

# HELIOS

4K LASER FRONT PROJECTOR



## REMOTE CODES

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## 1.1 List of Operating commands

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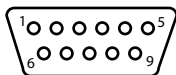
## 1.2 RS-232C protocol

### Serial communication specifications

Control of this unit is possible using a computer or automation device connected with a RS-232 cross cable (female - female D-sub 9 pins cable) or LAN/ RJ-45 cable. Communication specifications for this unit are as follows:

Baud Rate	19200 bps
Data Format	Binary
Mode	Asynchronous
Parity	None
Start Bit	1 bit set to high
Stop Bit	1 bit set to low
X on/off	None
Flow Control	None

### RS-232C pin assignation



Pin	Signal	Function	Signal Direction
2	RxD	receive data	PC -> this unit
3	TxD	transmit data	this unit -> PC
5	GND	ground	-
1, 4, 6-9	NC	-	-

### Command Format

Header 1	Header 2	Command	Command Data	End of Data
21h	89h 01h	2 bytes	2 to 4 bytes	0Ah

Header 1: fixed to 21h for operating commands or 3Fh for reference command.

Header 2 fixed to 89h 01h

Command: 2-4 bytes length

Command Data: variable length between 1 and 4 bytes

End of Data fixed to 0Ah

### Operating commands

Function	Command	Command Data	Description
Connection check	00h 00h	none	Check the connection in standby mode
Power	50h 57h	30h / 31h	Switch Off (Standby mode) / On.
Inputs	49h 50h	36h / 37h	Switch active input to HDMI1 / HDMI2
Initial Setup	53h 55h	52h 43h 30h	Switch RCU codes to A
		52h 43h 31h	Switch RCU codes to B
Picture Mode	50h 4Dh 50h 4Dh	30h 30h / 30h 31h	Film Mode / Cinema Mode
		30h 33h / 30h 34h	Natural Mode / HDR Mode
		30h 36h	THX Mode
		30h 43h / 30h 44h	User 1 / User 2
		30h 45h / 30h 46	User 3 / User 4
		31h 30h / 31h 31h	User 5 / User 6
		50h 52h xx special	Switch to next picture mode
Color Profile	50h 4Dh 50h 52h	30h 30h	Off
		30h 31h / 30h 32h	Film1 / Film2
		30h 33h	BT.709
		30h 34h / 30h 36h	Cinema / Anime

Function	Command	Command Data	Description
Color Profile	50h 4Dh 50h 52h	30h 41h / 30h 42h	HDR / BT.2020
		30h 44h / 32h 31h	THX / DCI
		30h 45h / 30h 46h	Custom1 / Custom2
		31h 30h / 31h 31h	Custom3 / Custom4
		31h 32h / 32h 32h	Custom5 / Custom6
Gamma Table	50h 4Dh 47h 54h	30h 30h / 30h 31h	2.2 / Cinema 1
		30h 32h / 30h 34h	Cinema 1 / Custom 1
		30h 35h / 30h 36h	Custom 2 / Custom 3
		30h 37h / 30h 43h	Hybrid Log / ST.2084
		30h 38h / 30h 39h	2.4 / 2.6
		30h 41h / 30h 42h	Film 1 / Film 2
		31h 30h	THX
Contrast	50h 4Dh 43h 4Eh	4 bytes integer	Set contrast to +10 -> 30h 30h 30h 41h +15 -> 30h 30h 30h 46h -1 -> 46h 46h 46h 46h -15 -> 46h 46h 46h 31h
Brightness	50h 4Dh 42h 52h	4 bytes integer	same as Contrast
Color	50h 4Dh 43h 4Fh	4 bytes integer	same as Contrast
Tint	50h 4Dh 54h 49h	4 bytes integer	same as Contrast
Dynamic Control	50h 4Dh 44h 43h	30h / 31h / 32h	Off / Mode 1 / Mode 2
Noise Reduction	50h 4Dh 52h 4Eh	4 bytes integer	same as Contrast
Bright Level (white)	50h 4Dh 52h 57h	4 bytes integer	same as Contrast
Dark Level (white)	50h 4Dh 4Bh 57h	4 bytes integer	same as Contrast
Low Latency Mode	50h 4Dh 4Ch 4Ch	30h / 31h	Off / On
CMD 400Hz	50h 4Dh 43h 4Dh	30h / 33h / 34h / 35h	Off / Low / High / Inverse Telecine
Motion Enhance	50h 4Dh 4Dh 45h	30h / 31h / 32h	Off / Low / High
Lens Aperture	50h 4Dh 4Ch 41h	4 bytes integer	same as Contrast
Laser Diode Power	50h 4Dh 4Ch 50h	30h / 31h / 32h	Normal / High / Mid
Graphic Mode	50h 4Dh 47h 4Dh	30h / 31h	2K / 4K
MPC Enhance	50h 4Dh 45h 4Eh	4 bytes integer	same as Contrast
MPC Smoothing	50h 4Dh 53h 54h	4 bytes integer	same as Contrast
Set User1 name	50h 4Dh 55h 31h	10 ASCII char.	Set custom name to User1 Picture Mode
Set User2 name	50h 4Dh 55h 32h	10 ASCII char.	Set custom name to User2 Picture Mode
Set User3 name	50h 4Dh 55h 33h	10 ASCII char.	Set custom name to User3 Picture Mode
Set User4 name	50h 4Dh 55h 34h	10 ASCII char.	Set custom name to User4 Picture Mode
Set User5 name	50h 4Dh 55h 35h	10 ASCII char.	Set custom name to User5 Picture Mode
Set User6 name	50h 4Dh 55h 36h	10 ASCII char.	Set custom name to User6 Picture Mode
HDMI Input Level	49h 53h 49h 4Ch	30h / 31h / 32h / 33h	Standard / Enhanced / Super White / Auto
HDMI Color Space	49h 53h 48h 52h	30h / 31h / 32h / 33h	Auto / YCbCr(4:4:4) / YCbCr(4:2:2) / RGB
Input Aspect Ratio	49h 53h 41h 53h	32h / 33h / 34h	Zoom / Auto / Just
Mask switch	49h 53h 4Dh 41h	31h / 32h	On / Off
3D Parallax	49h 53h 4Ch 56h	4 byte integer	same as Contrast
3D Crosstalk Cancel	49h 53h 43h 41h	4 byte integer	same as Contrast
Select 3D mode	49h 53h 33h 44h	31h	3D mode set to Auto
		33h	3D mode set to Side by Side
		34h	3D mode set to Top & Bottom
		30h	3D mode is disable (force 2D mode)

Function	Command	Command Data	Description
3D Left / Right phase	49h 53h 33h 50h	30h	Standard phase L/R
		31h	Inverse phase R/L
Anamorphic Modes	49h 4Eh 56h 53h	30h	Turn Off the Anamorphic mode
		31h	Anamorphic mode set to Mode A
		32h	Anamorphic mode set to Mode B
Load a specific Installation Mode	49h 4Eh 4Dh 4Ch	30h	Select Installation Mode 1
		31h.	Select Installation Mode 2
		...	
		39h	Select Installation Mode 10
Inst. Mode 1 name	49h 4Eh 4Dh 31h	10 ASCII char.	Set custom name to Installation Mode 1
Inst. Mode 2 name	49h 4Eh 4Dh 32h	10 ASCII char.	Set custom name to Installation Mode 2
	...		
Inst. Mode 9 name	49h 4Eh 4Dh 39h	10 ASCII char.	Set custom name to Installation Mode 9
Inst. Mode 10 name	49h 4Eh 4Dh 41h	10 ASCII char.	Set custom name to Installation Mode 10
Expert Calibration (THX)	52h 43h	37h 33h 43h 36h	THX plus - On and Adjust
		37h 33h 43h 37h	THX plus - Off
		37h 33h 43h 38h	THX plus - On locked
		37h 33h 38h 35h	Switch Picture Mode to THX - Bright
		37h 33h 38h 36h	Switch Picture Mode to THX - Dark
Expert Calibration (ISF)	52h 43h	37h 33h 35h 38h	ISF - On and Adjust
		37h 33h 35h 41h	ISF - Off
		37h 33h 35h 42h	ISF - On locked
		37h 33h 36h 34h	Switch Picture Mode to ISF - Day
		37h 33h 36h 35h	Switch Picture Mode to ISF - Night
Set Calibrator name	50h 4Dh 43h 49h	18 ASCII char.	Set Calibrator name - ISF must be "Adjust"

## Examples

You want to...	Command to send
Switch this unit On	send: 21h 89h 01h 50h 57h 31h 0Ah receive: 06h 89h 01h 50h 57h 0Ah
Switch this unit Off	send: 21h 89h 01h 50h 57h 30h 0Ah receive: 06h 89h 01h 50h 57h 0Ah
Change active Input to HDMI2.	send: 21h 89h 01h 49h 50h 37h 0Ah receive: 06h 89h 01h 49h 50h 0Ah
Change Picture Mode to match HDR	send: 21h 89h 01h 50h 4Dh 50h 4Dh 30h 34h 0Ah receive: 06h 89h 01h 50h 4Dh 50h 4Dh 0Ah
Change Aspect Ratio to Anamorphic A	send: 21h 89h 01h 49h 4Eh 56h 53h 31h 0Ah receive: 06h 89h 01h 49h 4Eh 56h 53h 0Ah
Change Installation Mode 2 Name to "Widescreen" (unused character are filled with space = 20h)	send: 21h 89h 01h 49h 4Eh 4Dh 32h 0Ah receive: 06h 89h 01h 49h 4Eh 4Dh 32h 0Ah send: 57h 69h 64h 65h 73h 63h 72h 65h 65h 6Eh receive: 06h 89h 01h 49h 4Eh 4Dh 32h 0Ah



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