

BLACK WING **THREE**



User manual
R599760

Cine **VERSUM**

Changes

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1.0 INTRODUCTION

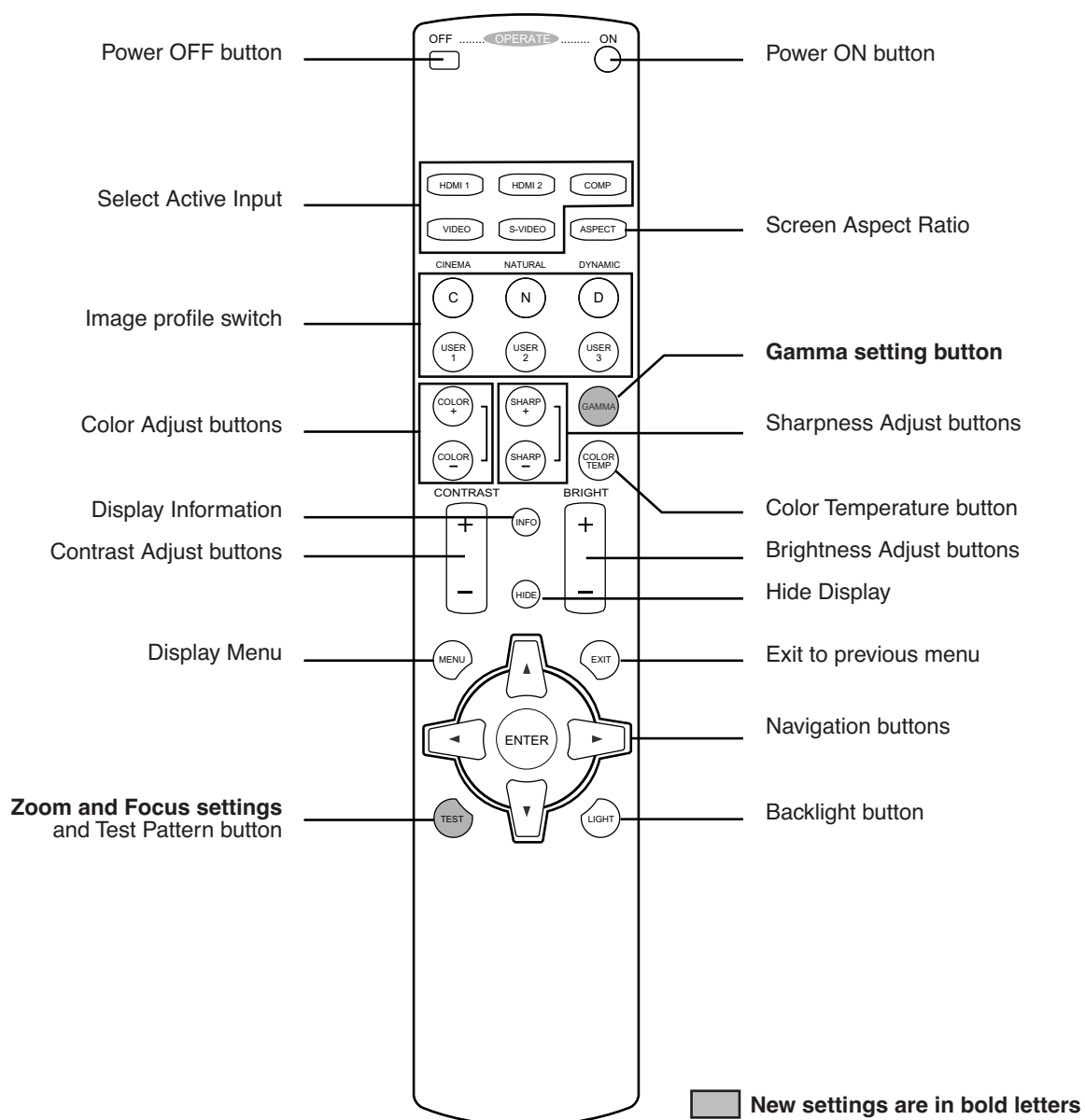
1.1 Upgrades and Changes

The BlackWing Three features the latest innovations on the projector market:

- The two HDMI inputs version 1.3.
- The BlackWing Three complies with “HD-Ready 1080p” standard.
- The new Optical Lens features a motorized zoom and focus for easier install.
- The Light Engine has been re-designed to achieve an improved contrast.
- The Color-Select filters have been improved to obtain a wider color spectrum reproduction.
- The new LCoS chips use a finer manufacturing process to obtain greater performances and more accurate colors reproduction.
- The software includes extended options and picture settings that improves the control over the picture quality.

The BlackWing Three is a stunning projector achieving an unbelievable 30,000:1 contrast ratio, a more accurate color reproduction within billion color graduations.

1.2 Remote Control Unit



1.3 Quick Start

Plug your video source into the BlackWing Three

Connect your video source to the BlackWing Three using one of the available inputs:

- HDMI 1 (version 1.3 with HDCP, supports digital SD, HD and PC formats)
- HDMI 2 (version 1.3 with HDCP, supports digital SD, HD and PC formats)
- VIDEO (supports analog SD signals)
- S-VIDEO (supports analog SD signals)
- COMPONENT (supports YPbPr, RGB and RGsB encoding, digital SD, HD up to 1080i and PC formats)

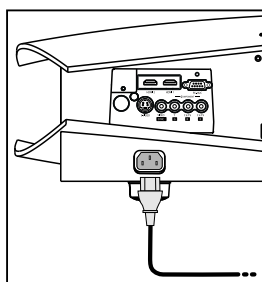


SD signals: NTSC, PAL, PAL-N, PAL-M, SECAM for analog and 480i/p, 576i/p for digital.

HD signals: 720p50/60 Hz, 1080i50/60 Hz, 1080p24/50/60 Hz

PC formats: VGA, SVGA, XGA and SXGA @ 60Hz, see page 11 for more details.

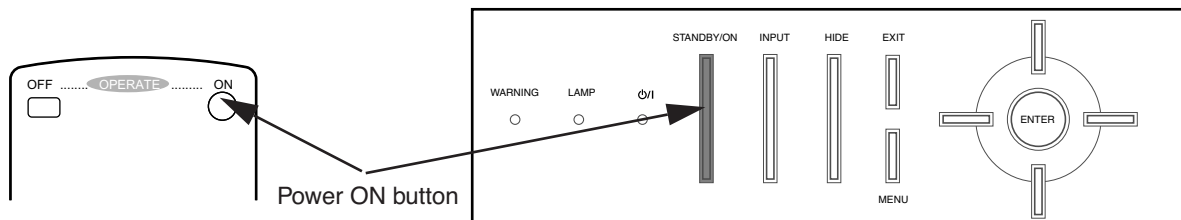
Plug the projector to the main power



- Before plugging in the Power Cord, ensure that all devices have been connected.
- Connect the power cord to the power input terminal of the projector.

Switch ON the projector

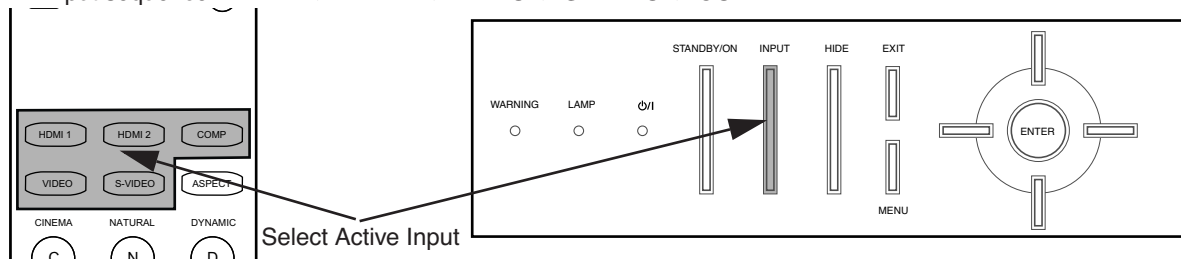
- With the Remote Control Unit (RCU) by pressing the [ON] button.
- Press the [Standby/ON] button at the Back Panel of the BlackWing Three.



Switch ON the projector.

Select the source

- With the RCU by pressing the desired input button.
- Press sequentially the Input button at the back of the BlackWing Three until you obtain the correct input.
Input sequence: HDMI 1 -> HDMI 2 -> VIDEO -> S-VIDEO -> COMP



Select the video source with the RCU or using the Back Panel of the projector.

Switch OFF

- With the RCU by pressing the [OFF] button.
- Press the [Standby/ON] button at the back of the BlackWing Three, and confirm the projector extinction by

pressing the button again.



To prevent the lamp lifetime to get shortened, the projector cannot be switched OFF right after the lamp warm-up. This is normal, wait 60 seconds until you can switch OFF the projector.
Never unplug the projector when it is switched ON, it may damage the lamp.

2.0 FEATURE HIGHLIGHTS

2.1 Motorized Focus and Zoom

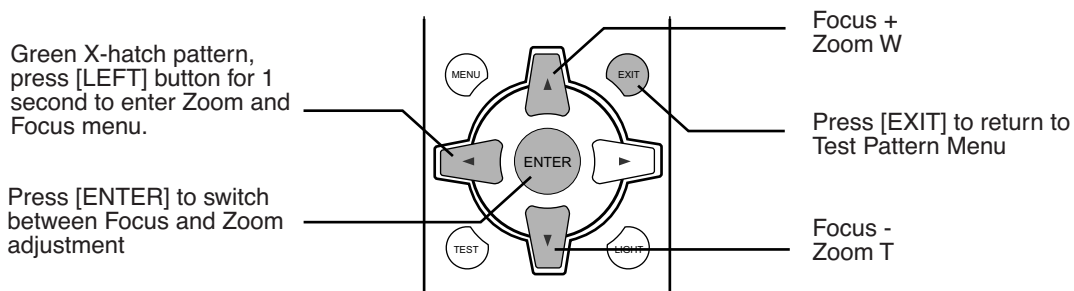
The new Optical Lens features a motorized Zoom and Focus that can be accessed from the RCU or through the On Screen Display using the Back Panel buttons of the projector.



The Focus and Zoom adjustments cannot be set manually.

Using the internal green X-hatch pattern

- With the RCU:
 - a) Press repeatedly the [TEST] button on the RCU until you get the green X-hatch test pattern.
 - b) Then press [LEFT] button for 1 second until the Setting Focus window appears.
 - c) Use the [UP] and [DOWN] buttons to change the Focus.
 - d) Press [ENTER] to set the Zoom using [UP] and [DOWN] buttons.



- From the Back Panel or RCU using the On Screen Display (OSD):
 - a) Press [MENU] button, and browse to the Install Menu.
 - b) Select the Test Pattern Menu.
 - c) Select the green X-hatch test pattern.
 - d) Press [LEFT] button for 1 second until the focus setting window appears.
 - e) Use [UP] and [DOWN] buttons to change the Focus.
 - f) Press [ENTER] to set the Zoom using [UP] and [DOWN] buttons.

Using an external test pattern (for advanced user)

- a) Connect your calibrated source to an available input.
- b) Set your programmable RCU or RS-232 device with ZoomT, ZoomW, Focus+ and Focus- functions. (see page 15 for more details)
- c) Display the desired test pattern and make the adjustments.

2.2 Gamma menu

Setting the correct value to the Gamma

Gamma is the relationship between the color values of the data and the color values displayed. The Gamma coefficient makes it possible to adjust the brightness of the midtones only affecting the very bright and very dark areas. If gamma is set to high, middle tones appear to dark. If it's set too low, middle tones appear too light. The Gamma correction can be set to Normal, Theatre1, Theatre2, Dynamic or Custom.

Normal uses the factory default calibration and will suit most setup.

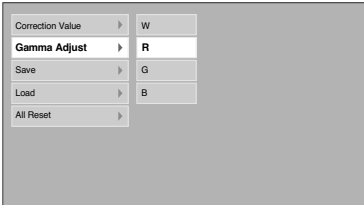
Theatre1, Theatre2 and Dynamic use lower gamma values that can be directly changed using the RCU by pressing the [GAMMA] button, choose the best setting to your ambient light environment.

Custom (Gamma Setup)

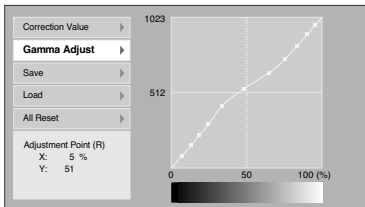
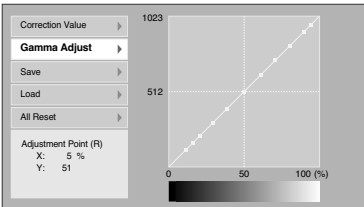
Custom Gamma Setup allows a fine adjustment of the projector gamma setup. The Custom sub-menu gives access to:

- Correction Value from 1.8 up to 2.6
- Gamma Adjust Sub-Menu: advanced gamma curve setting.
- Save: save the adjusted gamma curve parameters into memory.
- Load: load a curve from memory.
- All Reset: reset the gamma curve parameters to default settings and apply the Correction Value [1.8 - 2.6].

Gamma Adjust Sub-Menu (for advanced user)



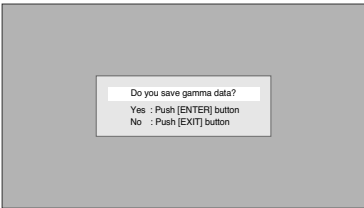
Select the color channel to adjust:
W stands for White and will adjust Red, Green and Blue
R stands for Red only
G stands for Green only
B stands for Blue only



Select the point to adjust
[LEFT] and [RIGHT] buttons

Adjust the point coordinates
[UP] and [DOWN] buttons

Select Gamma Adjust to change the gamma curve



Press [EXIT] button to return to the main Menu.
Press [ENTER] to save the Gamma settings.



You can also use the PC-compatible software “ILAFPJ-Gamma” to set the Custom Gamma adjustment using the RS-232 input. Check www.cineversum.com for download.

2.3 Setup Menu

Image Profile

The Image Profiles stores the following parameters:

- Contrast
- Brightness
- Color
- Sharpness
- DNR
- Color Temperature
- Gamma setting
- Offset

Use the predefined Profiles: Cinema, Natural or Dynamic or configure your own Image Profile and save it to one of the 3 available User Profiles.

Profile Memory

Manage your Image Profiles. You can save the Profile settings, Clear the User1, User2 and User3 Profiles and Reset the predefined profiles Cinema, Natural and Dynamic to their default factory values.

Overscan (available with SD signal)

The SD signals are generally encoded into a frame which is larger than the active picture. The projector can manually disengage the overscan feature and obtain the full original picture as it is encoded and sent to the projector before the overscan crop.

The Overscan can be set to:

- ON (2.5%)
- OFF

Mask (available with HD signal)

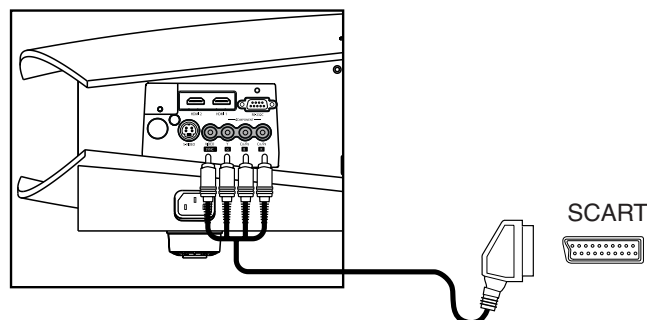
The Mask features 3 overscan levels for HD signals: 2.5%, 5% and OFF.

2.4 Source Menu

Comp

You can configure the COMPONENT input of the BlackWing Three:

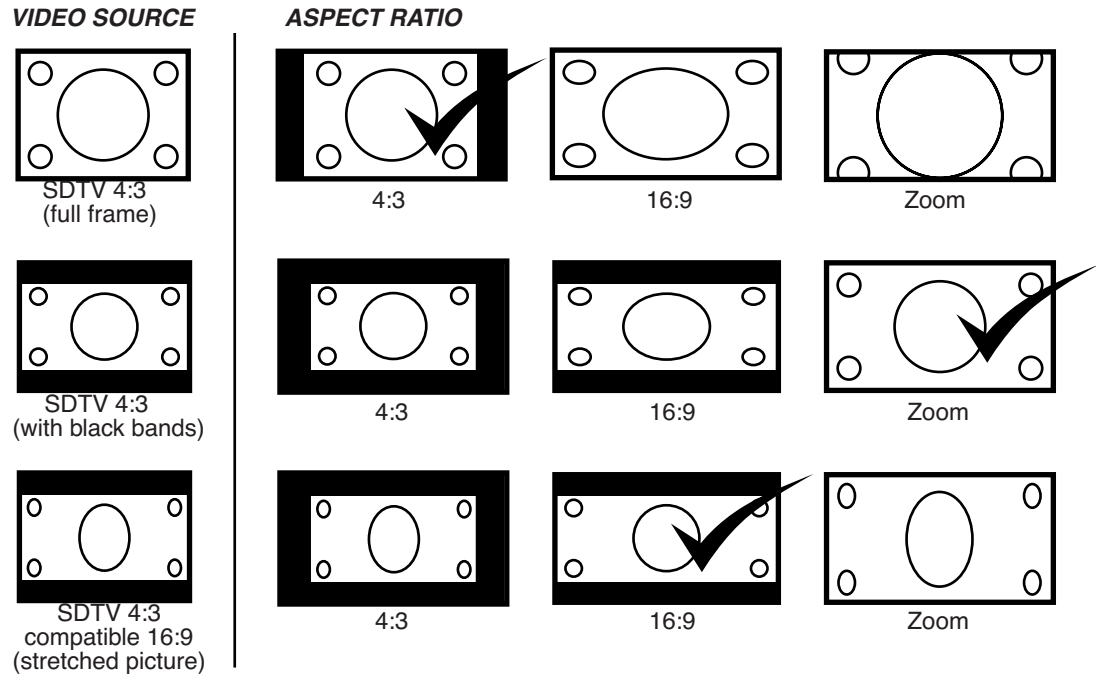
- YPbCb/PrCr: set the COMPONENT input to decode YPbCb/PrCr video signals.
- RGB: set the COMPONENT input to decode RGB video signals.
- RGsB: set the COMPONENT input to decode a SCART input (for European market). The RGsB connections use the Component and Video inputs.



RGsB require Component and Video inputs.

Aspect (available with SD signals)

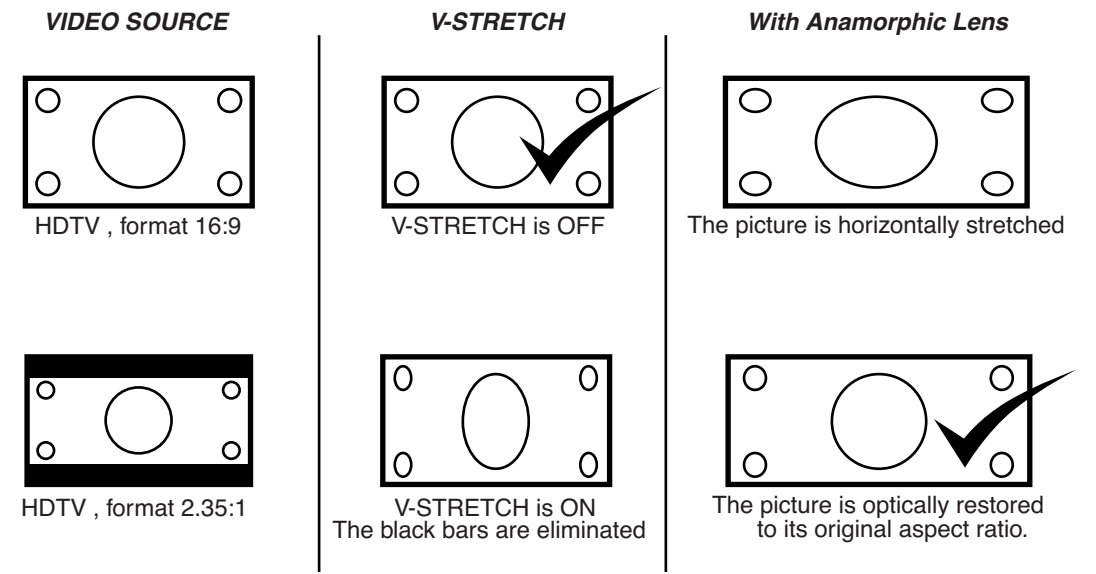
Aspect Ratio: changes the aspect ratio of the picture to the screen. Select the Aspect Ratio to your convenience, depending on the format of the signal.



Screen Aspect Ratio

Vertical Stretching (available with HD signals)

The V-stretch mode is available for any HD signals connected to HDMI1 or HDMI2 and COMP inputs and can be used to vertically stretch the picture when using an anamorphic Lens.

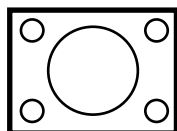


 The V-stretch value is stored into memory per resolution and refresh rate.

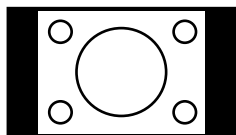
Resize (available with PC-compatible signals)

The PC-compatible supported formats are:

PC format	Resolution	fH	fV	pixel clock	Polarity	
					H	V
VGA@60Hz (1)	640x480	31.500 kHz	60.000 Hz	25.200 MHz	-	-
VGA@60Hz (2)	640x480	31.469 kHz	59.940 Hz	25.175 MHz	-	-
SVGA@60Hz	800x600	37.879 kHz	60.317 Hz	40.000 MHz	+	+
XGA@60Hz	1024x768	48.363 kHz	60.004 Hz	65.000 Mhz	-	-
SXGA@60Hz	1280x1024	63.981 kHz	60.020 Hz	108.000 Mhz	+	+

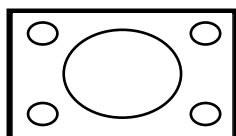
PC SOURCE

PC format: 1024x768

RESIZE

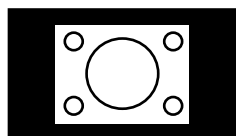
ASPECT

ASPECT enlarges the PC format until it fits the screen height, the aspect ratio is not modified.



PANEL

PANEL enlarges the PC format until it fills the screen, the aspect ratio is changed to 16:9.



1:1

1:1 displays the PC format using a pixel to pixel mapping.



[ASPECT] button on the RCU triggers the Resize configuration when a PC-compatible signal input is active.

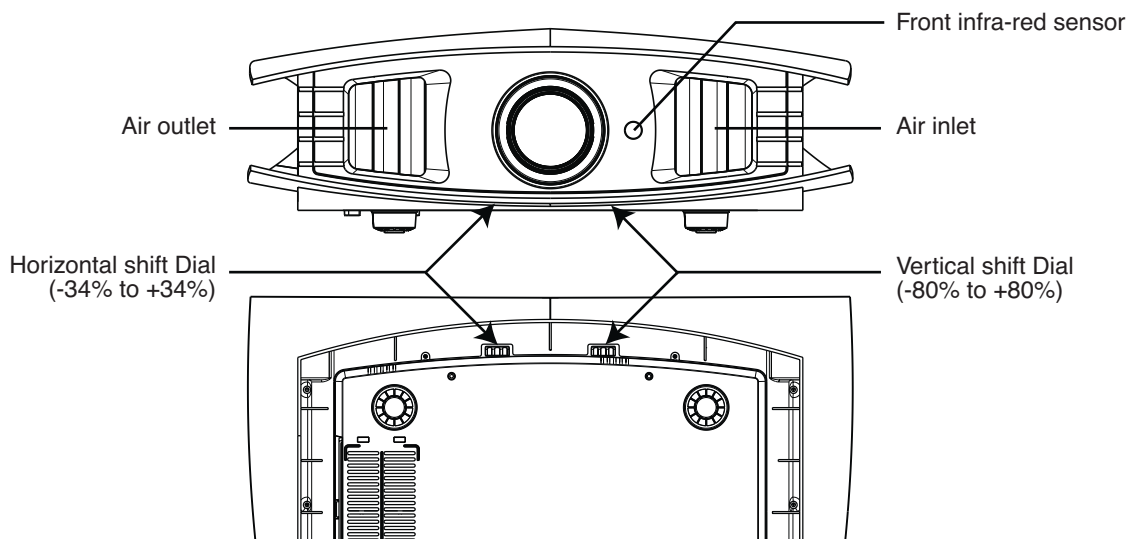
3.0 INSTALLATION GUIDELINES

3.1 Projection Distance

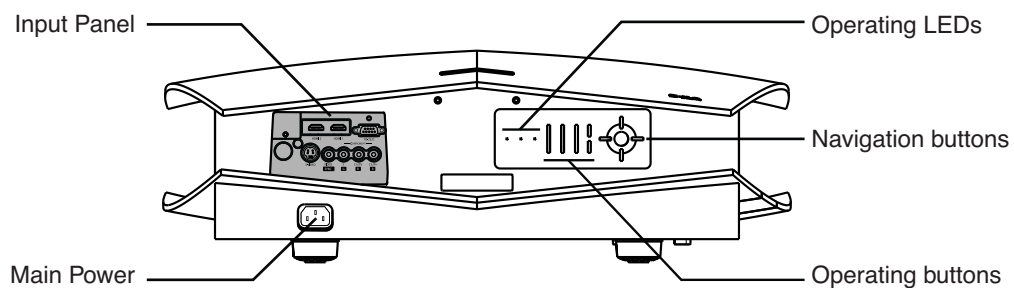
Projection Screen Size Diagonal size (Aspect Ratio 16:9)	Projection Screen Size Base size (Aspect Ratio 16:9)	Projection Screen Height (Aspect Ratio 16:9)	BlackWing Three
			Projecting Distance minimum - maximum
60" (1524 mm)	52,3" (1328 mm)	29,4" (747 mm)	1821 mm - 3659 mm
83" (2108 mm)	72,3" (1837 mm)	40,7" (1034 mm)	2519 mm - 5062 mm
92" (2337 mm)	80,2" (2037 mm)	45,1" (1146 mm)	2792 mm - 5611 mm
110" (2794 mm)	95,9" (2435 mm)	53,9" (1370 mm)	3339 mm - 6709 mm
138" (3505 mm)	120,3" (3055 mm)	67,7" (1718 mm)	4188 mm - 8417 mm
150" (3810 mm)	130,7" (3321 mm)	73,5" (1868 mm)	4553 mm - 9149 mm
180" (4572 mm)	156,9" (3985 mm)	88,2" (2241 mm)	5463 mm - 10978 mm
200" (5080 mm)	174,3" (4428 mm)	98,1" (2491 mm)	6070 mm -12198 mm

- The projection screen sizes and projecting distances in the table above are provided only as a guide. Please use them as reference during installation.

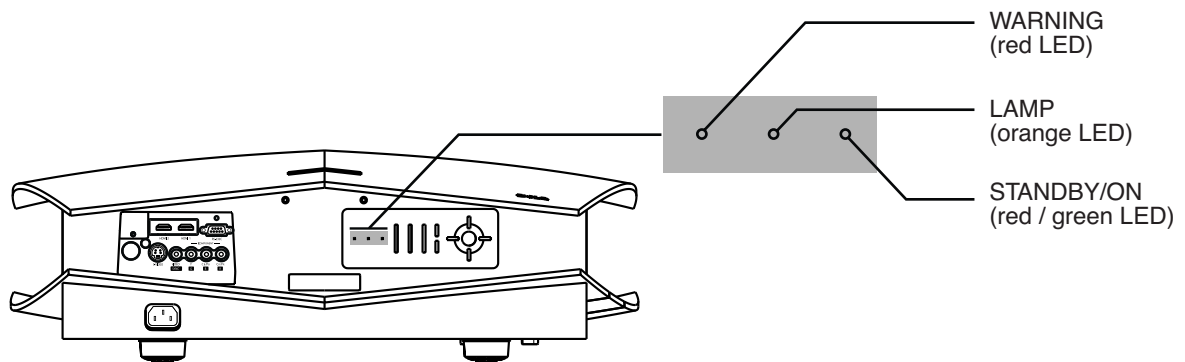
3.2 Vertical and Horizontal Offset setting



3.3 Rear side

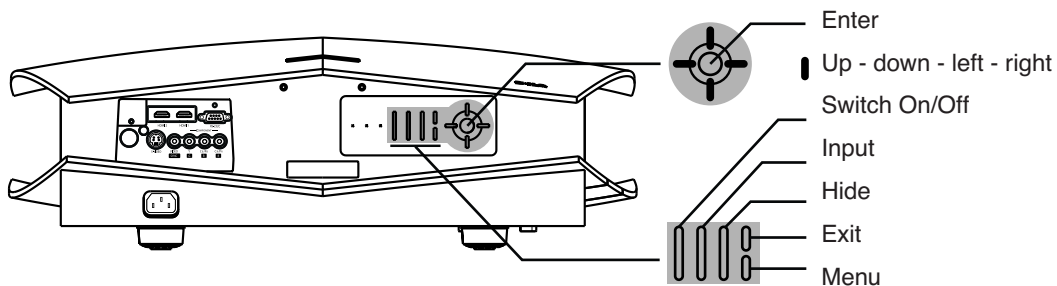


3.4 Operating LEDs



LED	Status	Description
WARNING	RED	An error occurs and prevents the projector to be switched ON.
LAMP	ORANGE	Lamp time exceeds 1900 hours, replace the lamp before 2000 hours.
	ORANGE Blinking	An error occurs during projection or the lamp cover is not firmly closed
STANDBY/ON	RED	The projector is in STANDBY Mode.
	RED Blinking	The projector is in Cooling down Mode, wait until the fans stop.
	GREEN	The projector is working.
	GREEN Blinking	The picture is temporarily hidden, press [HIDE] button again to get the picture.

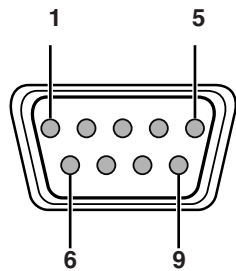
3.5 Operating and Navigation Buttons



Button	Description
Enter	To select or confirm.
Up - down - left - right	To navigate into On Screen Display Menu.
Switch On/Off	To turn On or Off the projector.
Input	To switch the input selection.
Hide	To hide temporary the picture.
Exit	To return to previous menu or cancel action.
Menu	To display On Screen Display (OSD) Menu.

3.6 RS-232C Protocol

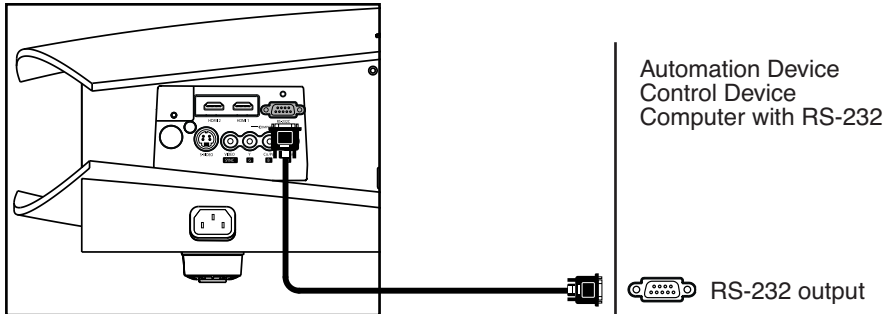
Pin Assignment



Pin No.	Signal Name	Pin No.	Signal Name
1	N/C	6	N/C
2	RD	7	N/C
3	TD	8	N/C
4	N/C	9	N/C
5	GND		

External Control

Control of this unit is possible via a computer by connecting this unit to an automation device or computer with a RS-232C cross cable (D-sub 9 pins). The commands to control this unit and the response data format against the received commands are explained here.



Communication Specifications

Communication specifications for this unit are as follows:

Baud Rate	19200 bps
Data Format	Binary
Character Length	8 bits
Parity	None
Start Bit	1 bit
Stop Bit	1 bit
Flow Control	None

Command Format

When sending a command to this unit, use the following data format:

Header	Proj. ID	Command	Com. Parameters	LF
1 byte	2 bytes	2 bytes	Variable length: 0, 1 or 4 bytes	1 byte

Header : Designates the Command type. 2 possible headers:

! (21h): Assigns command to the projector (Command)

? (3Fh): Query data from the projector (Asking command)

Proj. ID : Designates the Projector Identification. Fixed to 89h 01h.

Command : Designates command.

Com. Parameters : Designates the command parameters. Variable length from 0 to 4 bytes

LF : Designates the end of the data. Fixed to Line Feed (0Ah)

*[] is not necessary

Response data format

Upon receiving a valid control command, the unit sends back a response data to the computer to confirm the command: see the examples below.

Available Commands and Parameters

a) Commands

Command Header (21h)	ASCII code	Parameters	Description
Connection Check	00h 00h	none	Checks whether communication between the projector and the computer is working
Power ON/OFF	50h 57h	31h	If the projector is in standby mode, this command switch this unit ON.
		30h	If the projector is powered ON, this command switch this unit into Standby Mode.
Switch Input	49h 50h	30h	Switch active input to S-Video
		31h	Switch active input to Video
		32h	Switch active input to Comp.
		36h	Switch active input to HDMI 1
		37h	Switch active input to HDMI 2
Switch gamma table	47h 54h	30h	Switch Gamma to NORMAL
		31h	Switch Gamma to THEATER1
		32h	Switch Gamma to THEATER2
		33h	Switch Gamma to DYNAMIC
		34h	Switch Gamma to CUSTOM
Gamma coef.	47h 50h	30h	Set gamma coefficient to 1.8
		31h	1.9
		32h	2.0
		33h	2.1
		34h	2.2
		35h	2.3
		36h	2.4
		37h	2.5
		38h	2.6

Test Pattern	54h 53h	30h	Do not display
		36h	Display Grey Staircase
		37h	Display Red Staircase
		38h	Display Green Staircase
		39h	Display Blue Staircase
Emulate RCU	52h 43h	ASCII IR codes (xxh xxh xxh xxh)	The command sent is executed as a Remote Control Unit command. (See below the RCU Command list and Parameters)
Focus +	52h 43h	37h 33h 33h 31h	Focus + adjustment: Use 20ms loop time for fast adjustment, 100ms for fine adjustment.
Focus -	52h 43h	37h 33h 33h 32h	Same as Focus+
Zoom T	52h 43h	37h 33h 33h 35h	Zoom T adjustment: Use 20ms loop time for fast adjustment, 100ms for fine adjustment.
Zoom W	52h 43h	37h 33h 33h 37h	Same as Zoom T

b) Emulate Remote Control Unit Commands (4 bytes)

To emulate a command sent by the RCU, you should send the following command:

Header: 21h Proj. ID: 89h 01h Command: 52h 43h Parameters: 4 bytes

Choose the correct Parameters listed below according to the command

Remote Control Button name	Parameters / ASCII IR codes
Up button	37h 33h 30h 31h
Down button	37h 33h 30h 32h
EXIT	37h 33h 30h 33h
Operate ON	37h 33h 30h 35h
Operate Off	37h 33h 30h 36h
HIDE	37h 33h 31h 44h
MENU	37h 33h 32h 45h
ENTER	37h 33h 32h 46h
Focus +	37h 33h 33h 31h
Focus -	37h 33h 33h 32h
Right button	37h 33h 33h 34h
Zoom T	37h 33h 33h 35h
Left button	37h 33h 33h 36h
Zoom W	37h 33h 33h 37h
VIDEO	37h 33h 34h 42h
S-VIDEO	37h 33h 34h 43h
COMP.	37h 33h 34h 44h
TEST	37h 33h 35h 39h
Cinema	37h 33h 36h 39h
Natural	37h 33h 36h 41h
Dynamic	37h 33h 36h 42h
User 1	37h 33h 36h 43h
User 2	37h 33h 36h 44h
User 3	37h 33h 36h 45h
HDMI 1	37h 33h 37h 30h
HDMI 2	37h 33h 37h 31h
INFO	37h 33h 37h 34h
GAMMA	37h 33h 37h 35h
Color Temp.	37h 33h 37h 36h
Aspect	37h 33h 37h 37h
Contrast (+)	37h 33h 37h 38h
Contrast (-)	37h 33h 37h 39h
Brightness (+)	37h 33h 37h 41h

Brightness (-)	37h 33h 37h 42h
Color (+)	37h 33h 37h 43h
Color (-)	37h 33h 37h 44h
Sharp (+)	37h 33h 37h 45h
Sharp (-)	37h 33h 37h 46h

Example:

To emulate Brightness (+), send the command: 21h 89h 01h 52h 43h 37h 33h 37h 41h 0Ah

c) Examples

You want to...	Command (PC -> Projector)	Response Data (Projector -> PC)
Check the connection between the projector and the computer	21h 89h 01h 00h 00h 0Ah	ACK: 06h 89h 01h 00h 00h 0Ah
Switch the projector ON	21h 89h 01h 50h 57h 31h 0Ah	ACK: 06h 89h 01h 50h 57h 0Ah
Switch the projector OFF	21h 89h 01h 50h 57h 30h 0Ah	ACK: 06h 89h 01h 50h 57h 0Ah
Switch the projector OFF with OSD confirmation (Emulate RCU)	21h 89h 01h 52h 43h 37h 33h 30h 36h 0Ah	ACK: 06h 89h 01h 52h 43h 0Ah
Change Active Input to Comp.	21h 89h 01h 49h 50h 32h 0Ah	ACK: 06h 89h 01h 49h 50h 0Ah
Display On Screen Menu (Emulate RCU)	21h 89h 01h 52h 43h 37h 33h 32h 45h 0Ah	ACK: 06h 89h 01h 52h 43h 0Ah
Change the Gamma coef. to 2.2	21h 89h 01h 47h 50h 34h 0Ah	ACK: 06h 89h 01h 50h 43h 0Ah
Enlarge the picture using the motorized Zoom.	repeat the command below: 21h 89h 01h 52h 43h 37h 33h 33h 37h 0Ah 20ms loop time for fast adjustment and 100ms for fine adjustment	ACK: 06h 89h 01h 52h 43h 0Ah
Ask the projector its power state The projector being powered ON	3Fh 89h 01h 50h 57h 0Ah	ACK: 06h 89h 01h 50h 57h 0Ah Rsp : 40h 89h 01h 50h 57h 31h 0Ah
Ask the projector its Active Input S-Video being active	3Fh 89h 01h 49h 50h 0Ah	ACK: 06h 89h 01h 49h 50h 0Ah Rsp : 40h 89h 01h 49h 50h 30h 0Ah

4.0 MENU STRUCTURE

MAIN MENU	SUBMENU	AVAILABLE OPTIONS	
Image	Image Adjust	Contrast	-50 +50
		Brightness	-30 +30
		Color	-50 +50
		Tint (for NTSC sources)	-30 +30
		Sharpness	-30 +30
		DNR (Digital Noise Reduction)	0 +30
	Color Temp.	Presets: Low, Middle, High	
		Memory 1:	
		Red	-255 to 0
		Green	-255 to 0
		Blue	-255 to 0
		Memory 2:	
		Red	-255 to 0
		Green	-255 to 0
		Blue	-255 to 0
	Gamma	Normal	
		Theater1	
		Theater 2	
		Dynamic	
		Custom:	
	Offset	Correction Value	1.8 to 2.6
		Gamma Adjust	see page 8
		Save	
		Load	
		All Reset	
	Pixel Adjust	Red	-60 +60
		Green	-60 +60
		Blue	-60 +60
		Horiz. Red	1 to 7
		Horiz. Green	1 to 7
		Horiz. Blue	1 to 7
		Vert. Red	1 to 5
		Vert. Green	1 to 5
		Vert. Blue	1 to 5

Setup	Image Profile Parameters: Contrast / Brightness Color / Sharpness DNR / ColorTemp Gamma / Offset	Cinema Natural Dynamic User1 User2 User3	(Movie quality in dark room) (Picture as is in dark room) (Bright scenes or bright room) (User defined) (User defined) (User defined)
	Profile Memory	Save Save Save Clear Clear Clear Reset Reset Reset	User1 User2 User3 User1 User2 User3 Cinema Natural Dynamic
	Picture Position	Adjust the horizontal and vertical position of the picture on the screen	
	HDMI Input Level (Available for HDMI1 and 2 inputs)	Standard Enhanced	
	Mask (for High Definition picture)	OFF, 2.5%, 5%	
	Overscan (for Standard Definition picture)	OFF ON (2.5%)	
Source	COMP (for Component Input)	Y PbCb/PrCr RGB SCART	
	HDMI (for HDMI 1 and HDMI 2 Inputs)	Auto YCbCr (4:4:4) YCbCr (4:2:2) RGB	(Autodetect the HDMI color space)
	Aspect (for Standard Definition picture)	4:3 16:9 Zoom	
	V-Stretch (for High Definition picture)	OFF ON	
	Resize (for PC format picture)	Aspect Panel 1:1	
	Film Mode	Auto Off	
	Color System (for Video or S-Video Inputs)	Auto, NTSC, NTSC4.43, PAL, PAL-M, PAL-N, SECAM	
	Black Level (for NTSC sources)	0%, 7.5%	

Install	Menu Position	Upper Left Upper Center Upper Right Left Center Center Right Center Lower Left Lower Center Lower Right	
	Menu Display	15 sec. On	The menu fade out after 15 sec. Must press [EXIT] to exit menu
	Line Display (Display the active input when switching input)	5 sec. Off	
	Flip H. (for rear projection)	On Off	
	Flip V. (for ceiling mounting)	On Off	
	High Altitude	On Off	
Func.	Back Color (background color when no signal)	Blue Black	
	Sleep Timer (The projector goes automatically into Standby Mode when no signal)	15 30 60 Off	(in minutes)
	D-ILA Logo (Logo displayed during startup)	On Off	(D-ILA logo is displayed 5 sec.)
	Lamp Power	Normal High	(170W) (200W)
	Test Pattern*	Test Patterns, Focus and Zoom adjustment Menu	
	Language	Japanese, English, German, Spanish, Italian, French, Portuguese, Dutch, Swedish, Norwegian, Chinese (Simplified)	
Info.	Input	Display selected video Input	
	Format	Display the type of current input video	
	H Frequency (PC format picture)	Display horizontal frequency	
	V Frequency (PC format picture)	Display the vertical frequency	
	Lamp Time	Display the accumulated hours usage of the lamp	



*TEST PATTERN MENU

When the green X-hatch pattern is displayed, press the [LEFT] button for 1 second to popup the Focus and Zoom menu. Press [ENTER] button to change Focus adjustment to Zoom adjustment. Press [EXIT] button to return to Test Pattern selection.

5.0 MISCELLANEOUS

5.1 Specifications

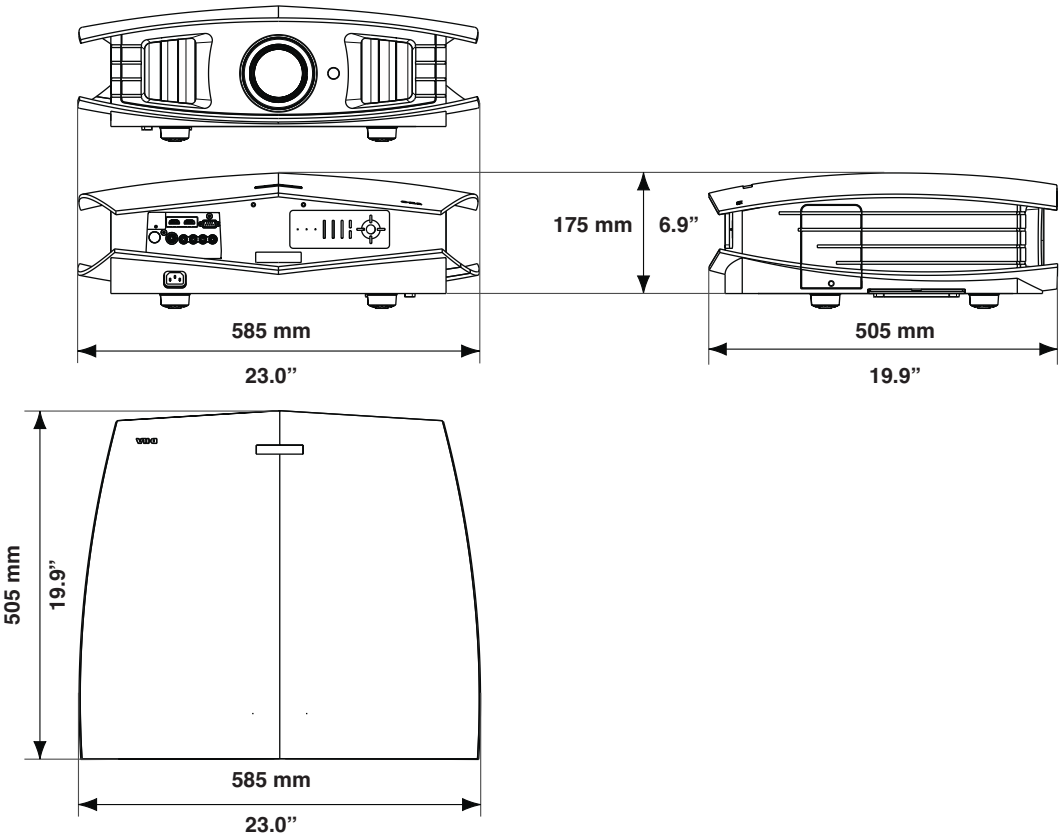
Overview

The BlackWing Three uses the latest technology developed for professional projectors.

Emission Method	LCoS (Reflective Active Matrix Principle)
Display Panel/Size	0.7" panel
Native Resolution	3x 1920 x 1080 pixels
Contrast Ratio	30,000:1
Projection Lens	Throw Ratio 1.4:1 - 2.8:1 2x optical Zoom Motorized Zoom and Focus
Brightness	900 ANSI Lumens
Light-source Lamp	170 W Ultra-high pressure mercury lamp
Screen Size	60" to 250" diagonal (Aspect ratio 16:9)
Distance range	from 1,82 m to 12 m
Input Signals	
Video Input	NTSC, PAL, SECAM
S-Video Input	NTSC, PAL, SECAM
Component Input	(YPbPr, RGB and RGsB) 480i/p, 576i/p, 720p50/60, 1080i50/60 VGA(1), VGA(2), SVGA, XGA, SXGA
HDMI 1 Input	480i/p, 576i/p, 720p50/60, 1080i50/60, 1080p24/50/60 VGA(1), VGA(2), SVGA, XGA, SXGA
HDMI 2 Input	480i/p, 576i/p, 720p50/60, 1080i50/60, 1080p24/50/60 VGA(1), VGA(2), SVGA, XGA, SXGA
Color System	NTSC, NTSC4.43, PAL, PAL-N, PAL-M, SECAM
Input Sync Frequency	
Analog Inputs	74.5 Mhz
Digital Inputs	225 Mhz
Power Requirements	AC 100 V - 240 V AC, 50 Hz/60 Hz
Power Consumption	280W (2.7W in standby mode)
Operation Environment	Temperature: +5°C to +35°C Storage Temperature: -10°C to +60°C Humidity: 20 % to 80 % (No condensation)
Dimensions (Width x Height x Depth)	585 x 175 x 505 mm - 23.0" x 6.9" x 19.9" (Excluding lens and protrusion portion)
Net Weight	11,0 Kg - 24.5 lbs

- Design and specifications are subject to change without prior notice.
- Please note that some of the pictures and illustrations may have been abridged, enlarged or contextualized in order to aid comprehension. Images may differ from the actual product.

5.2 Dimensions





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