.0	0.0	30.0	22.8	20.9
BFWS	30	30	30	0.0	0.0	0.0	30.0	19.4	18.2
decstar	30	30	30	0.1	0.1	0.1	30.0	22.3	20.8
powerlifted	0	0	0	9000	9000	9000	0.0	0.0	0.0
floortile									
lama	11	17	17	5700	3907	3907	11.0	15.1	15.1
BFWS	2	14	14	8400	4820	4820	2.0	13.8	13.8
decstar	12	17	17	5402	3907	3907	12.0	15.2	15.2
powerlifted	9	11	11	6344	5714	5714	9.0	8.9	8.9
miconic									
lama	30	30	30	0.0	0.0	0.0	30.0	25.8	25.8
BFWS	30	30	30	0.0	0.0	0.0	30.0	23.0	23.0
decstar	30	30	30	0.0	0.0	0.0	29.8	27.3	27.3
powerlifted	30	30	30	0.0	0.0	0.0	30.0	24.0	24.0
sokoban									
lama	30	30	30	0.2	0.1	0.1	26.8	26.8	26.4
BFWS	30	30	30	0.0	0.0	0.0	28.5	28.3	27.9
decstar	30	30	30	1.1	0.1	0.2	26.6	25.7	26.0
powerlifted	30	30	30	4.0	7.7	9.1	26.7	27.8	27.5
transport									
lama	30	30	30	0.1	0.1	0.1	28.6	29.2	29.2
BFWS	30	30	30	0.0	0.0	0.0	29.3	29.0	29.0
decstar	30	30	30	0.1	0.2	0.2	26.3	29.8	29.8
powerlifted	30	30	30	0.4	0.3	0.3	28.1	29.3	29.3

Table 1: Results on Easy benchmark instances comparing the (O)riginal models with CSM enhanced models, (S)imple CSMs, and (C)ompound CSMs.

Planner	Coverage			PAR10			IPC quality		
	O	S	C	O	S	C	O	S	C
blocksworld									
lama	27	28	28	937	630	630	25.4	23.6	23.6
BFWS	6	4	4	7231	7825	7826	5.6	4.0	4.0
decstar	17	12	12	3906	5447	5448	11.7	12.0	12.0
powerlifted	6	8	7	7243	6668	6943	5.8	7.3	6.3
ferry									
lama	30	30	30	0.9	0.9	0.5	30.0	21.6	20.9
BFWS	30	30	30	0.6	0.8	0.9	30.0	18.2	17.7
decstar	30	30	30	0.8	0.9	0.6	30.0	21.5	20.9
powerlifted	0	0	0	9000	9000	9000	0.0	0.0	0.0
floortile									
lama	0	0	0	9000	9000	9000	0.0	0.0	0.0
BFWS	0	0	0	9000	9000	9000	0.0	0.0	0.0
decstar	0	0	0	9000	9000	9000	0.0	0.0	0.0
powerlifted	0	0	0	9000	9000	9000	0.0	0.0	0.0
miconic									
lama	30	30	30	0.2	0.2	0.2	30.0	25.5	25.5
BFWS	30	30	30	0.2	0.2	0.2	30.0	22.7	22.7
decstar	30	30	30	0.1	0.1	0.1	30.0	26.0	26.0
powerlifted	30	30	30	2.3	11	11	30.0	21.9	21.9
sokoban									
lama	10	11	8	6015	5729	6653	8.5	10.1	6.5
BFWS	4	4	4	7803	7802	7800	3.6	3.7	3.7
decstar	7	7	8	6904	6923	6643	6.7	5.8	6.7
powerlifted	2	2	2	8442	8431	8445	1.9	2.0	1.9
transport									
lama	30	30	30	17	17	15	29.0	29.7	29.7
BFWS	29	30	30	313	13	13	28.4	29.8	29.8
decstar	30	30	30	12	19	19	27.1	29.9	29.9
powerlifted	23	23	23	2186	2217	2212	22.1	22.8	22.8

Table 2: Results on Medium benchmark instances comparing the (O)riginal models with CSM enhanced models, (S)imple CSMs, and (C)ompound CSMs.

Planner	Coverage			PAR10			IPC quality		
	O	S	C	O	S	C	O	S	C
blocksworld									
lama	3	4	4	8149	7845	7855	2.8	3.9	3.9
BFWS	0	0	0	9000	9000	9000	0.0	0.0	0.0
decstar	0	0	0	9000	9000	9000	0.0	0.0	0.0
powerlifted	0	0	0	9000	9000	9000	0.0	0.0	0.0
ferry									
lama	7	10	22	6954	6113	2497	7.0	7.7	19.6
BFWS	3	2	3	8110	8407	8122	3.0	1.1	1.7
decstar	8	9	22	6660	6373	2447	8.0	6.3	19.3
powerlifted	0	0	0	9000	9000	9000	0.0	0.0	0.0
floortile									
lama	0	0	0	9000	9000	9000	0.0	0.0	0.0
BFWS	0	0	0	9000	9000	9000	0.0	0.0	0.0
decstar	0	0	0	9000	9000	9000	0.0	0.0	0.0
powerlifted	0	0	0	9000	9000	9000	0.0	0.0	0.0
miconic									
lama	30	30	30	11	20	20	30.0	23.8	23.8
BFWS	30	30	30	105	123	123	30.0	22.8	22.8
decstar	30	30	30	2.1	3.3	3.3	30.0	24.2	24.2
powerlifted	15	6	6	4639	7225	7230	15.0	4.3	4.3
sokoban									
lama	0	0	0	9000	9000	9000	0.0	0.0	0.0
BFWS	0	0	0	9000	9000	9000	0.0	0.0	0.0
decstar	0	0	0	9000	9000	9000	0.0	0.0	0.0
powerlifted	0	0	0	9000	9000	9000	0.0	0.0	0.0
transport									
lama	3	3	3	8120	8120	8123	2.9	2.9	2.9
BFWS	0	0	0	9000	9000	9000	0.0	0.0	0.0
decstar	3	3	3	8111	8115	8115	2.7	2.9	2.9
powerlifted	0	0	0	9000	9000	9000	0.0	0.0	0.0

Table 3: Results on Hard benchmark instances comparing the (O)riginal models with CSM enhanced models, (S)imple CSMs, and (C)ompound CSMs.