

MIRI External Flat

Program, Obs(.Exposure_Spec)	Comment
Template Specific Information	
623 17	MIRI External Flat Template exists
623 17	Field: Pointing Type choose PARALLEL, PRIME
623 17	Field: Detector choose from list
623 17	Field: Imager Subarray choose from list
623 17	Field: Dither TRUE, FALSE
606 23	Field: Dither Type choose from list
606 27	Field: Starting Set 1-10 4-POINT-SETS only
606 27	Field: Number of Sets 1-10 4-POINT-SETS only
606 27	Field: Optimized For POINT SOURCE, EXTENDED SOURCE 4-POINT-SETS only
606 27	Field: Direction POSITIVE,NEGATIVE 4-POINT-SETS only
634 4	Field: Points i.e. 3,5,7-9,15-19 SPARSE-CYCLING
634 5	Field: Starting Point 1,2,3...310,311 CYCLING
634 5	Field: Number of Points 4,5,6... CYCLING
634 5,4,6	Field: Pattern Size choose from list for CYCLING, SPARSE-CYCLING, or RELEAUX only
623 16	Field: Lamp Use choose from list
606 21 or 623 11	Field: Filter choose from list IMAGER or ALL
623 11.01	Field: Wavelength1&4,Wavelength2&3 choose from list MRS ALL
623 11.01	Field: Readout Pattern choose from list
623 11.01	Field: Number of Groups/Integration number
623 11.01	Field: Number of Integrations/Exposure number
606 39	Field: Number of Exposures/Dither number Dither True
Target Name	
623 11	if Pointing Type PARALLEL Target Name = NONE
623 16	if Pointing Type PRIME, NONE is not available
Science Exposures	
Pointing Type	
623 11 (903 57)	PARALLEL (default)
606 22	PRIME
903 59	if PRIME Target Name required
903 59	if PRIME default "None Selected"
903 59	give error if any PARALLEL special requirement present
623 16	if PARALLEL set Dither=False, hide the Dither options
623 20	if PARALLEL set LAMP USE=ON ONLY
903 57	if PARALLEL add PARALLEL SLEW ONLY special requirement
903 58	if PARALLEL give error if no PARALLEL SLEW ONLY sr
903 57	if PARALLEL add NO PARALLEL sr
903 58	if PARALLEL give error if no NO PARALLEL sr
Detector	
606 22	IMAGER
607 6	MRS

623 11	ALL
DB population Imager	
606 21	1 FILTER
606 21	1 READOUT PATTERN
606 21	1 NGROUPS
606 21	1 NINTS
606 21	1 NEXP
DB population MRS each exposure spec on *1* DB line	
607 3	1 Detector MRSLong
607 3	1 Wavelength_1_4
607 3	1 Wavelength_2_3
607 3	1 READOUT PATTERN
607 3	1 NGROUPSLONG
607 3	1 NINTSLONG
607 3	1 NEXP
607 3	1 Detector MRSShort
607 3	1 Wavelength_1_4 (above)
607 3	1 Wavelength_2_3 (above)
607 3	1 READOUT PATTERN (above)
607 3	1 NGROUPSSHORT
607 3	1 NINTSSHORT
607 3	1 NEXP (above)
DB population ALL each exposure spec on *1* DB line	
623 12	1 Detector Imager
623 12	1 FILTER
623 12	1 Wavelength1_4 N/A
623 12	1 Wavelength 2_3 N/A
623 12	1 READOUT PATTERN
623 12	1 NGROUPS
623 12	1 NINTS
623 12	1 NEXP
623 12	1 Detector MRSLong
623 12	1
623 12	1 Wavelength_1_4
623 12	1 Wavelength_2_3
623 12	1 READOUT PATTERN LONG
623 12	1 NGROUPSLONG
623 12	1 NINTSLONG
623 12	1 NEXP (above)
623 12	1 Detector MRSShort
623 12	1 Filter N/A
623 12	1 Wavelength_1_4 (above)
623 12	1 Wavelength_2_1 (above)
623 12	1 READOUT PATTERN SHORT
623 12	1 NGROUPSSHORT
623 12	1 NINTSSHORT
623 12	1 NEXP (above)
Imager Subarray ALL then IMAGER	
623 11 606 21	FULL

623 12 606 22	BRIGHTSKY
623 13 606 23	SUB256
623 14 606 24	SUB128
623 15 606 25	SUB64
623 16 606 26	SLITLESSPRISM
623 19 606 29	MASK1550
623 18 606 28	MASK1140
623 17 606 27	MASK1065
623 20 606 30	MASKLYOT
607 1	not valid for DETECTOR=MRS
606 21 623 11	valid for IMAGER and ALL
607 1	MRS Subarray FULL by scripts (null in miri_templates)
Dither Patterns	
Dither	
606 21	TRUE
606 29	FALSE
Dither Type	
606 21 (903 60)	4-POINT-SETS (default)
634 3	2-POINT no additional parameters
634 4	SPARSE-CYCLING
634 5	CYCLING
634 6	REULEAUX
339 1	CYCLING-MICRO no additional parameters
4-POINT-SETS - just doing two representative filters for each one not all	
903 72-74	for 3 smallest subarrays a particular set will be used automatically Starting Set and Number of Sets=1
646 1.01 OPAQUE	OPTIMIZED FOR=EXTENDED SOURCE SUB128
646 1.02 F25550W	
646 2.01 F560W	OPTIMIZED FOR=EXTENDED SOURCE SUB256
646 2.02 F2300C	
646 3.01 F770W	OPTIMIZED FOR=POINT SOURCE SUB64 FILTER=SHORT
646 3.02 F1140C	
646 4.01 P750L	OPTIMIZED FOR=POINT SOURCE SUB128 FILTER=SHORT
646 4.02 F1130W	
646 5.01 FLENS	OPTIMIZED FOR=POINT SOURCE SUB256 FILTER=SHORT
646 5.02 F1000W	
646 6.01 F1550C	OPTIMIZED FOR=POINT SOURCE SUB64 FILTER=LONG
646 6.02 F1280W	
646 7.01 FND	OPTIMIZED FOR=POINT SOURCE SUB128 FILTER=LONG
646 7.02 F1800W	
646 8.01 F1280W	OPTIMIZED FOR=POINT SOURCE SUB256 FILTER=LONG
646 8.02 F2550WR	
903 75	OPTIMIZED FOR EXTENDED SOURCE SUB64 not allowed
Starting Set	
606 23 (1)	STARTING SET 1-10
903 61, 62	STARTING SET 0,11 illegal
Number of Sets	
903 63, 64	NUMBER OF SETS 1-10
903 61, 62	NUMBER OF SETS 0,11 illegal

646 11 start=9 #sets=4	If combo STARTING SET and NUMBER OF SETS exceeds 11 pattern cycles back to use sets 1,2,3...
Optimized For	
606 21	POINT SOURCE
606 23	EXTENDED SOURCE
903 60	dither created before target no default selected
903 65	target chosen first default is POINT SOURCE
903 66	target chosen first EXTENDED default is EXTENDED SOURCE
Direction	
606 21 (903 65)	DIRECTION POSITIVE (default)
606 22	DIRECTION NEGATIVE
606 22	DIRECTION NEGATIVE X-offset multiplied by -1
2-POINT	
634 3	2-POINT 2 point pattern
Sparse Cycling	
634 4	SPARSE CYCLING POINTS i.e. 3,5,7-9,15-19
Cycling	
634 5 (3) 646 10 (1)	STARTING POINT: 1, 2, 3, ... 310, 311
903 67, 68	illegal cases 0 and 312
646 10 (1) 9 (4)	NUMBER OF POINTS: 4,5,6...
903 67, 68 (1, 2) 634 5 (3) legal in APT	illegal cases 0,1,2,3
646 9.01 #1 start=310 #pt=6	If STARTING POINT + NUMBER OF POINTS > 312 pattern cycles back to 1, 2, 3, etc
903 69 (500)	no explicit maximum for number of points
Reuleaux	
634 6	REULEAUX 12 dither points
Pattern Size	
903 70	PATTERN SIZE: required (Note size is Default by default)
634 4	PATTERN SIZE: DEFAULT
634 5	PATTERN SIZE: SMALL
634 6	PATTERN SIZE: MEDIUM
638 72	PATTERN SIZE: LARGE
638 11-13	FULL SMALL: Reuleaux, Cycling, Sparse Cycling
638 14-16	FULL MEDIUM: Reuleaux, Cycling, Sparse Cycling
638 17-19	FULL LARGE: Reuleaux, Cycling, Sparse Cycling
638 20-22	BRIGHTSKY SMALL: Reuleaux, Cycling, Sparse Cycling
638 23-25	BRIGHTSKY MEDIUM: Reuleaux, Cycling, Sparse Cycling
638 26-28	BRIGHTSKY LARGE: Reuleaux, Cycling, Sparse Cycling
638 29-31	SUB256 SMALL: Reuleaux, Cycling, Sparse Cycling
638 32-34	SUB256 MEDIUM: Reuleaux, Cycling, Sparse Cycling
638 35-37	SUB256 LARGE: Reuleaux, Cycling, Sparse Cycling
638 38-40	SUB128 SMALL: Reuleaux, Cycling, Sparse Cycling
638 41	SUB128 MEDIUM: REULEAUX
638 42	SUB128 LARGE: REULEAUX
638 43-45	SUB64 SMALL: Reuleaux, Cycling, Sparse Cycling
638 46	SUB64 MEDIUM: Reuleaux

638 57-59	MASK1065 SMALL: Reuleaux, Cycling, Sparse Cycling
638 60-62	MASK1065 MEDIUM: Reuleaux, Cycling, Sparse Cycling
638 63-65	MASK1065 LARGE: Reuleaux, Cycling, Sparse Cycling
638 66-68	MASK1140 SMALL: Reuleaux, Cycling, Sparse Cycling
638 69-71	MASK1140 MEDIUM: Reuleaux, Cycling, Sparse Cycling
638 72-74	MASK1140 LARGE: Reuleaux, Cycling, Sparse Cycling
638 75-77	MASK1550 SMALL: Reuleaux, Cycling, Sparse Cycling
638 78-80	MASK1550 MEDIUM: Reuleaux, Cycling, Sparse Cycling
638 81-83	MASK1550 LARGE: Reuleaux, Cycling, Sparse Cycling
638 84-86	MASKLYOT SMALL: Reuleaux, Cycling, Sparse Cycling
638 87-89	MASKLYOT MEDIUM: Reuleaux, Cycling, Sparse Cycling
638 90-92	MASKLYOT LARGE: Reuleaux, Cycling, Sparse Cycling
when not specified by user DEFAULT pattern by following rules	
607 13-15	FULL Cycling, Sparse Cycling, Reuleaux LARGE
607 16-18	BRIGHTSKY Cycling, Sparse Cycling, Reuleaux LARGE
607 19-21	SUB256 Cycling, Sparse Cycling, Reuleaux LARGE
607 22-23	SUB128 Cycling, Sparse Cycling SMALL
607 24-25	SUB64 Cycling, Sparse Cycling SMALL
Reuleaux SUB128 defaults by filter	
607 26.01	F560W: DEFAULT -> LARGE
607 26.02	F770W: DEFAULT -> LARGE
607 26.03	F1000W: DEFAULT -> LARGE
607 26.04	F1130W: DEFAULT -> LARGE
607 26.05	F1280W: DEFAULT -> MEDIUM
607 26.06	F1500W: DEFAULT -> MEDIUM
607 26.07	F1800W: DEFAULT -> MEDIUM
607 26.08	F2100W: DEFAULT -> MEDIUM
607 26.09	F2550W: DEFAULT -> MEDIUM
607 26.10	OPAQUE DEFAULT ->
607 26.11	FLENS: DEFAULT ->
607 26.12	F1065C: DEFAULT ->
607 26.13	F1140C: DEFAULT ->
607 26.14	F1550C: DEFAULT ->
607 26.15	F2300C: DEFAULT ->
607 26.16	F2550WR: DEFAULT ->
607 26.17	P750L: DEFAULT ->
607 26.18	FND: DEFAULT ->
Reuleaux SUB64 defaults by filter	
607 27.01	F560W: MEDIUM
607 27.02	F770W: MEDIUM
607 27.03	F1000W: SMALL
607 27.04	F1130W: SMALL
607 27.05	F1280W: SMALL
607 27.06	F1500W: SMALL
607 27.07	F1800W: SMALL
607 27.08	F2100W: SMALL
607 27.09	F2550W: not recommended
607 27.10	OPAQUE DEFAULT ->
607 27.11	FLENS: DEFAULT ->

607 27.12	F1065C: DEFAULT ->
607 27.13	F1140C: DEFAULT ->
607 27.14	F1550C: DEFAULT ->
607 27.15	F2300C: DEFAULT ->
607 27.16	F2550WR: DEFAULT ->
607 27.17	P750L: DEFAULT ->
607 27.18	FND: DEFAULT ->
638 47-49	SLITLESSPRISM SMALL: REULEAUX, Cycling, Sparse Cycling
638 50-52	SLITLESSPRISM MEDIUM: REULEAUX, Cycling, Sparse Cycling
638 53-55	SLITLESSPRISM LARGE: REULEAUX, Cycling, Sparse Cycling
Cycling-micro	
339 1	sub-pixel dither pattern
Lamp Use	
606 21	OFF THEN ON
606 22	ON ONLY
636 1	OFF ONLY
903 71 GRPS is 4 by default	if OFF THEN ONLY will be prompted for NINTS NGROUPS for OFF THEN ON
623 20	if POINTING TYPE=PARALLEL LAMP USE=ON ONLY
606 22	LAMP USE=ON ONLY lamp_power=ON
636 1	LAMP USE=OFF ONLY lamp_power=OFF
606 21	LAMP USE=OFF THEN ON populate all OFF exps then all ON exps
606 21	same READOUT PATTERN should be used for OFF as specified for ON
Filter Name ALL or IMAGER	
623 12.01 629 1.01	OPAQUE
623 11.01 629 1.02	FLENS
623 11.02 606 21.01	F560W
623 14.01 606 24.01	F770W
623 15.01 606 25.01	F1000W
623 16.01 606 26.01	F1065C
623 17.01 606 27.01	F1130W
623 18.01 606 22.01	F1140C
623 19.01 606 29.01	F1280W
623 20.01 606 30.01	F1500W
623 11.04 606 31.01	F1550C
623 20.02 606 21.02	F1800W
623 18.02 606 22.02	F2100W
623 21.01 606 34.01	F2300C
623 21.02 606 35.01	F2500W
623 21.03 606 22.03	F2550WR
623 21.05 606 38.01	FND
623 21.04 606 37.01	P750L
Wavelength select for MRS or ALL	
607 1.01 623 11.04	Wavelength1&4 SHORT (A)
607 1.03 623 11.01	Wavelength1&4 MEDIUM (B)
607 1.02 623 11.02	Wavelength1&4 LONG (C)
607 1.03 623 11.02	Wavelength2&3 SHORT (A)
607 1.01 623 11.04	Wavelength2&3 MEDIUM (B)

607 1.02 623 11.01	Wavelength2&3 LONG (C)
Readout Pattern	
623 11.01 IMAGER	SLOW
623 11.01 MRSLONG	FAST
code doesn't match	SLOW only allowed with SUBARRAY=FULL IMAGER
Number of Groups/Integration	
623 20.01 (903 71.01)	number (default 4)
623 20.02	if < 4 stern warning
Number of Integrations/Exposure	
623 20.01	number
Number of Exposures/Dither	
623 20.01 (903 71.01)	number (default 1)