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Interview with DOP On Shooting DHADAK

Vishnu Rao

Interview with DOP On Shooting ZERO

Manu Anand

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Aditi Sharma

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January - March 2019

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Editor's Desk

Greetings of the New Year

First of all, a big thanks to everyone for the overwhelming response on our last issue of 'Cinematography Art' magazine, which has completed its 5 years. The January issue is a very special one as we talk to the Filmfare award winner Manu Anand discussing his experiences about the films he has shot and his preferences connected to the kind of lighting he inculcates in a particular film which ultimately decides the mood of the film. He also reveals how he overcame the challenges he faced while shooting the recently released feature film "zero" which is quite an interesting read.

This issue also features an interview of one of leading cinematographers of India Vishnu Rao. It covers the various aspects of lighting and how he builds emotions through lighting. He also shares his experience of shooting 'Dhadak'

Apart from the usual interviews, there are few glimpses of Broadcast India Show, in existence for over 27 years; it has becomes the interactive platform that showcases the paradigm shifts in infotainment technology across the globe as well as allows you to connect with the innovators and experience the 'marvels' first-hand.

Whenever the exciting technology improves upon or meets a new technological substitute, it takes the film world by storm. Just think, before 2013 nobody had ever released a powered gimbal meant for stabilizing footage (the first being the Movi M10 announced at NAB 2013), and cinema-quality drone footage was not readily available to consumers and professionals alike until just around 2014 with the Inspire 1 release. The DJI- Ronin is a very exciting piece of technology and I have included a detailed article on the same.

Cheers!!
Naresh Sharma
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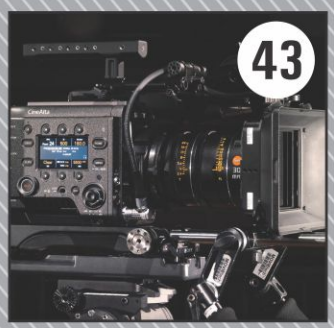

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Introducing MIX – Winner of the 2018 Cine Gear Technical Award for Lighting Technology – from DMG Lumière by Rosco. This LED technology will change how filmmakers create colored light on set.

MINI -SWITCH

The MINI Switch has the same attributes as the original SL1 Switch, which for its size/weight/power ratio has an outstanding light quality.

Its frame and accessories have been designed to be both robust and ergonomic, which add to the facility of use.

The perfect lighting tool for the nomadic, quality conscious technician. The MINI Switch is a super lightweight and portable panel which can be used anywhere and everywhere. It comes with AC and DC power solutions as well as a wide range of diffusion accessories available. All of which fit nicely into one bag. It is the ideal companion on any set, location, confined space, low ceiling studio, documentary shooting... the list is limitless. The MINI Switch, designed for versatility.

SL1- SWITCH

It all started with the SL1. It was created to find an alternative LED solution to the fluorescent tube (which we loved incidentally). We wanted to design a light which would be robust, compact, colour changing and dimmable. That would also incorporate a soft and round light source in a lightweight and durable housing. Together with a broad range of diffusion and rigging accessories this fixture is autonomous and versatile. The Dome, which creates an even softer effect is DMG's users favourite accessory. The SL1 Switch is the foot soldier, it brings security and comfort on set.

MAXI - SWITCH

The MAXI Switch has arrived!

This unique light is the latest (and largest!) edition to the DMG Family. It measures 125x74x2cm (4' x 2.2' x 3/4") for only 12.5Kg (27lbs), MAXImising its output to an outstanding 520W LED power.

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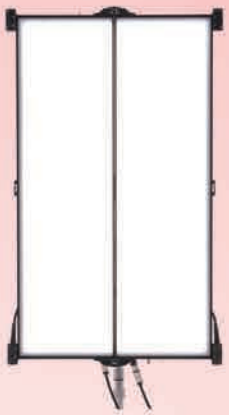

a smart hinge, it can fold, making it easy to transport. The two panels can also work separately and be controlled in "split mode". The MAXI Switch yoke allows 360° rotation for maximum freedom, and can also lock the two panels in any position between flat-open and closed.

Containing the latest remote control technologies (DMX / Wireless DMX / Wi-Fi /Lan), the MAXI Switch is the ideal companion on location or key lighting in larger studios.

MAXI AC POWER SUPPLY

The MAXI Switch power box is a perfect combination of design and control. It separates into 2 units, the Driver and Power Supply Unit (PS). The Drive also can be mounted on the back of the lamp head for maximum comfort of control. This power box embarks all the latest wireless technology:

WIFI, so it can be controlled directly from your smart phone or tablet

It runs at 24VDC so can also be powered by a battery source with a load of minimum 20Amps

MINI MIX

The patent-pending MIX technology features a proprietary blend of six LEDs: Red + Lime + Green + Blue + Amber + White. This enables the MINI MIX fixture to generate a wide gamut of colors and create accurate Rosco gel matches that have been authenticated by Rosco's color experts.

The MINI MIX allows filmmakers to add colored accent lighting wherever they need it. The ultra-thin, lightweight fixture features a powerful array of emitters that can produce virtually any color desired – anywhere its needed on set.

Set lighting technicians know that speed is of the essence when the cameras are rolling. There are no complicated menus on the MINI MIX. Simply choose between three different modes: White Mode, Gel Mode and Color Mode, then choose the color temperature, hue or Rosco gel color desired and adjust as-needed. All of these features are available using the fixture's on-board controls, or via the myMIX app from your mobile device.

SL1 MIX

The patent-pending MIX technology features a proprietary blend of six LEDs: Red + Lime + Green + Blue + Amber + White. This enables the SL1 MIX fixture to generate a wide gamut of colors and create accurate Rosco gel matches that have been authenticated by Rosco's color experts.

Filmmakers no longer need to sacrifice F-stops for color-mixing technology. The SL1 MIX can produce bright bold colors, and a powerful volume of white light – all from its ultra-thin, lightweight and robust housing.

Set lighting technicians know that speed is of the essence when the cameras are rolling. There are no complicated menus on the SL1 MIX. Simply choose between three different modes: White Mode, Gel Mode and Color Mode, then choose the color temperature, hue or Rosco gel color desired and adjust as-needed. All of these features are available using the fixture's on-board controls, or via the myMIX app from your mobile device.

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The myMIX app provides complete control for all DMG Lumière MIX™ LED fixtures. Available for iOS and Android devices, the app enables filmmakers to not only set the color temperature and select Rosco gel colors for the light, but it also empowers them to mix, capture, save & share colors - all from a mobile device.

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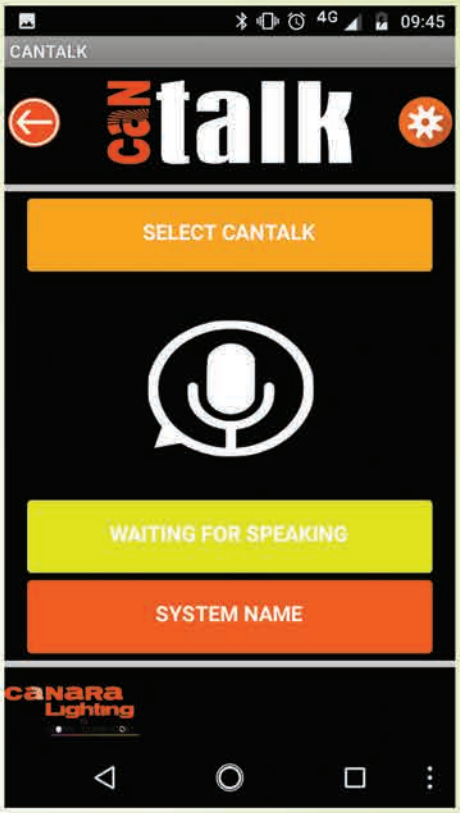
CANTALK

By Canara Lighting



CANTALK

As we know Lighting and sound systems are very important in Entertainment, broad casting, auditorium etc. and the whole set with many lighting and sound systems has to be controlled and monitored simultaneously and synchronously at Control Point. To achieve this DMX Console is a key controller where all lighting and sound systems are looped in daisy loop and controlled together.

DMX Console are available in many variants like No. of Faders, universe, touch screen, self-explanatory graphical interface and many other facilities to comfort the user in handling lighting fixtures. These DMX consoles are table top. As the options are more the cost increases as well as the size. This conventional DMX consoles require some space for placing or there would be separate control room. The portability of these DMX console which will be a tedious process as they are not handy.

About controlling, the faders has to be varied or options has clicked to control and monitor the lighting fixtures. So how about thinking of virtual console where all these DMX lighting fixtures could be controlled as we think of what lights effects to be lit or which light has to light up. It's more like talking to our lights.

Here we presents the design and implementation of a low cost but yet flexible android based voice controlled virtual console system called CANTALK. The design is based on a stand-alone control box called CANTALK and the lighting fixtures are connected to the output port of this box via DMX cables. The communication between the smart phone and the CANTALK is wireless. This system is designed to be low cost and scalable allowing variety of lighting fixtures to be controlled through voice with minimum changes to its core. Password protection is being used to only allow authorized users from accessing the lighting fixtures.

The words "Smart Studio", "Intelligent Studio" followed and has been used to present the idea of web based equipment's and machines in the studio. Studio automation Systems outlines an important research opportunity in creating recent study in engineering, architecture and computing.

Due to the rapid progress in wireless technology, there are various type of links are brought in like Bluetooth, GSM, ZIGBEE, and Wi-Fi. Every link has very own peerless specifications and applications. Out of the four well known wireless connections that frequently

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implemented in studio, Bluetooth is being preferred due to its appropriate capability. Bluetooth with everywhere accessible frequencies of 2400Hz is easy to accommodate connectivity up to 50 meters which is well enough for a studio. The capabilities of Bluetooth are greater than sufficient to be implemented in the design. Further, all of the present smart phones are produced included Bluetooth adapter. It will indirectly decrease the expense of this system.

This system is implemented on a Bluetooth Arduino board with mobile remote control. Further, the mobile control is implemented by Android OS application. Here, Bluetooth connection is fixed by Bluetooth module that straight forwardly receives/ sends instructions from/too smart phone. For the GUI, Android OS on Smart Phone are picked based on the large user allocation in current market.

HARDWARE ARCHITECTURE AND IMPLEMENTATION

This voice based virtual console system consists of two main hardware components: the mobile and the control box called CANTALK. The cell phone hosts the CANARA app which enables the user to access the lighting fixtures and also the control commands for the fixtures. The voice commands communicates with the CANTALK box and sets up a communication protocol between the two devices, which allows controlling the behavior of the CANTALK.

The readymade CANTALK is a micro controller board based on the ATMEGA and the HC05 Bluetooth module is used. It supports wireless serial communication over Bluetooth. The Arduino BT board can be programmed using the micro controller's high-level interactive C language.The Bluetooth antenna in our module picks up the packets sent from the smart phone. Subsequently, these packets containing the fixture status commands are pipelined through ATMEGA micro controller and the designed analogue circuitry according to the definition of each output.

Different lighting fixtures are connected to the DMX output ports of the CANTALK to provide sufficiently high currents and voltage compatibility.

CONNECTIVITY

Upon the execution of the program, it first checks if Bluetooth is already enabled on the phone. If Bluetooth is enabled, the device and service discovery process will run. The software will check if there are already predefined devices stored in the phone's memory.

If they do exist, they will be listed down for the user to select one. The program then checks to see if the selected device is in range. It will then verify if the device is CANTALK. Now if there are no devices stored in memory, the program will search for Bluetooth-enabled devices within the area. Once discovered, these devices will be displayed on the screen and also stored in memory.

Once it is confirmed that the device is CANTALK, the software will store the unique addresses of CANTALK connected to it. Then it will be given its saved name and will prompt the user to enter the pairing password for the CANTALK. Upon entering the correct password, the program stores the connected controller module names inside the phones memory.

Graphical User Interface (GUI) Module

The most important feature of our application is to allowing the user for interacting with the CANTALK. By using the GUI package, we were able to customize the application to include a variety of user interface elements such as text boxes, choice groups, alert messages, lists and command buttons.

The Main Menu displays three options: Menu, Voice button, and Exit. There are two options to choose from the Menu: they are System and Program.

When the system option has been chosen, it contains List of Lighting fixtures which can be controlled through CANTALK. When the Program option has been chosen, the user can program the grouping of the lighting fixtures.

When the Voice button option has been chosen, the user can start speaking the commands to operate the lighting fixtures and lighting fixture will work according to the commands.

Lastly, Exit will let the user end the program.

Communication Module

In this system, we have established an RFCOMM connection between the application on the smart phone and the CANTALK. Once the connection is established, binary streams can be exchanged between the two devices. After the RFCOMM connection has been made, the user can start speaking the status commands for the lighting fixtures. ASCII commands are sent from the Smart phone to CANTALK, which are then converted to binary automatically by the CANTALK. After the commands have been send from the Smart phone, CANTALK reads in the ASCII values through serial port and compares with the binary equivalent of the these values. Then it turns ON / OFF the respective fixture according to the commands received.

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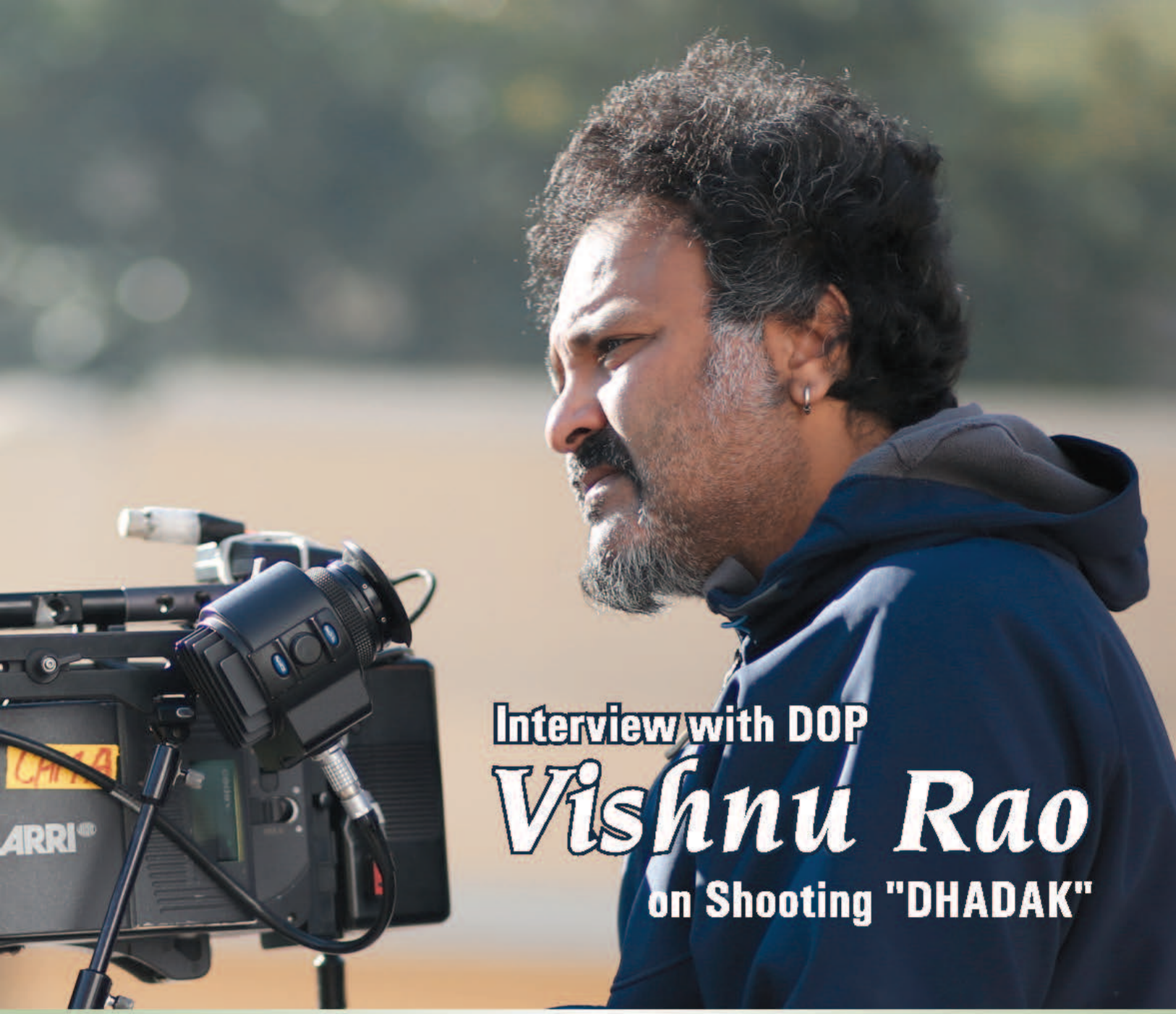
"Dhadak", was the launching film for a star's daughter and another's brother. So what was the brief that you had discussed about the look of the film?

Dhadak was a very happy experience for me. It was just great to work with such lovely and talented young actors and truly a pleasure to work with director Shashank Khaitan. Shashank is one of the nicest people and one of the clearest directors I've worked with. Right at the onset he and I discussed that we didn't want to approach the film with any particular brief on how they, the actors should be launched - our approach to the look was to stay true to the characters and true to the narrative as it unfolded it. Keeping that in mind we approached each half of the film in a distinct and deliberate manner.

In the first half - we aimed to create a look and feel to the environment that the characters inhabited where in our two protagonists could fall in love. This environment was the city of Udaipur - and we treated it as another character that played an important role - The city needed to be as gorgeous as the lovers are - We felt this approach would heighten and enhance their love story. Being a story of young love, we wanted it to look fresh and vibrant. We wanted to create a sense of young energy and abandon at the same time we tried to evoke a sense of innocence and softness. We played with camera movement and colour saturation and lighting of the first half with this in mind - here the camera is moving all the time with the purpose of depicting the emotionally heightened state of the characters. We used a few aerial shots. We designed all our camera moves to be fluid and kinetic - the aim was to create a little bit of magical world for them to fall in love.

By contrast the narrative of second half is somber. The characters are in an environment - the city of Calcutta - which is alien to them and their love story seems to be unraveling. To depict this world we lit and framed this part of



Interview with DOP

Vishnu Rao

on Shooting "DHADAK"

Vishnu Rao graduated from the Film and Television Institute of India (FTII) in 1998. He started out shooting television commercials and has gone on to shoot hundreds of TVCs and numerous music videos. He also has shot a large number of documentaries and short films. He is an accomplished underwater cinematographer and has worked as underwater DOP on many films. His foray into feature films began with the much loved "Bhootnath" and has since gone on to shoot several films. Be it action "Prince", or drama "Hamari Adhuri Kahani", or a love story "Aashiqui 2", "Half Girlfriend", or a thriller "Ek Villain", every film is shot with the same discerning eye and equal passion.

- in this Interview **Naresh Sharma,** finds out the vision and lighting approach of Vishnu Rao on his latest release "Dhadak".

the film with some starkness. Lighting was in general cooler and colours muted and the frames more still. The camera barely moves. It was static in most part of second half. Here we wanted to strip away the energy and create a sense of brooding. To show that when faced with the hard realities of life, theirs has almost come to a standstill. Only once their love and life re-ignites and they move into happier times in the latter part of the second half - which starts of with a song - does the camera start to move again. Here we brought back a bit of the energy with which we shot the first half. The story was always driving us in the way we have shot, framed and conceived every sequence.

As you just mentioned the first half is more high key and the second half is more muted. How did costumes play a part?

The story dictated every factor of the film. In the first half there are vibrant colours. She was in lovely colours that all had a bit of a pop and he had his unique colour palette and style. We wanted colours that drew in the eye and had that youthful energy yet were a real fit with their background and environment. The first half has a a fair amount of costume changes. Not so much in the second half. Here the characters are dressed in less colour - in more plain and ordinary attire in keeping with the storyline. However in the latter part of the second half we see a return to a slightly more colourful palette in their costumes. This is true for the make up as well. Their Udaipur days have a more youthful make up. Whereas in the first part of theirs lives in Calcutta the actors didn't use much make up at all.

I remember a wonderful aerial shot where there are umbrellas made of stones, where he is running. Particularly when you decide to go for a drone shot, what is the basic parameter you look into it in order to figure out that this shot has to be a drone shot?

When one decides to film or use an aerial shot it is generally to create a little bit of an additional visual factor to draw the audience in - to add a bit of a visual punch while showing off the environment the characters are in. When we did the top but him just running in between the stone chatri's - red was the factor that we wanted to stand out - The theme that we played with in the first half, has a bit of red used subtlety in many frames. When our tittle "Dhadak" comes up - a little bit of the red comes in onto the lettering at the very end - this is very relevant to the film.

Another interesting aerial shot was of them riding on the bike in the song

Dhadak. Here we wanted to create a sense that in their world it was just the two of them being alone and in love in the midst of this beautiful landscape. We also used the drone to film aerial shots of the city - we've used these a few times - sometimes to show the scale and beauty of the city in happy moments and even sometimes to create a sense of dread - an uneasy calm before the storm.

The second half of the film shows Calcutta primarily and the first half was more of Udaipur. Every city has its own character in terms of architecture and colours. How did you use these two elements to support the film particularly in second half ?

Well, in the second half like I mentioned the story falls into a somber state and that's why it was devoid of too much colour and is a lot less saturated. To me Calcutta always has been a cooler city tonally. The streets and city infrastructure have a lot of blue and white. It has different kinds of architecture from chaotic market lanes to old colonial buildings to industrial-urban structures. We used the starkness of this architecture to amplify the story line here. Of course we did feature iconic elements that one identifies with Calcutta - like the Victoria memorial and Howrah bridge and the trams and hand rickshaws. These elements and the atmosphere of big city chaos are foreign to our characters which helped in portraying their alienation to the place in which they find themselves.

Udaipur is architecturally much warmer and romantic in feel - with domes and archways, palaces and baori's and ofcourse beautiful lake Pichola. Here we highlighted the flowing architecture and warmer tones using them to enhance the softness of the characters young love.

What was your basic instruction to the production designer to get exactly what the director had perceived as a situation?

For us, a lot of decisions were complementary with each other's departments and in this case everything worked really well. All elements were decided together. Shashank Tere was the production designer. Dhadak was shot primarily on live locations and he did a great job in helping us make them our own - to be right for the film. We also had a couple of key sets - one was an entire mela in the beginning of the film. It was just barren ground and everything had to put up to create the feel of a festival outside small town India. Another great set put up by the production design team was Ratan Singh's Haveli, where we had a substantial amount of work.

How did the director and you go about choosing certain locations to enact certain scenes particularly when Isshan had to sing the English song?

Well, the story dictated the he sing the song in English to prove his courage. The scene had to stay true to the traditional setting in which it was set. We wanted to tell a story to be one set in today's times but without urbanising the environment - to keep it true to the place with it's traditional architecture and the feel. The place also had to feel like a part of the city where a college class trip would visit - these were the factors that we had in mind while picking this location.

While deciding on our locations, a lot of things fell into places organically in

the course of our reconnaissance. We would go "this is something that works just great for that scene" - for instance, Madhu jumping into the Baori. It was this lovely location with all the chatri's which we thought was just wonderful for the end of the song to play out at. It was perfect when we saw it. There was a sense of distance when he runs through all those chatri's which created anticipation and then there was scale and magnificence of his jump across into the water. The choice of locations was very important to us, we wanted them to bring an emotional response - and this is what we had in mind when deciding on all our different locations that we filmed at.

The last shot after her brother comes to her house in Calcutta. There is some kind of uneasiness in the audience and this entire scene was shot in a single take?

The first thing that Shashank and I ever discussed about the film was the ending of it. We wanted to do it in such a way that it would be very effective and at the same time not in your face. Right from the beginning Shashank had the idea that we could do this in a single shot and I loved that thought. I felt that would put the audience right there with Parthavi and experience what she experiences. We designed the shot to keep the audience gripped, to be emotionally invested and then to feel that kick in the gut as the shot culminates. The shot had to be choreographed just right - the path of the actor, the distance and speed of the camera move, the timing of the fall of the bodies and their layout as the camera pulls away - all had to be perfect. We got it in the first take though we did a few more. In the end everything worked out very well.

DI at the end of the day is what every cinematographer can play at or can improve upon. Did you opt for a specific DI artist for this?

Most of the times, I work with Manoj Verma because I think we communicate very well. I think chemistry is important between the DI artist and the DOP. The colourist should understand what the cinematographer wants the visual to say and the parameters used while filming a scene.

In this case we kept it very true to what we captured. Consistently was important to us - we didn't want jumps in the look to distract from the story. We paid attention to skin tones - we wanted them to have a sense of natural beauty which was important to the love story.

Sometimes DOP looks for a specific set of lenses to shoot the film. Is there specifically any set of lenses that your opted for?

I shot Dhadak with Master Prime lenses. I like the contrast and colour separation they yield. I also like the overall image quality- the crispness of it - that lets me use filters to soften the image to the degree that I want it to be at. In the first half, I used a fair amount of filtration on the lens - colour tone filters etc. - and hardly any in the second. With the Master Primes another advantage is that they open up to T 1.3 and this was important because we had a fair amount of night work - like at the end of the song "dhadak" they are in a boat on the lake with the entire city in the background. I really do like the images these lenses render in low light conditions.

Normally when you shoot day light situation, what is the normal ISO you work in the camera setting?

I usually shoot on the Alexa SXT. I stick to the native 800 ISO and use filters to control exposure. Generally I do not go down to 400 ISO or 200 ISO unless absolutely necessary because I find at 800 ISO one gets the most latitude in exposure.

During the night sequences particularly what was your ISO setting?

While filming night sequences i generally stick to 800 ISO. However in very low light conditions or when I need a bit more of a stop on the lens I often shoot at 1280 ISO. I find the image holds very well. I generally tend to underexpose the night by a stop or so anyway - therefore when I bump it up to 1280 ISO I get a lot more shadow detail.

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Interview with DOP

Manu Anand


ARRI

When you have been engaged for doing a particular film, how do you prepare yourself for the cinematography scheme for the film?

The script dictates everything. The locations your characters are set in, their emotional journeys, the flavour of the ambience, the seasons, that's where you begin. You expand that into the mood of the scene, start coding in terms of colour and lensing and whether they accentuate the feeling of the scene or not. Eventually that constructs the palette of the film. You discuss your ideas with the director, production designer and costume designer so the film has a cohesive look. I wanted to push some amount of magic in the cinematography since the story is a beautiful fable. So wherever possible, I pushed a magical element. Everything comes from the script.

"Zero" begins with a dream sequence where there is a Spaghetti Western look. How did you decide what kind of color scheme it should have?

It's a tribute to the Spaghetti Western genre and it's a dream sequence, hence a warm and sunny feel, but we set the warm skin tones against the grays and blacks of the buildings in the background to bring in colour separation. Art department did an amazing job changing over the set in a short span from today's Meerut to this Spaghetti Western version. I also wanted to shoot that on anamorphic lenses for the special characteristics it brings to the scene and also for its association with the Spaghetti Western genre.

Coming to the hotel corridor song with Anushka Sharma and Shahrukh Khan, there were water fountains and lots of color splashes. How much of it was real and how much was the graphics part?

The director wanted the song to be like a magical fantasy yet still rooted in the real world. I wanted to give the song the feel of the soft, golden hour morning light to heighten the magic of the moment and the magic that's happening between the two characters emotionally.

The actors were going to be

Manu Anand is a cinematographer who is appreciated for his work on the films Shuddh Desi Romance, Dum Laga Ke Haisha and Fan. He won the Filmfare award for best Cinematography for Dum Laga Ke Haisha (2015). His latest project is Zero (2018), which will be his second movie with actor Shah Rukh Khan and his first time working with director Anand L. Rai.

submerged in colour and rain. To create that magic we needed to shoot water and color in super high speed, yet SRK needed to lip sync the song at 48fps. So we shot the showers of colour and water at up to 800fps on the Phantom while SRK was shot separately at 48fps. The same set had to be lit for 800fps as well as 48fps. It was incredibly challenging to switch between the two speeds. My team did a great job lighting that set.

Some of the shots could be shot live; for instance, wide shots of the colour falling from the ceiling, Anushka's axis getting swamped in colour and water; but for SRK we had to shoot clean so VFX could reduce SRK's height and put all the elements together in post. We shot separate passes and reference passes for some shots of the water and colour elements.

SRK lip syncs at 48fps and the water is falling at super slo mo, that water is completely computer generated. When SRK dances with the young girl, again Vfx added all that colour. Then while grading I had blend layers so I could balance how much colour and where I wanted it overlaid.

Since Shah Rukh Khan will appear as a dwarf all the time in the film and it has to be done graphically later on, what were the precautions required to be taken at the time of shoot?

We had done some amount of testing before we started shooting the film. We had worked out how to shoot SRK at different levels on the set. He would always stand about 13 inches below everyone else; the sets were designed to allow that.

We also realised that Vfx was going to need more information of SRK's body. Harry Hingorani (Vfx supervisor) and I did an entire day shooting with our stand in Ashish, who is 4 ft 6 inches and another body double, 5 ft 8 inches, side by side to understand the relationship between the two in terms of framing and how much of them one will see in the frame. Standing, sitting, panning, tilting, and tracking; how the height varies between the two people and what we need to be aware of in terms of distortion.

For instance, if it's a mid shot, when his height is reduced and he is pulled up into the frame, you'd see more of his waist at the bottom, which is not there in the 2:39 aspect.

We were also going to need motion control as we had to shoot the same shot several times, for background/foreground/character plates. Each shot would have 5-6 plates. The challenge was to maintain the lighting continuity, especially outdoors, over all these passes as the process was quite time consuming.

Talking about the last sequence where Shah Rukh and Anushka are inside the space center and have a fight in the air. How did you did you shoot those sequences?

SRK, Anand, Vfx, the production designer and I all had a discussion about this.

The final idea was to make it like a test training laboratory. I wanted a window so I could shoot the scene with some magical flares and silhouettes against the sun. A sort of tribute to the flares we see in space films. We then had to tackle the movement; they needed to look like they were floating, so along with their own movements, achieved by specialist action coordinators, we brought in a triple axis head so we could enhance their movement in zero gravity.

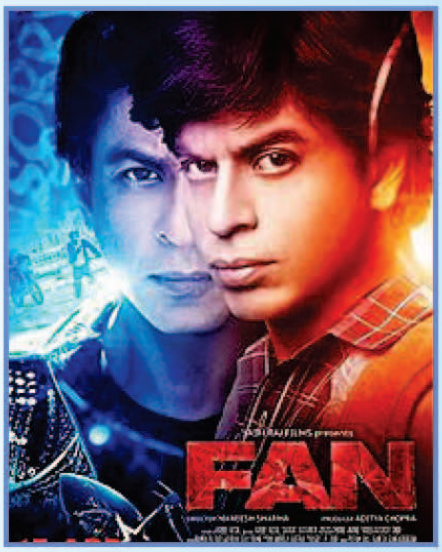
Was it on the Chroma, or was it on a location and then later on post they manipulated slow motion kind of a movement in space?

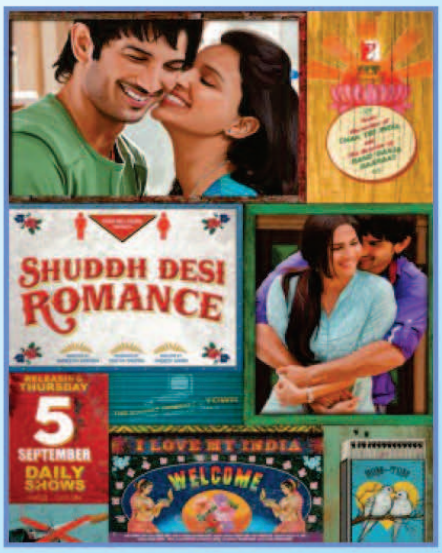
We had a wonderful team come in from Russia, led by Sergey Golovkin to get this sequence. They had specialized rigs that allowed the actor to float through the air, and roll on the Z axis, giving the weightless feeling that the scene required. It was a Chroma Set as well as a bare white set. VFX added the machinery glass and all other details in post

But was it shot normally 24 fps?

Yes it was, because they were dialogue sequences. A few shots I think, were shot at 48 fps.

Important Films of Manu Anand as DOP





How did you go about it in terms of lighting up a large area in the scenes which are shot during the night?

I think the largest area we lit in the film was the chase sequence and post the chase sequence, when Katrina meets SRK on the road. The chase happens on a well lit road on the outskirts of the city and continues into a stretch that has no street lights, an isolated patch. For the chase we had to light up a 500m stretch, for which we set up street lights and moon boxes. Then another 200m for the dialogue scene.

After the chase, in the script, SRK meets with Katrina. When I read the scene I wanted to shoot the scene in the red parking light of the car and the headlight of the scooter and nothing else, yet have enough visibility in the vast emptiness behind them, emphasizing the remoteness of the incident from his life, his milieu, playing against the intimacy of their interaction. I wanted SRK's character to be awash in the red parking light, the colour denoting his passion for her.

We had two moon boxes with 18ks and M90s in each one of them, hung by cranes to light up the background and have some halation in the air lighting up the fog, one at the far end of the road with the streetlights and one in the opposite axis. In the wide two shot behind the actors there were buildings under construction, so we put our own practicals in them for more depth and mood.

Is there anything specific which you would like to tell about the film zero which you think was really tough?

Zero was a wonderful experience and working with SRK again and Anand L Rai was truly inspiring. SRK is so inspirational in his dedication and commitment that one cannot do anything but give one's all, 100% of the time. I would say the toughest part of a project like this is staying motivated because you are shooting for so long, but with his energy SRK makes that easy for the entire team. He inspires everyone to rise to the challenge.

A film with so much Vfx is always challenging. There were a lot of specifications to watch out for and plan ahead. Some of the plates were shot months after the original shots with the actors were taken, on a completely different location and setup. For example the chimpanzee in the auditorium was shot months later in the U.S. In such situations, not just the lighting, but even the camera movement had to match the previous plates perfectly. There was no room for mistakes. The fact that you can't see all that is a stupendous achievement for the entire teams of Vfx and cinematography. I always say good Vfx is invisible Vfx and that's exactly what Red Chillies VFX and Red Chillies Color achieved. Invisible Vfx.

Some sets and locations were huge challenges to light up. The road for the chase sequence and scene. The Holi song corridor lit for up to 800 fps. These two in particular were huge challenges and my team really showed it's mettle throughout the film.

I am only as good as my team. It takes a great team to make a film of this ambition and I think we all succeeded

What is the difference which you feel when people shoot on anamorphic?

Well anamorphic lenses give you immediately, on a subconscious level, a

cinematic feel. It's a larger than life feeling. The world opens up horizontally yet there is still an intimacy with the actors.

Did you use any specific camera or lens for this film zero?

I chose Alexa SXTs with Leica Summilux lenses for Zero. Whenever we had anamorphic shooting we shot with Arri Master Anamorphics.

Do you have a priority for any color grader and talk a bit more about the Grading Process?

I worked with Ken and Tushar on Zero. They are part of Red Chillies Color. Having Vfx and colour grading in the same facility was a huge advantage for the project. Anything we saw on the screen we could immediately give feedback to the Vfx team. Associate colourist Siddharth was also very helpful in this film. The conform department did a commendable job maintaining such complicated timelines with constantly updated Vfx shots, matte checks and QC.

There were the three months of intense grading. Grading with separate mattes for backgrounds and the actor. And being there as the DOP with the Vfx department right next door, we could get mattes as and when required, which helped immensely in balancing the final image.

For example, for the terrace sequence in Zero, I was clear that I didn't want black skies but instead wanted to have midnight, deep blue skies and a bit of cool moonlight. Vfx was able to incorporate how I had created the moonlight on set in the background painting very seamlessly and in the grade we could balance the foreground and the matte painting.

With that amount of detailing, the colourists Ken, Tushar and Siddharth did an amazing job of balancing the final image. We were racing against the clock towards the end with Vfx deliveries picking up speed but we made it somehow after many a sleepless night!

Your work in Dum Laga Ke Haisha was more realistic in nature rather than glamour. How do you plan your lighting for such a film?

So, even if it's a glamorous film or not, I try to light in a way that the light feels 'of the space'. I always tell my assistants that "light dikh rahi hai" which means, "I can see the light and I can see that you are lighting and it doesn't feel that the light is of the space". So the challenge is always to try to light up for

the space and place the actor in that lighting environment and push the limits of how much you can mould the light for the actor's face without making it look unnatural.

That's a fine balance that you have to find.

I always go to the source, whether the source is a window or lamp from where the light is motivated. Regardless of the film I try to follow that as much as possible. In 'Dum Laga Ke Haisha' most of the rooms were only 7 feet high in the boy's house, but the house was so beautiful that when the director asked me "Manu, will you manage here?" I replied, "yes", because we both knew instinctively that the house was the perfect location for the story.

So we had to hide the lights just outside the frame and that can be difficult because we wanted the light to be a natural part of the location and not look 'lit up'. At the same time, we didn't want to go too grungy or gritty. There may be 2 bulbs in the room, but they 'illuminate'. It's not like people live in perpetual darkness. 2 bulbs can be pretty too.

For this reason, a simple thing like choosing the contrast ratio depended on the mood of the scene and was motivated by some source at night and natural sources through the windows and doors of the house in the daytime, this helped evolve the look of the film. The light of Haridwar also allowed us to convey the feeling of Indian winter. Production designer Meenal, the costume designer Darshan and I all worked so well together that the ultimate look of the film is a compliment to everyone's work.

There are some interesting sequences in "Fan". Can you talk a little about that film?

Fan was an interesting film for me as a cinematographer as well. There were so many things I was able to experiment with in that film. Infinity

Mirrors, glass, mixed light, lensing, reflections,image, self image vs public image and image making. All of these ideas we subtly introduced in the film. Maneesh and I had extensive jam sessions thinking about the film and its visual world.

The highlight sequence would be the first time the fan meets the star. In my research for the film I found the idea of Infinity mirrors fascinating as it seemed to visually represent the feedback loop that exists between stars and their fans. Maneesh loved the idea and the production designer helped us incorporate it in the setting of the rundown washroom.

Shooting that was wonderfully tricky. The mixed lighting. The handheld shots. The performances(same actor). But the final scene is something I truly believe is iconic.

How do you reinvent yourself so that you could do something which may not be routine in terms of lighting?

I have tried to have a different look in every film, Shudh Desi Romance, Fan, Dum Laga ke Haisha and now Zero. In each film, the look and the feel comes from the script. At the end of the day, the script is the Bible. It's true that you have to challenge yourself and you can say, "How do I keep myself motivated and how do my team and I grow together to push the boundaries?". In every film, we have extensive discussions and that's how I feel that the visual language evolves as per the script.

In a film like Fan you can be experimental, like using mixed lighting to heighten the two actors' confrontational dynamic. It was a good partnership with production design to achieve that as well.

And the same thing happened in Zero. The visual language comes from the milieu of the characters. From the warmth of Meerut, the color palette changes as we move to Delhi, Bombay and finally America. Frames start opening out and the film starts getting wider and more open. A sense of season is subtly introduced. The difference in the light, both natural and artificial, of India and America is accentuated. Aafia's world is more old school: very colonial and imperial, a world of ballrooms; Katrina's world is very modern and straight lines; her spaces are cold. Subtle, minimal visual language cues are incorporated in the film.

In each film, you are pushing yourself to reinvent at some level, but you can't reinvent the wheel. How to maneuver that wheel differently each time is something I try to do in my work.

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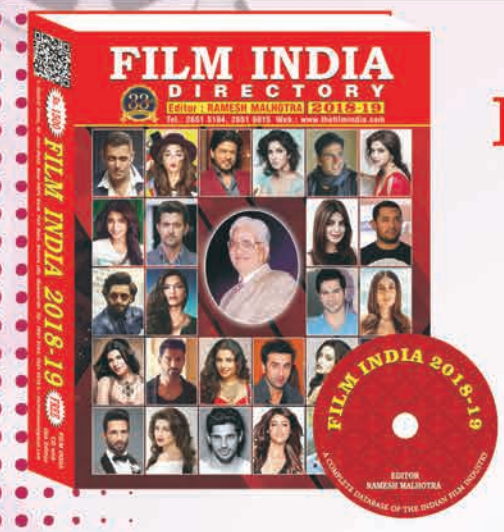

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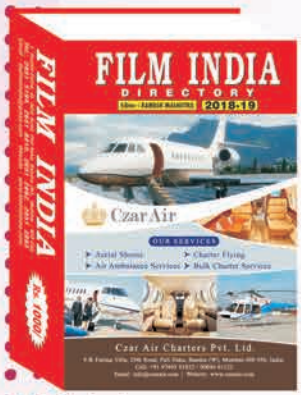

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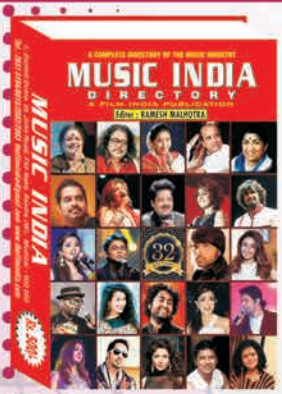

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How do you make something great like ARRI Lighting, even greater?

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dop Choice

There must be something in the water they drink in Munich that brings out the best in cine product designers. How else can you explain the dozens of companies that call the Bavarian tech hub home, yet affect the entire filmmaking world?

One such innovator is cinematographer/entrepreneur Stefan Karle. With practical knowledge working as a DOP, experience as an associate professor at Munich's University of Television and Film, and as a lecturer for ARRI Lighting, he was inspired to find light direction solutions better suited to the new-style LED lights that were gaining popularity. In 2008, he filed his first patent application for the revolutionary self-tightening Snapbag® system followed by the Snapgrid® invention— then founded DoPchoice. Since then, DoPchoice Managing Director Karle has created and built lighting tools with more compact and lightweight designs that are easier to use and faster to set-up—meeting the needs of gaffers, cinematographers and rental houses worldwide.

As the universe of compact, low-weight, low-draw lighting opened up, the need for Karle's handier, lighter weight, easier to use tools like Snapbags re-imaged soft boxes, self-tightening Snapgrids, and quick-setup Butterfly Grids gave LED lighting users a family of light directing aids that snap-up fast and pack into their own pouch.

Then in 2015 ARRI broke open the LED soft panel world with the debut of theS60 SkyPanel. Underscoring the industry's general acceptance of LED lighting, ARRI's home run gave fellow Munch-based DoPchoice a unique opportunity to create a range of light shaping tools to complement ARRI's extraordinary lights.

Snapbag Softbox for ARRI SkyPanel S120

Ready For Arri Skypanel S120

At IBC 2016DoPchoice announced light control accessories for ARRI's just introduced SkyPanel S120 system. "Because the new ARRI SkyPanel S120 outputs so much illumination, controlling that generous output is vital," explained Stefan Karle. "Plus our Snapbag and Snapgrid are lightweight and easy to deploy, then fold up fast for transport and storage."

The new Snapbag softbox snugly surrounds 4-sides of the S120 eliminating light leaks yet offers open breathing room to the back. A reflective surface within delivers a greater degree of soft and even light output. To go softer still, there's also a removable front diffusion panel.

Snapgrid was also especially tailored to direct the output of the S120. This self-unfolding and self-tightening light controlling grid surrounds the front of the Snapbag quickly via a hook & loop strip. For narrowly output, this Snapgrid limits the spread horizontally to 60 degrees, and vertically to 40 degrees.

Snapgrid for ARRI SkyPanel S120 affixes to front of Snapbag

Rabbit-Ears mount works with various SkyPanels for easy interchangeability

New Rabbit-Ears Snap-up Setup

In 2016, the company created a breakthrough attachment system. Available to fit square, rectangular or octagonal Snapbags, versatile Rabbit-Earsmounts the same Snapbag on various Sky Panels or other LED fixtures.

"Why put a round ring on a square box?" explained Karle. The Rabbit-Ears system replaces the weighty and complicated speed ring attachment apparatus that has been the industry standard since the days when round tungsten and HMI fixtures were the only game in town. Made of rugged, lightweight aluminum and stainless steel, the less bulky system weighs ounces, sets up in three minutes, and dismantles fast for transport.

Snapgrid for S360, Double Bracket gangs (2) S60 Skypanels, 7' Octa

Bigger Better in 2017

Early 2017, DoPchoice added a 7-foot (3.45kg/6.5lb) version to its lineup that already included the 3-foot and 5-foot Octa to accommodate most LED soft lights including ARRI's SkyPanel S30 and S60. DopChoice's rule of thumb is, "the larger the Octa, the softer and smoother the light output around the subject." Like the brand's rectangular Snapbags, Octa's erect fast and deliver smooth and even illumination across the front. Light spread can be narrowed by installing DoPchoice's 40° Snapgrid to the Octa's front.

When ARRI unveiled its latest SkyPanel at that year, DoPchoice announced: "To help filmmakers and broadcasters gain the most creative light control, our team was excited to have been called on to custom design and manufacture products for the new SkyPanel S360. Best of all, they are ready for shipment through ARRI, in time for the S360 delivery."

New S360 light tools include custom-sized Snapbags (for light softening),Snapgrids (for light direction), the all-new Snapbox (for diffusion), and the Snoot (for spill-light reduction).Each elegantly mounts on the S360 without additional hardware.

Utilizing DoPchoice's proprietary Snap Technology®,theSnapboxinstantly creates a 5-sided rectangular light box, complete with diffusion and blackout control. At 15-inchesdeepit can encase a single S360, or more fixtures for powerful, diffused light. The addition of the Snoot allows a S360 to be placed above or beside the subject without worrying about spill affecting the camera. The purpose-built,self-unfolding and self-tightening Snapgrid (in beam angles of 30°, 40°, 50° and 30°/50° combo) simply hook-and-loops to the front of the Snapbag, Snapbox, or Snoot. All increase control without adding light stands.

DoPchoice also introduced the Double Bracket to gang two S60-C SkyPanels for twice the output. Made of high tensile strength steel, it clamps to a wall or C-stand to support the pair. With this option, the Octa 5 and Octa 7 Snapbags can house the S60 or smaller SkyPanels.

Snapbag Medium with Rabbit-Ears Mounting system fits many brands

Ultimate Softbox Versatility

In early 2017, DoPchoice unveiled the most versatile Snapbag to date. With increased light reflective benefit and spill-free output, new Snapbag Medium (115cm/45-in x 83cm/33-in x 45cm/18-in) combines with the innovative Rabbit-Ears mounting system, for quick installation directly on ARRI Skypanel S30, S60a and other popular LED lights. So bye-bye complicated speed-ring routine and hello quick set up and tear down—plus users can select a single system for many different fixture brands.

Lantern Snapbags

DoPchoice continues to apply winning snap-up design tech to their new gear. The 3' lantern-shaped Snapbag became so popular that they added the Lantern 5—the largest lantern- or pancake-style softener available. It uniquely lets users easily change the depth of the sphere at will—fully expanding like a traditional lantern or contracted for shallow tight spots and low ceilings.

When hung overhead, the Lanterns create a large soft source to use as a space light. As a soft key, the circular source provides a pleasant round eye reflection. Deployed in a matter of seconds, they work wonders with a variety of ARRI and other lights. For added control, DoPchoice offers a customized, removable Skirt that cuts spillage. Thanks to 4 zip-up sides, users can focus and shape output for more control.

Snapbag Lantern

6x6 and Octa 4 Snapbags

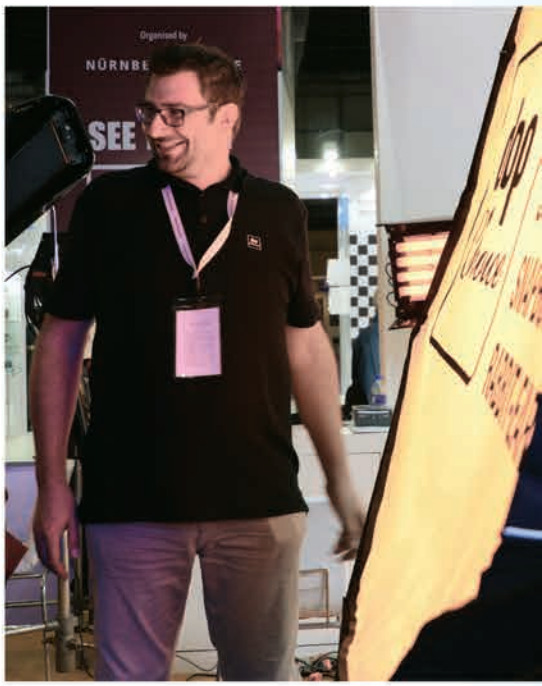
Innovations Keep Coming

Last June DoPchoice unveiled more tools to enhance the ARRI SkyPanel S360 and S30. Mounting directly to the S360, the generous 6-foot by 6-footSnapbag® (6'/183cm x 6'/183cm x 2'5"/75cm) features a light-multiplying reflective interior integral snap-up frame, and packs up small for transport.

The new 4-foot diameter, Octa 4 Snapbag (4'/123cm x 4'/123cm x 2'1"/64cm deep)is a go anywhere companion for the SkyPanel S30. This octagonal shaped Snapbag attaches directly to the front of the S30 thanks to DoPchoice's Rabbit-Ears Mini quick mount. Due to its exclusive fabrics and geometric shape, light output is enhanced, yet soft and pleasing. It may be used with or without the included front diffusion panel.

Both Octa 6 and Octa 4 Snapbags have the option of custom size Snapgrids when more light direction is desired. The self-unfolding and self-tightening light controlling grids (40° beam angle) quickly attach via hook and loop, directly to the front of the Snapbags, saving a grid stand.

Just as ARRI offers an array of tools to complement every lighting need that seems to come up, DoPchoice has consistently produced tool after light shaping tool to make the most of new generation LED fixtures.



Gaffers Control

SPOTS UNLIMITED
GAFFERS CONTROL

Gaffers Control

In the Broadcast India 2018, one get to see the demo of Spots Unlimited , new wireless DMX controller at the Lotus Cine Equipment Stall. The Gaffers Control is can be operated via a 7-inch touch screen. Master setting is made via linear potentiometer with a parameter setting via touch screen or buttons.

With its robust design this DMX controller is a fixed value on set. Through its intuitive programming and uncomplicated method of operating an extensive background knowledge is unnecessary. Once the fixtures have been added, manipulation is very easy. All fixtures, their DMX-addresses and their intensity are easily consulted on one and the same screen. The built-in battery and WDMX-transmitter allow for a complete freedom of movement along the set.

Gaffers Control is an all in one DMX console in StormCase™ casing with a 7" capacitive touch screen of 800 x 480 pixels. Gaffers Control has an integrated CRMX LumenRadio™ transmitter, Lithium-ion 70 W/h battery which can last up to 10- 16 hours during operation. Also included is a DMX library with the ability to programme up to 14 addressable banks/512 DMX addresses

The integrated DMX library can be updated via USB and currently includes: Arri, BB&S, Creamsource, Cineo, DMG, Astera,Quasar science, Carpetlight, Litegear, Kino Flo, Litepanels, Dedolight, Aladdin, Exalux and more.

Important Features:

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- Accurate adjustments through 7 endless turnable knobs
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- Display: 7 "TFT touch screen
- Control: 14 fixtures, master faders, seven fine-tuning encoders
- Outputs: Wireless DMX and DMX Out5-pin
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- Software updates via USB interface
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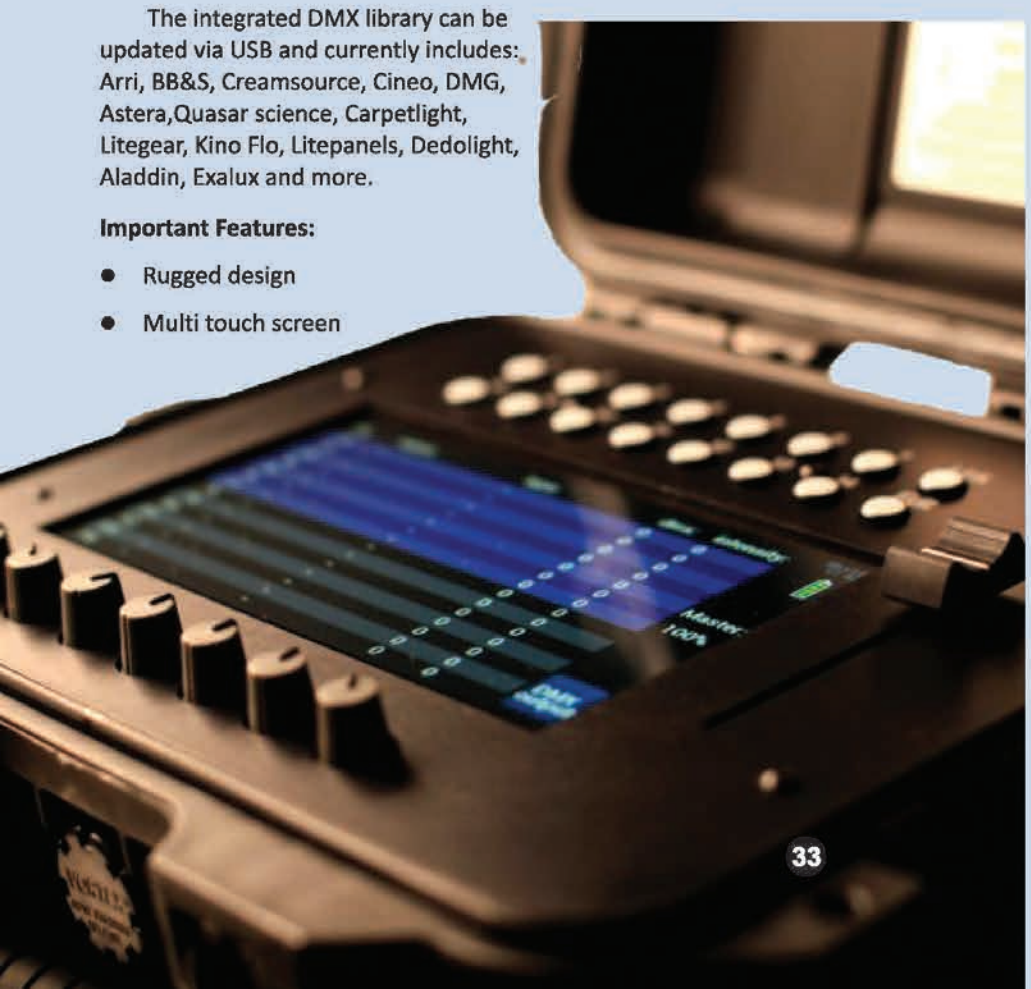

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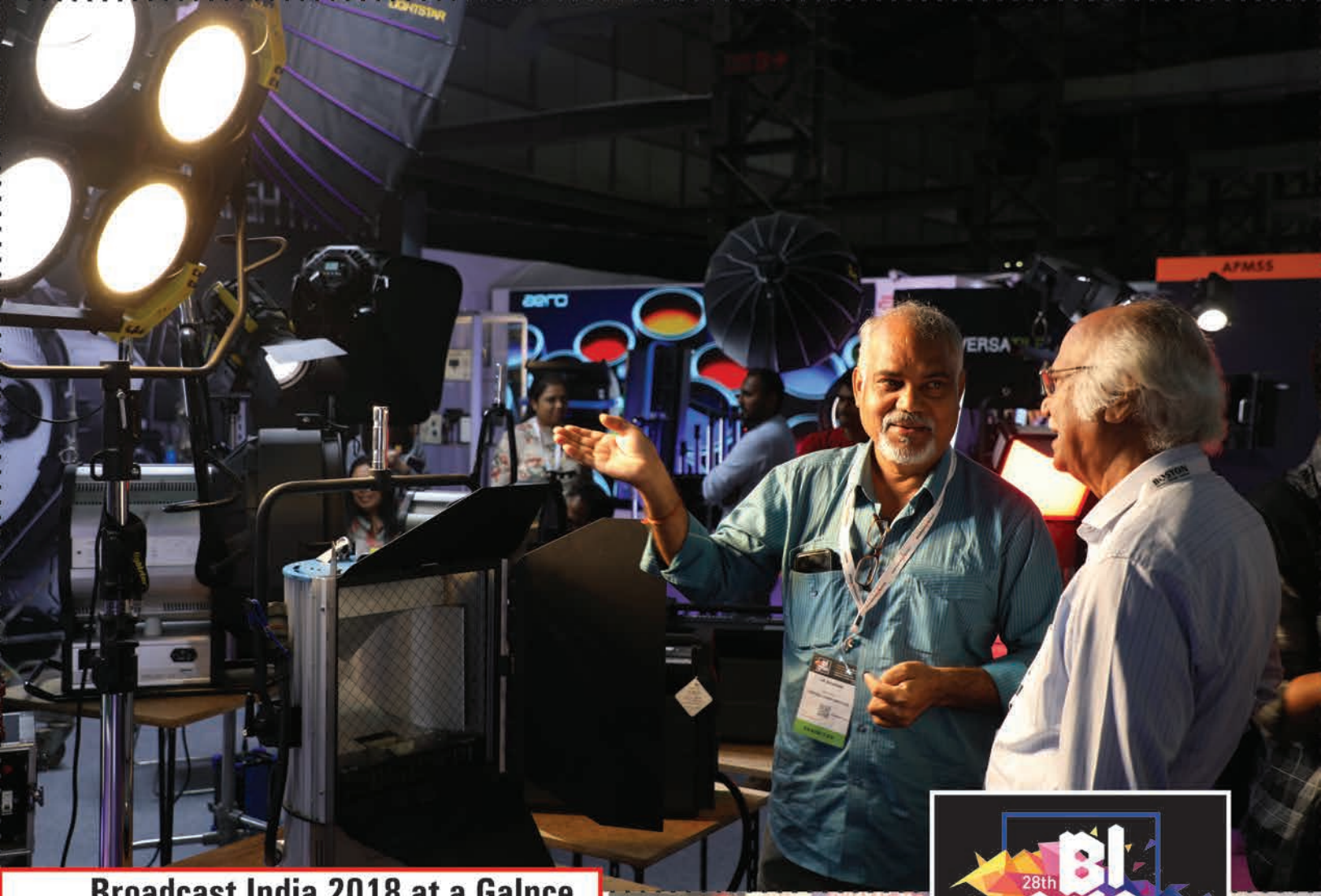

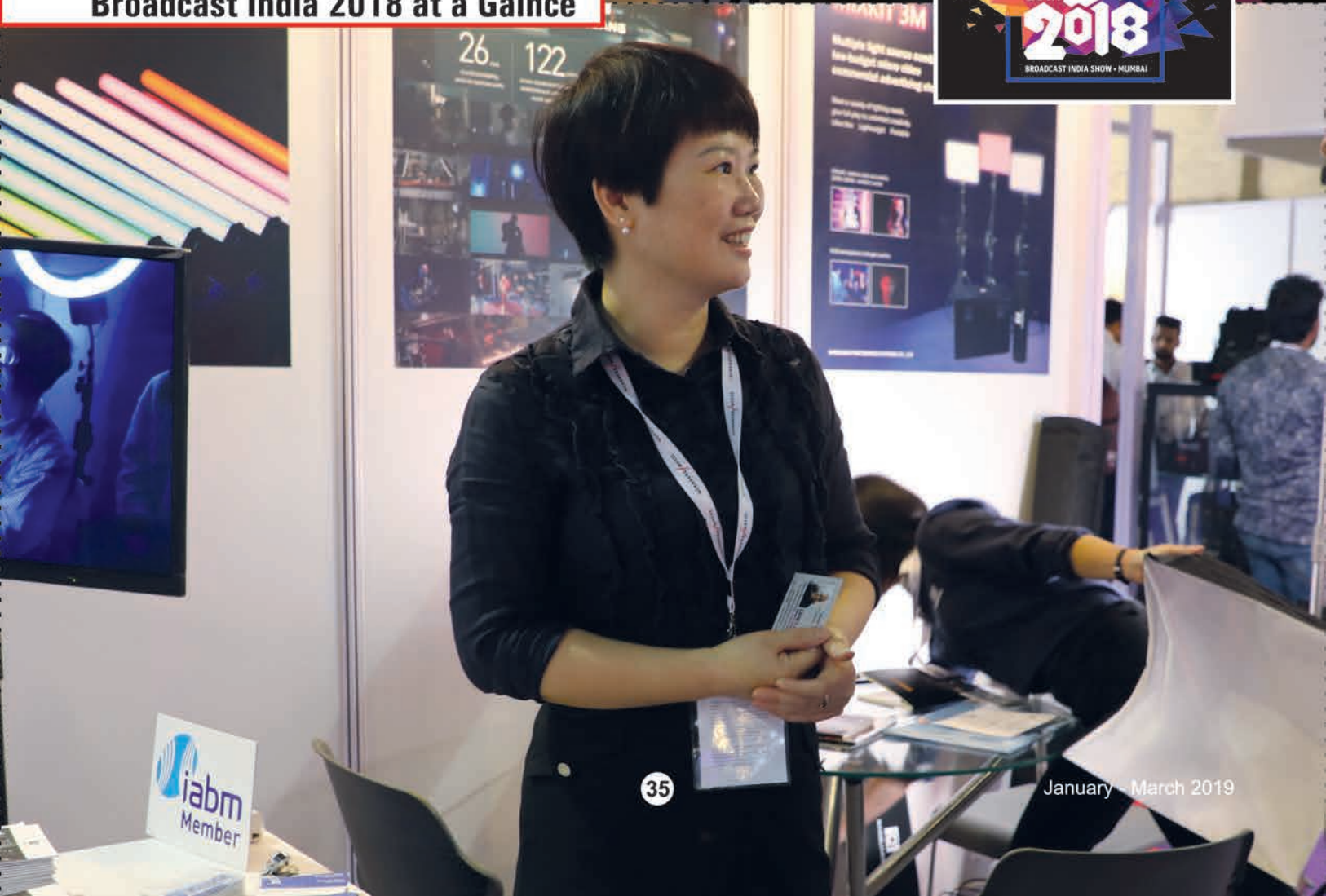

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Aditi Sharma

Random notes of a Cinematographer

Aditi Sharma graduated in Mass Media and Mass Communication from University of Delhi and went on to pursue a specialisation in Cinematography from the FILM AND TELEVISION INSTITUTE OF INDIA (FTII) in 2006. Post that, she assisted some renowned cinematographers including Bobby Singh in various feature films before starting her own independent work. Over the years, she has produced and shot non-fiction content like travel films and documentaries extensively. She has shot television shows like "Sound Trek" for Fox and "Angels of Rock" for Mtv and music videos for Aditya Kripalani and Aditi Paul. She recently ventured into features and commercials as well. She has shot for brands like Anaak, Carrier Midea, Suvijita, Tarun Tahiliani and her commercial for Merck for Mothers went on to pick some international awards as well. Apart from that, her first feature "Tikli and Laxmi Bomb" released on Netflix in 2018. Her short "Her First Time" picked up many awards and released through Large Short Films online. Her second film "Totta Pataka Item Maal" is doing the festival rounds and is slated for a release in 2019.

My earliest memories of a camera are of the Sony handycam that my father had bought to make videos of our family vacations. He was someone who loved gadgets and was often the first one to get his hands on imported VCRs, handy pocket sized television sets, CD based music players and the works! I think I must have borrowed my inclination towards gadgets from him. Because I remember being so curious with the movie camera that I insisted on shooting all our family videos and then playing them back for everyone, at a young age.

This interest grew when I took up Mass Communication as my subject for graduation and ended up being the cinematographer for all the group projects. I followed this up by my specialisation in cinematography from FTII and moved to Bombay a year after. That was the time when there were few female assistants or DPs and most of the people were skeptical of hiring women in camera departments. I remember a fairly established DP turning me down for an assistant's job due to my gender. Also by and large, the perspective at that time was that females were non-serious about this profession or were not physically fit enough to take on this arduous job. This meant we were working extra hard just to prove our worth in the teams. I recall fainting on the set once because I had been handling 16-hour shifts in high fever for many days. However, there were always good bosses like Bobby who created a warm working environment for his team and encouraged us to pursue our passion.

I assisted a few more DPs in various commercials and features before taking a one-year sabbatical. By the time I started independent work, a lot had changed. The industry had almost fully shifted to digital technology, which meant that not only technical processes had changed but independent cinema had found it's distinct voice as well.

It was around this time that I started my first film "Tikli and Laxmi Bomb" (TALB) with director/producer Aditya Kripalani who was venturing out in the independent scene under his home banner Mumba Devi Motion Pictures. I was lucky to have found a solid script as my first film but it wasn't very long before I realised that an independent film is a different beast, considering budget and logistical constraints that one has to overcome. I wasn't used to working in shoestring budgets as I had assisted mostly on films with big banners. My first few weeks were spent in considerable shock over limitations in equipment, location permissions, crew size etc. And I think the real work only began when I came to accept this.

The budget of the film did not permit any fancy gear or an elaborate team. The film was supposed to look raw and real, relying mostly on continuous, one-shot scenes. And yet, the possibility of it releasing theatrically was fairly realistic and had to be the deciding factor for our choice of shooting formats, light designs and how much we wanted to push the medium. From

finding the right camera for the film to creating cheap & battery operated light sources, me and my team spent months researching, testing and evaluating equipment.

The other prominent challenge was the weight of the camera. The F5 isn't exactly light-weight. Especially when it comes to 40 days of handheld work. Most of the days I could be found lying on my back, in between takes, due to the load I carried on my shoulder. However I always feel more involved and I'm able to think better when I'm operating myself, so I soldiered on! This, I feel might become a challenge for women on certain occasions, but isn't something which should deter anyone wanting to pursue a career in cinematography. In 2017, I injured my left leg two days before a film "Her First Time" was due to go on floor. It left me on crutches unable to operate my film, something seemingly unnatural for me. But we were able to find a suitable assistant who could come and operate on the set. The film went to many festivals later and released online through Large Short Films. I feel that we must acknowledge that there will always be some kind of physical limitations irrespective of gender. But as a cinematographer, one cannot let that overshadow the value we bring with our creativity and aesthetic.

Now, I am not completely averse to the idea of an operator anymore as my second film "Totta Pataka Item Maal" was largely operated by my assistant. It was my third outing with Mumba Devi Films after TALB and a commercial (Merck for Mothers) with the same team. Some of the challenges remained the same since constraints under which these films are made remain constant. Pulling focus on DSLRs on handheld operation was becoming a challenge, so it was decided to let my focus puller do the operation on the A unit.

Another big challenge was to make the film look different from the first. Since we were using the same lights and the same methods but telling a different story. I ended up using a set of old Zeiss lenses this time as opposed to the Compact primes. Also, the lighting design was changed to a more half lighting and back lighting look to suit the story, as opposed to the top lighting design in TALB.

Despite the fact that both these films were dotted by many little challenges that the shoot threw up everyday, we were able to make the films as well as we had hoped to. TALB went on to find its place in many national and international festivals before releasing on Netflix. Many reviewers lauded it for it's raw appeal and some even went on to the extent of declaring that it was shot on available light, which is only an assumption!

As I move on to my third independent film, going on floor soon, my biggest challenge remains to be able to create a world that looks different, while working within the same constraints. It is easy to fall into the trap of resorting to the same tricks each time one faces the same kind of challenges. But I feel as long as I stay true to the story, a new set of solutions will emerge.

While as an industry we have come a long way as far as women technicians are concerned, our work still gets seen through gender-tinted glasses as seen in almost all interviews/write-ups for my films. I am hoping that this changes in the days to come and we get to talk about the work that we do, like our male-counterparts.

I also hope in the days to come, newer voices emerge to push the envelope in Indian cinema and we can become diverse yet more inclusive as an industry.

Feedback:
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SONY®

"VENICE" CINE CAMERA - AN OVERVIEW

After a five-year run for the F55 and F65 as its flagship cameras for motion picture and television capture, Sony announced Venice in sep 2017 , a new full-frame cinema camera with a 36mm x 24mm sensor and an integrated eight-step mechanical glass ND system.

Full-Frame sensor for cinema

VENICE features an all-new Full-Frame sensor with the classic 36 x 24-mm dimensions that have been a staple of photography for over 100 years. Designed exclusively for high-end cinematography, this sensor can capture images up to a maximum resolution of 6048 x 4032. Switchable imager modes mean VENICE can support an unprecedented number of cinematic aspect ratios for complete creative freedom:

Full width 36 mm 6K

In full-frame, you can use the full 6048 pixel width of the sensor for 6K imager modes such as 3:2, 2.39:1*, 1.85:1, 17:9, and 16.9*. Equivalent to 4-perforation motion picture film, these 6K modes allow for extra-shallow depth of field, super-wide shooting, and other creative effects.

Super35 anamorphic 4K

For super-wide screen productions, VENICE offers two full-height 2x squeeze anamorphic imager modes that include 6:5 and 4:3 recording modes for 12:5 (known as 2.39:1) and 8:3 (2.66:1) scenes, respectively. Explore how VENICE can meet your production requirements with the firmware and licensing requirements in the aspect ratio chart:

Fast shutter

VENICE's high-speed readout sensor minimizes the jello effect typical in CMOS sensors.

Phenomenal latitude

VENICE has an exceptional 15+ stops of latitude, with low noise for extraordinary performance in delivering phenomenal images in conditions from searing sunlight to almost no light. VENICE's real-world performance also excels at High Dynamic Range imaging and allows unprecedented creative freedom in grading.

More colors for more expression

VENICE can exceed Rec. 2020 color space. This means the color range is wider than DCI-P3 and can beautifully reproduce the true color of the scene in front of your lens. This also provides the broad palette in the grading suite using the established workflow of Sony's third-generation LOG gamma encoding (S-Log3) and ultra-wide color space.

Dual Base ISO

VENICE has a base ISO of 500 to

provide the optimal dynamic range for typical cinematography applications with on-set lighting. A secondary High Base ISO of 2500 excels in low-light High Dynamic Range capture, with an exposure latitude from 6 stops over to 9 stops under 18% Middle Gray, for a total of 15 stops. High Base ISO 2500 is ideal whenever you're using slow lenses or shooting dimly-lit environments. Combining ISO2500 with VENICE's internal eight-step Optical ND filter system offers the ability to emulate different ISOs while maintaining maximum latitude of +6 and -9 stops, enabling you to use VENICE as an ISO1250 camera.

PL lens mount

VENICE comes with the industry-standard PL lens mount. It is compatible with all Super35 and full-frame PL lenses, spherical and anamorphic. The lens mount includes contacts that support Cooke/i Technology. Lens information is recorded as metadata frame by frame.

Lever lock type E-mount*

Choose from the growing eco-system of E-mount lenses and, via third-party adaptors, the world of SLR and rangefinder lenses. Lever lock operation provides added security with large lenses, and in most cases lens support rigs don't need to be removed when changing lens. Switching from PL Mount to E-mount can be done by simply removing six hex screws, while E-mount lens iris operation is controllable via an assignable button.

Anamorphic look

VENICE supports 2x squeeze anamorphic lenses and is able to shoot 4:3 and 6:5 aspect ratios at a horizontal resolution of 4K. This allows the capture of breathtakingly beautiful images with stunning lens flare, bokeh and emotional impact for both 2.4:1 and 2.66:1 widescreen cinema releases.

6K high resolution*

The stunning full 6K resolution of the camera can be recorded directly in X-OCN (16-bit eXtended tonal range Original Camera Negative) file format. Also, XAVC 4K can be captured onto SxS cards while still sampling from the full 6K resolution of the sensor.

Select FPS

The Select FPS function lets you choose frame rates from 1 frame per second to as high as 60 fps, depending on imager mode. Firmware Version 2.0 supports Select FPS for all the available imager modes, while Version 3.0 enables Select FPS for the two additional imager modes noted in the firmware timeline.

Engineered to survive

VENICE's chassis is engineered to be amazingly robust and has been rigorously tested in the harshest conditions. Its ventilation system is completely isolated from all electronic components to prevent ingress of dust, sand and splash. The silent-running fan can be cleaned or even swapped out on set quickly and easily.

Easily configurable

VENICE has a fully modular design and even the sensor block is interchangeable. So, as sensor technology advances in far future, you have the opportunity to upgrade without investing in a new camera. In order to maintain ergonomic balance for operators, the top handle and viewfinder are easily adjustable. As the height of the camera from the bottom to the optical center of the lens mount is the same as the F55, base plates and other accessories used for the F55 can be used with VENICE. The AXS-R7 recorder can be attached to VENICE with just four screws.

World's first 8-step mechanical ND Filters*

VENICE is the world's first camera of its class with a servo-controlled 8-step mechanical ND filter mechanism built into the camera chassis. It offers a massive ND of 0.3 (1/2 = 1 stop) to ND2.4 (1/256 = 8 stops) range that reduces time lost on set changing external filters. The ND filters also greatly increase VENICE's flexibility when being controlled remotely on drones and cranes, or in an underwater housing.

intuitive and familiar on-set operation

VENICE has a surprisingly compact design, which allows easier shooting in confined spaces or on drones. Control buttons are carefully positioned for intuitive operation and even illuminate for easy use on dark sets. There are control displays on both sides of the camera, with the main display positioned on the camera outside for fast access to settings by the camera assistant while shooting. The camera operator's OLED mini display allows intuitive control of commonly-accessed features, and on-set monitoring operation benefits from an extra HD output alongside the standard 12G-SDI (capable of 4K content on a single BNC cable). The control interface is an all-new design based on extensive researches with camera operators.

High-Resolution Magnification

High-resolution content requires highly precise focus. VENICE offers up to 4.0x Dot-by-Dot magnification of the viewfinder image for superb focus accuracy.

Surround View (Look Around)

Camera operators always appreciate a warning when mic booms or other distractions threaten to enter the frame. Using Surround View mode, the viewfinder and on-set monitors can display a 5% margin around the area being recorded.

NOTE: Surround View is available on 3.8K 16:9, 4K 17:9, and 4K 4:3 imager modes on VF, SDI 3/4, and HD Monitor outputs. Maximum supported frame rates are up to 29.97 fps (project) and 48 fps (variable).

High/Low Key

This powerful tool makes it easy to attain perfect exposure settings. Simply press the assigned button to cycle from Normal Exposure to 64 EI (Base ISO 500) to 320 EI (Base ISO 2500) and back to Normal on your VF and Monitor.

User 3D LUTs

Customize VENICE to deliver the precise look you desire. Install up to 16 user-generated LUTs (Look Up Tables) or 33 cube files.

Next generation viewfinder

The DVF-EL200 was created as the perfect partner for VENICE. A 1920 x 1080 OLED panel enables precise, high-resolution focusing and framing, including False Color Display at the touch of a button. A rotary encoder provides instant access to brightness, peaking and contrast. An all-new ergonomic design allows for tool-free attachment/detachment and reconfiguring within seconds. The industry-standard LEMO connector offers exceptional durability.

High performance, proven recording formats

VENICE offers complete production flexibility. Internally, VENICE can support XAVC, ProRes or MPEG HD recording onto an SxS memory card. Additionally, by using the AXS-R7 recorder, it can record 16-bit RAW or X-OCN (16-bit eXtended tonal range Original Camera Negative) onto AXS memory card.

XAVC

XAVC is the highest-performing implementation of H.264/AVC intra-frame coding. It supports 4K with superb efficiency and beautiful 10-bit pictures. Naturally, VENICE supports XAVC Class480, which is the highest bitrate and quality available.

Apple ProRes

Apple ProRes including ProRes 422 proxy formats are popular in postproduction and are supported by VENICE. This means there's no need for transcoding; you can simply handle these formats directly from the camera.

RAW

This ultimate 16-bit linear RAW format preserves all the information captured in 4K, with 16 times more tonal values than 12-bit RAW.

X-OCN: 16-bit eXtended tonal range Original Camera Negative

Full 4K and 6K* resolution, with extraordinary color reproduction, nicely suits Sony's third-generation color development, S-Gamut 3. In particular, 16-bit scene linear tonal gradation retains the camera's full dynamic range, with far greater capacity for visual expression than 10-bit or 12-bit digital formats. 16-bit X-OCN offers significant file size reduction, which makes working with full resolution content from VENICE's 6K sensor far more practical in terms of file transfer times and storage requirements. X-OCN is supported by leading non-linear editing software tools such as Adobe Premiere CC, Apple Final Cut Pro X via Calibrated{Q} Sony RAW Decode plug-in, Avid Media Composer via nablet Sony RAW AMA plug-in, Blackmagic DaVinci Resolve, Colorfront OSD, and FilmLight Baselight, to name a few.

Simultaneous recording for faster workflow

A key benefit of VENICE is simultaneous recording using two recording media. For example, a production could use RAW/X-OCN data recorded by AXS-R7 for online editing and also use XAVC, Apple ProRes or MPEG HD for offline editing without waiting for any file conversion. VENICE can also record XAVC 4K and RAW/X-OCN* simultaneously.

Therefore, another option would be to use XAVC 4K for quick turnaround mainstream production while using simultaneous recording RAW/X-OCN as a future-proof archive suitable for the highest quality HDR applications. Even without using AXS-R7, VENICE itself can record XAVC 4K and Apple ProRes 422 Proxy* simultaneously. VENICE is designed to support both the highest quality imagery and high-speed workflows.

VENICE supports onboard recording of MPEG HD (fixed FPS only) and HD ProRes Proxy* in XAVC 4K and XAVC QFHD onto SxS media.

*Firmware update required.

VENICE with AXS-R7 supports both RAW and X-OCN recording of MPEG HD (fixed FPS only), HD ProRes, XAVC 4K*, and XAVC QFHD* onto SxS media.

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Hollyland, Rising Star For Wirelss Video And Audio System

Hollyland, rising star for Wirelss Video and audio system

Hollyland technology is a leading manufacturer who focuses on wireless video, audio transmission solutions. Having been doing OEM and ODM for many famous brand almost since the very beginning that wireless video transmitter came to the market, Hollyland brand got a lot of eye balls and market share in the past year, becoming the 1 in Chinese market and well known though BIS show and top rentals in India like Flamingo Film India, Kshitij Entertainment, RD Equipment, Accord Equipment, Taher Cine.

With Over 30 R&D members,30 sales person, 15 patents, Hollyland is devoted to win in any market. India, as one of the most promising markets for any brand, is top priority for Hollyland. Last month, Hollyland India sales rep

Martin and Asia Pacific Sales Manager Andy visited India and then decided to attend CEIF immediately.

They want to show their latest new products Hollyland Mars300 to India customers, who always searching for products with good quality and great price. Mars300 is the ideal one and will likely become the first wireless video transmitter for many videographers, who can't afford any existing usable wireless video transmitter with the price over 1000 USD at least. It's said that this Mars300 would first demo during CEIF show 2019 and will officially release in March. The price will be less than 500 USD for sure. For March, they will have limited first batch and accept pre-order registering during the show. Moreover, they will offer discount for those early birds.

Mars300 has around 200ms delay and a little compression, but Who will care about that with price less than 500?

For different customer, Hollyland offer corresponding product to meet their needs. I would say Mars300 is more like prosumer product that works great for living streaming, wedding videographer and more. But Cosmo2000 is definitely the one that must to have for rental house and should use for DOP. All big rentals in China have Cosmo2000. After Chinese cameraman or Dop ask for Cosmo2000, making perfect sense for rentals to invest.

Also, Hollyland offer products like syscom1000TE for broadcaster. Syscom1000TE is 1000 ft wireless intercom system and would be great to have for TV stations.

Hollyland is very strong in China and will rising to the top in India for sure. After all they will have own chipset for wireless video transmission and They also plan to set up after-service center in India.

Feel free to contact Hollyland or their reseller if you are interest to know more about Hollyland products.

Hollyland email: sales@hollyland-tech.com

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cPRO LCS by cmotion

cPRO LCS by cmotion

cPRO is cmotion`s most advanced lens control system offering wireless focus, iris and zoom control like never before.

Ready to use kits consist of an ergonomic and intuitive cPRO hand unit paired with either a cPRO motor or cPRO camin, all equipped with the latest cmotion RF module. The LBUS interface not only allows the system to be expanded by simply connecting cforce mini / cforce plus motors for up to 3 axis control, but also accessories such as cmotion's cfinder III to enable fast pinpoint autofocus.

After an in-depth and enthusiastic presentation to the Technical Award Jury in Hollywood at the beginning of June, cPRO received this years` Cine Gear Award.

The cPRO hand unit is a feature packed work horse offering ultimate control in a balanced and ergonomic design. Introducing innovative features inspired by the focus puller community, cPRO supports the needs of the most demanding focus puller.

Not only have cmotion re-designed the focus knob with a non-slip concave fingertip moulding, the mechanical hard stops and unique "PANIC" button allows the focus puller to overrule mechanical hard stops on the fly. So, whether shooting slate or following a subject that misses their mark, with cPRO, limits don't need to be limiting!

The intuitive thumb wheel positioned beneath the touch display provides quick and easy access to the cPRO's extensive menu settings even while wearing gloves. In addition, the thumb wheel can be assigned as a fully functional 4th axis controller.

The illuminated marker ring, marker strip, user buttons and a zoom position LED display ensures cPRO provides clear information and feedback in any shooting environment. Whether using existing accessories including the cstrap or cspider, or specially developed accessories such as the perfectly balanced monitor bracket and quick release v-lock mount, the cPRO hand unit creates a new era in focus pulling.

Mechanically, the cPRO motor is based on the popular cforce mini. However, this motor benefits from a built-in cmotion Red RF module and an optimized motor and gearbox for increased speed and reaction.

Incorporating the wireless module into the motor eliminates the need for

an extra unit being mounted on the camera. This combination reduces weight, cables and setup time of a ready to shoot system.

Using the LBUS interface, the cPRO motor set can be expanded with up to 2 additional cforce motors while the new CAM connector provides a versatile interface for power supply, run/stop control *camera feedback, *tally and **camera control for popular cameras including ARRI, RED, SONY, CANON, BLACKMAGIC and PANAVISION.

*Not available on all cameras **Available for select ARRI cameras from Dec 2018 – Optional license required

As an alternative to the cPRO motor set, and for customers with existing cforce motors, cmotion offer a cPRO camin set.

This kit includes the smallest wireless motor box ever developed by cmotion. Using the LBUS interface, up to 3 cforce motors (mini or plus) can be connected to the camin to create a full 3 axis system for use with the cPRO hand unit. And, the new CAM connector provides a versatile interface for power supply, run/stop control, *camera feedback, *tally and **camera control for popular cameras including ARRI, RED, SONY, CANON, BLACKMAGIC and PANAVISION.

Through RED's open protocol, the cPRO camin kit (with optional cable) can even control the internal focus and iris scales on EF lenses for an ultra-lightweight configuration (e.g. for drone and gimbal applications).

*Not available on all cameras**Available for select ARRI cameras from Dec 2018 – Optional license required.

https://cmotion.eu/page/cpro

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New Storage Technology

G-Technology is a brand of external storage products designed and marketed for the Macintosh, creative pro, photography and A/V markets. Its USB, FireWire, eSATA, SAS, SCSI Thunderbolt, and Fibre Channel systems support all levels of audio/video production. It is owned by HGST, a subsidiary of Western Digital

History

In 2004, Medea Corporation, a manufacturer of storage systems optimized for digital content creation, was sold to Avid Technology. Medea co-founder Roger Mabon purchased the rights to one of Medea's products from Avid – a two-drive RAID 0 storage system for creative professionals – and opened up his own startup company just blocks from his house in Santa Monica.

The company sold products to a local community of audio/video creative professionals until the company made an agreement in 2006 with Apple that greatly increased placement of their products in Apple stores in the United States, and raised their revenue in a month in 2004 to millions.

In January 2008, Fabrik Inc. bought G-Technology for an undisclosed amount.That month, the company introduced the world's first 500 GB 2.5" portable storage drive and the first 1 TB portable external storage drive at Macworld Expo.G-Technology announced the first family of external solid-state drives (SSD) at Macworld Expo 09.

Hitachi Global Storage Technologies (HGST) bought Fabrik and its G-

Technology brand in 2009.HGST in turn was bought by Western Digital in 2012. G-Technology is currently a line of products sold by Western Digital.

Products:

G-Technology sells their external storage devices for professionals under the product lines G-SPEED, G-RAID, G-SAFE, and G-DRIVE.

G-RAID is a line of portable external hard drive products used for field editing and backup for video producers and camera operators. The line supports RAID 0 (striped volume) and are encased in aircraft-grade aluminum for ruggedness.

G-RAID drives support multi-stream DV, HDV, DVCPro HD, XDCAM HD, ProRes 422 and uncompressed SD workflows and can be connected via FireWire 400, FireWire 800 and USB 2.0 ports.

The line also includes the G-RAID mini, a smaller version with no power cord, that's powered by a FireWire plug into a computer or laptop. This smaller G-RAID mini comes in capacities up to 1TB in a RAID 0 or RAID 1 (mirroring).

G-SPEED is designed for professional content creation applications used to edit and produce digital video and film productions.

The G-SPEED line includes desktop and server rack-mount products ranging up to 16TBs using 16 hot-swappable drives. The G-SPEED line has high-end performance specifications geared toward content producers, Fibre Channel products, 4GBit connectivity, and more.

It also includes the G-SPEED eS, which is a small desktop enclosure with four drives.

G-SAFE is optimized for professional digital photographers. It comes with RAID 1 functionality to protect digital photography.

G-SAFE products support both FireWire 800 and USB 2.0 connections.

G-DRIVE consists of single-drive external storage units that work with both Mac and Windows PCs to offer up to 3 TB capacities. G-DRIVE features

support for FireWire 800, FireWire 400 and USB 2.0 connections.As per 2018 Update, Also Thunderbolt 3 and USB 3.0 connections.

The series also includes the G-DRIVE mini, a smaller version, and the G-DRIVE Q, which has more support options for FireWire 400, FireWire 800, USB 2.0 and eSATA ports in a single unit.

External Video Editing Hard Drives

G-SPEED eS RAID solutions provide professional content creators with outstanding performance, high storage capacity and fail-safe operation at an unprecedented low cost per gigabyte. The compact and whisper quiet G-SPEED eS sports a 3Gbit eSATA interface and features four hot-swappable Hitachi 7200 RPM 3Gbit SATA hard drives.

When used with the G-Tech RAID controller, a single G-SPEED eS in performance mode (RAID 0) easily supports uncompressed 8-bit,1080/60iHD video capture and playback. Two G-SPEED eS units in fail-safe mode (RAID 5) support 10-bit, 1080i and more! As many as four G-SPEED eS enclosures can be attached to a single workstation to support up to 32TB of storage with speeds in excess of 600MB/second! Storage for multi-stream uncompressed SD and HD production has never been easier or more affordable!

When used with the G-Tech PCIe x4 RAID controller, G-SPEED eS can easily be configured as a RAID 0, 1, 5, 10 or as a JBOD.

This flexibility enables the system to be tuned to the required level of performance and fault-tolerance necessary to support your application. G-SPEED eS can also be set up as a software RAID or JBOD when used with third party port multiplier aware eSATA host adapters.

Easy to Setup

G-SPEED eS has a built-in Web GUI that is accessed via any local internet browser. This simple GUI is used to configure and monitor the RAID system. Many aspects of the system are monitored, including power supply voltage, fan RPM and the temperature of the RAID controller & hard drives. In the event of a problem, G-SPEED eS can send an email message to up to four recipients.

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dji FORCE PRO

DJI Force Pro

Lets have a look at one of the DJI's newest inventions, a high-end gimbal control system. It is small, it is beautiful, it is packed with advanced technology.

What is DJI Force Pro

The DJI Force Pro is a little gimbal control system that synchronizes the movements of its operator with the movements of the gimbal. Force Pro enables operators to take masterful shots a lot more intuitively than ever. Force Pro breaks down the barriers which come with understanding the operation of more complicated gimbal control systems. It allows users to remotely pan/tilt and operate their Inspire 2, Ronin 2 and Ronin-S gimbals.

Who should use it

Force Pro is designed for professional videographers who use commercial drones for their everyday job. Also, for users who want to step up their drone services business with the super high-end quality footage. As the prices of Force Pro and connecting gimbals are quite high, we wouldn't recommend these DJI accessories for personal use.

Drone operator Features

The Force Pro has a built-in compass and Inertial Measurement Unit that is designed to avoid gimbal drift in order to help the camera remain focused on the wanted frame. The device works with DJI Ronin 2 and Ronin-S gimbals and other third-party solutions. For maximum adaptability, DJI Force Pro features a lightweight handle. It can easily be connected to a number of accessories, such as monitors, video transmission devices, thumb controllers, and many more. And all that at the same time. It can additionally be placed on a tripod with the integrated adaptor. Just like with the Ronin 2, owners are able to change gimbal and camera configurations via DJI Force Pro's built-in display and keys. You are able to even modify each axis' speed by using adjustment dials.

Buttons

4 shortcut buttons are placed around the OLED display to toggle gimbal modes (top left button), SmoothTrack modes (top right), toggle setting pages (lower right button) and go back to the upper level of the menu (lower left button).

The button with the red dot triggers the camera Start/Stop remotely when a compatible camera is connected to the system (currently DJI support RED, ARRI ALEXA Mini, Sony FS5/FS7, etc.). Pressing and then holding the same button turn on/off the Force Pro.

DJI integrated three dedicated speed controlling knobs corresponding to Pan, Tilt, and Roll axis, to enable the quickest possible adjustment of the controlling speed.

Knobs for the pan and tilt are on the top of the Force Pro, and the knob for roll axis is on the left side.

2 customizable buttons (C1 and C2) are designed for owners to quickly access favorite features, for example Motor Pause.

On the right side, there is a Lock slider which prevents accidental input when slid to the upper stop.

Connectivity

DJI Force Pro comes with a dual frequency 2.4 and 5.8 GHz wireless transmission system. It is able to give you a control distance of up to 3 kilometers (2 miles).

Additionally DJI Force Pro supports a wired connectivity, that may totally alleviate interference with other equipment on a film set.

When using the wireless method, the Force Pro communicates with the gimbal at 100Hz. When the wired method is used, the communication frequency is doubled to 200Hz for lower latency and better interference resistance.

Communication latency as small as ten milliseconds simply means the camera moves in sync with DJI Force Pro in near real time. A built-in compass and high precision IMU operate in tandem to guarantee movement is sleek and also stop the gimbal from drifting while moving.

The DJI Force works best when it is mounted on something like a fluid head tripod. This way it is easy to replicate pan and tilt motions that are a lot smoother than if you try to do it by just holding the force in your hands.

Battery and Charging

Force Pro has a built-in 4750 mA battery which will offer up to 5 hours of working time. This is absolutely great battery capacity and it should be enough to last entire video shoot you may have planned for the day. Owners can charge Force Pro via its USB-C port or CAN BUS port

Flexible Installation

For maximum adaptability, DJI Force Pro comes with a lightweight handle and can be simultaneously connected to multiple accessories, including monitors, video transmission systems, thumb controllers, and more. It can also be mounted on a tripod with the included adaptor.

FORCE PRO: FAQ

What is the maximum wired control range of DJI Force Pro?

30 meters.

What are the battery life and charging time of Force Pro?

5 hours of battery life and 2.5 hours of charging time.

What should I do when a gimbal fails to respond to Force Pro's subtle movements?

Decrease Dead Band in the Basic section of the menu.

How do I set functions for the C1 and C2 buttons?

Enter Settings by pressing the lower left button on DJI Force Pro, select Custom, and set functions for C1 and C2.

How do I calibrate the compass?

You can calibrate the compass by choosing Compass Calibration in the More section of the menu.

How do I switch Force Pro's system language?

You can switch between Chinese and English in the More section of the menu.

How do I pause Force Pro?

If you set the C1 button with the

pause function, press and hold it to pause Force Pro and release it to restore control. You can also press and hold the Sleep button for three seconds and Force Pro will enter Sleep mode and will be unable to control a gimbal. To exit Sleep mode, press and hold the button for three seconds.

How do I view the current speed of each axis?

Adjust the two nobs at the top of Force Pro to adjust pan axis and tilt axis speed, and adjust the nobs on the left side to adjust roll axis speed.

How do I charge Force Pro?

There are two ways to charge Force Pro. For a quick charge, use the Type-C port to connect Force Pro to a charging source at a current of 2 A. You can also connect through the DC IN port at the bottom of Force Pro.

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Parrot Turns Any Mobile Phone Into A Teleprompter

Parrot Turns any Mobile Phone into a Teleprompter

Padcaster's elegant Parrot teleprompter turns a standard smartphone into a fully functional, compact and affordable prompting system for nearly any DSLR, video camera, smartphone or iPad. Parrot allows the talent to speak naturally while looking into the lens and interacting directly with the audience.

With the rise of mobile production, more shoots than ever before are produced by minimal crews or even one person alone. Conventional prompting systems are often out of the question due to size, weight and cost.

Padcaster's solution provides interviewers and talent alike with an easy-to-read script in a simple, lightweight, affordable package that uses any smartphone. Versatile Parrot mounts to most DSLR and video

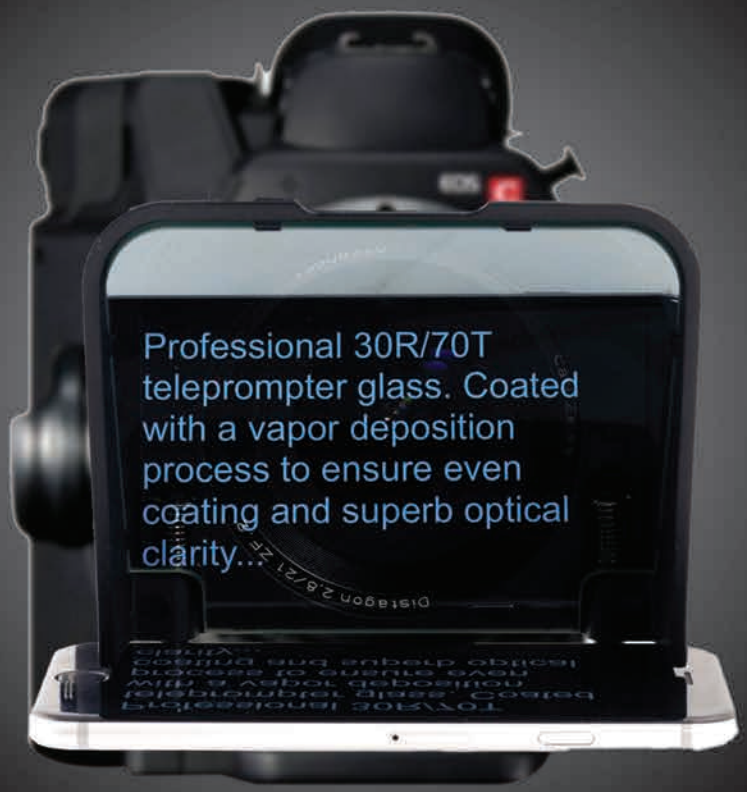
cameras, as well as the Padcaster system for iPads and Verse for mobile phones.

Parrot mounts on the lens barrel of the shooting camera in a matter of seconds. This positions a half-silvered mirror at a 45-degree angle so the camera shoots through it, while a mobile phone with a free app for the script is mounted below. The talent looks into the lens to read the script text reflected in the mirror.

Included with the Parrot kit is a range of popular size lens adapters (49mm-82mm) that thread onto the camera's lens barrel. The teleprompter assembly, complete with mirror, slides over the selected adapter to lock it in front of the lens. A spring-loaded phone clasp swiftly secures virtually any model smartphone below the mirror.

Parrot's wireless remote controls scrolling speed, pause, and fast forward/reverse throughout the text. The Parrot app, (available free at the Apple App Store or Google Play Store) provides for adjusting text size and width.

The Parrot Teleprompter is made of rugged components to withstand even the most challenging environment. Its high-end mirror is easy to read text from, while ensuring that the video remains crystal clear. The unit measures 114.3mm x 101.6mm x 82.55mm (4.5 x 4 x 3.25 inches), and weighs just 170 grams (6 ounces) with most smartphones. The Parrot MSRP is $139 including a one-year manufacturer's warranty.



For more information visit:
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❑❑❑

Nikon®
D-850

The search for uncompromising performance in the worlds of photography and videography is over. The Nikon D850 sets remarkable standards of quality . Here are the imp Feature at glance for Audio Video shoot

Frame Rates & Advance Modes

CH mode: 7 FPS at full resolution. (up to 9 FPS at full resolution with optional MB-D18 battery grip and EN-EL18a/b battery.)

CL mode settable as low as 1 FPS.

Quiet (Q) and Quiet Continuous (QC) mode at 3 FPS.

Silent Live View electronic shutter: up to 6 fps with locked focus and exposure at full resolution; up to 30 FPS in 8MP DX mode.

Buffer (Burst) Sizes

- 51 frames of 14-bit lossless RAW
- or
- 170 frames of 12-bit lossless RAW.

Image Sensor

- 45.44 MP.
- 23.9 × 35.9 mm Back-Side Illuminated CMOS.
- Ultrasonic cleaner.
- No anti-alias (optical low-pass) filter.

Image Sizes (JPG, TIFF & RAW)

- 8,256 × 5,504 pixels native Large (45.44 MP).
- 6,192 × 4,128 Medium (25.5 MP).
- 4,128 × 2,752 Small (11.3 MP).

Cropped Image Sizes

- 20 × 30mm (1.2x crop)
- 6,880 × 4,584 Large (31.5 MP).
- 5,152 × 3,432 Medium (17.6 MP).
- 3,440 × 2,288 Small (7.8 MP).

4:5 crop (24 × 30mm)

- 6,880 × 5,504 Large (37.8 MP).
- 5,152 × 4,120 Medium (21.2 MP).
- 3,440 × 2,752 Small (9.4 MP).

Square crop (24 × 24mm 1:1)

- 5,504 × 5,504 Large (30.2 MP).
- 4,128 × 4,128 Medium (17.0 MP).
- 2,752 × 2,752 Small (7.5 MP).

DX crop (16 × 24mm)

- 5,408 × 3,600 Large (19.4 MP).
- 4,048 × 2,696 Medium (10.9 MP).
- 2,704 × 1,800 Small (4.8 MP).

16:9 crop (shot during FX movie recording)

- 8,256 × 4,640 Large (38.3 MP).
- 6,192 × 3,480 Medium (21.5 MP).
- 4,128 × 2,320 Small (9.5 MP).

16:9 crop (shot during DX movie recording)

- 5,408 × 3,040 Small (16.4 MP).
- 4,048 × 2,272 Medium (9.1 MP).
- 2,704 × 1,520 Small (4.1 MP).
- **ISO**
- ISO 64 – 25,600; ISO 64 is optimum.
- As low as ISO 32 and as high as ISO 102,400 in push and pull modes.

Still Formats

- sRGB and Adobe RGB color spaces.

NEF Raw

- 12 or 14 bit.
- Uncompressed, losslessly compressed or compressed
- Large, medium or small image sizes. Medium and small images are fixed at 12 bits, lossless compression.
- Also can record JPG along with NEF.

JPEG

- FINE, NORMAL or BASIC compression levels.
- LARGE, MEDIUM or SMALL image sizes.
- Two settings; constant size or constant quality.
- Also can record NEF along with JPG.

RGB TIFF

Video

- Maximum take length
- 29:59 (a half hour) maximum take length.
- The D850 may split long takes into as many as 8 different 4GB files if there's that much data.
- **Frame Sizes and Rates**
- 8K Time Lapse
- See Intervalometer.

3,840 × 2,160 (4K UHD)

- 29.97p, 25p or 23.976p.

1,920 × 1,080

- 59.94p, 50p, 29.97p, 25p or 23.976p
- 4× slow-motion (overcrank) shot at 119.88 or 100 FPS and then stored as 29.97p or 25p.
- 5× slow-motion (overcrank) shot at 95.904 FPS and then stored as 23.976p.

1,280 × 720

- 59.94p or 50p.

Data Encoding Formats

- H.264/MPEG-4 video and PCM or AAC audio.
- Selectable quality levels at the regular 1,080p and 720p rates.
- Only high quality at 4K and only normal quality in slow-mo/overcrank.

File Storage Formats

- .MOV and .Mp4

Audio

- Linear PCM or AAC format recorded only along with video.
- Stereo microphones built in.
- 3.5mm Mic-in jack with plug-in power overrides built-in mic.
- 3.5mm Headphone jack.

Autofocus

- Same system as the D5 and D500:
- Works down to LV -4, which is full moonlight on sand.
- 55 selectable points.
- Of these selectable 55 points, 35 are cross-type and 9 work with lens combinations as slow as f/8.
- 153 total AF points are hidden under the hood, but you can't select all these manually; you only can select 55 of them.
- 99 of these 153 hidden sensors are cross-type.
- 15 of these 153 hidden sensors work with f/8 lens combinations.
- Face-Priority AF; should automatically find faces and focus on them.
- Multi-CAM 20K AF sensor module.

FUJIFILM
X-H1, At A Glance

Number of effective pixels

- 24.3 millions pixels

Image sensor

- 23.5mm x 15.6mm(APS-C)X-Trans CMOS III with primary color filter.
- Sensor Cleaning system
- Ultra Sonic Vibration

Storage media

- SD Card (-2G) / SDHC Card (-32G) / SDXC Card (-512G) UHS-I / UHS-II*1

File format

Still image

- JPEG (Exif Ver.2.3)*2, RAW : 14bit RAW(RAF original format), RAW+JPEG

Movie

- MOV (MPEG-4 AVC / H.264, Audio: Linear PCM / Stereo sound 24bit / 48KHz sampling)

Number of recorded pixels

- L: (3:2) 6000 x 4000 / (16:9) 6000 x 3376 / (1:1) 4000 x 4000
- M: (3:2) 4240 x 2832 / (16:9) 4240 x 2384 / (1:1) 2832 x 2832
- S: (3:2) 3008 x 2000 / (16:9) 3008 x 1688 / (1:1) 2000 x 2000

Lens mount

- FUJIFILM X mount

Sensitivity

- Standard Output Sensitivity : AUTO1 / AUTO2 / AUTO3(up to ISO12800) / ISO200 to 12800(1/3 step)
- Extended output sensitivity : ISO100 / 125 / 160 /25600 / 51200

Exposure control

- TTL 256-zone metering, Multi / Spot / Average / Center Weighted

Exposure mode

- P (Program AE) / A (Aperture Priority AE) / S (Shutter Speed Priority AE) / M (Manual Exposure)

Exposure compensation

- -5.0EV - +5.0EV, 1/3EV step
- (Movie : -2.0EV - +2.0EV)

Image Stabilizer

Mechanism

- Image sensor shift mechanism with 5-axis compensation

Compensation Effect

- 5.5 stops (based on CIPA standard. Pitch/yaw shake only. With XF35mmF1.4 R lens mounted.

Shutter type

- Focal Plane Shutter

Shutter speed

Mechanical Shutter

- P mode: 4sec. to 1/8000sec. A mode: 30sec. to 1/8000sec.
- S/M mode: 15min. to 1/8000sec. Bulb mode: up to 60min.

Electronic Shutter*3

- P mode: 4sec. to 1/32000sec. A mode: 30sec. to 1/32000sec.
- S/M mode: 15min. to 1/32000sec. Bulb mode: 1sec. Fixed

Electronic front curtain shutter

- P mode: 4sec. to 1/8000sec. A mode: 30sec. to 1/8000sec.
- S/M mode: 15min. to 1/8000sec. Bulb mode: up to 60min.

Mechanical + Electronic shutter

- P mode: 4sec. to 1/32000sec. A mode: 30sec. to 1/32000sec.
- S/M mode: 15min. to 1/32000sec. Bulb mode: up to 60min.

E-front + Mechanical shutter

- P mode: 4sec. to 1/8000sec. A mode: 30sec. to 1/8000sec.
- S/M mode: 15min. to 1/8000sec. Bulb mode: up to 60min.
- *Electronic front curtain shutter works until 1/2000sec.

E-front + Mechanical + Electronic shutter

- P mode: 4sec. to 1/32000sec. A mode: 30sec. to 1/32000sec.

❖ S/M mode: 15min. to 1/32000sec. Bulb mode: up to 60min.

❖ *Electronic front curtain shutter works until 1/2000sec.

Synchronized shutter speed for flash

❖ 1/250sec. or slower

Continuous shooting

❖ Approx. 14fps [Only electronic shutter]

❖ (JPEG: 40 frames Lossless compression RAW: 27 frames Uncompressed RAW: 23 frames)

❖ Approx. 11fps [with VPB-XH1]

❖ (JPEG: 70 frames Lossless compression RAW: 28 frames Uncompressed RAW: 24frames)

❖ Approx. 8fps (JPEG: 80 frames Lossless compression RAW: 31 frames Uncompressed RAW: 26 frames)

❖ Approx. 6fps [Only electronic front curtain shutter]

❖ (JPEG: endless Lossless compression RAW: 35 frames Uncompressed RAW: 28 frames)

❖ Approx. 5fps (JPEG: endless Lossless Compression RAW: 37 frames Uncompressed RAW: 29 frames)

❖ * Recordable frames depends on recording media

❖ * Speed of continuous shooting depends on shooting environment and shooting frames

Focus

mode

❖ Single AF / Continuous AF / MF

type

❖ Intelligent Hybrid AF (TTL contrast AF / TTL phase detection AF)

AF frame selection

❖ Single point AF: EVF / LCD: 13 x 7 / 25 x 13 (Changeable size of AF frame among 6 types)

❖ Zone AF: 3 x 3 / 5 x 5 / 7 x 7 from 91 areas on 13 x 7 grid

❖ Wide/Tracking AF: (up to 18 area)

❖ * AF-S : Wide

❖ * AF-C : Tracking All

White balance

❖ Automatic Scene recognition / Custom1-3 / Color temperature selection (2500K-10000K) / Preset: Fine, Shade, Fluorescent light (Daylight), Fluorescent light (Warm White), Fluorescent light (Cool White), Incandescent light, Underwater

Self-timer

❖ 10sec. / 2sec.

LCD monitor

❖ 3.0 inch, aspect ratio 3:2, approx. 1.04 millions dots touch screen color LCD monitor(approx. 100% coverage)

Movie recording

❖ [4K (4096 x 2160)] 24p / 23.98p 200Mbps / 100Mbps / 50Mbps up to approx. 15min.

❖ [4K (3840 x 2160)] 29.97p / 25p / 24p / 23.98p 200Mbps / 100Mbps / 50Mbps up to approx. 15min.

❖ [Full HD (2048 x 1080)] 24p / 23.98p 100Mbps / 50Mbps up to approx. 20min.

❖ [Full HD (1920 x 1080)] 59.94p / 50p / 29.97p / 25p / 24p / 23.98p 100Mbps / 50Mbps up to approx. 20min.

❖ [Full HD (1920 x 1080) High speed rec.] 120p / 100p 200Mbps up to approx. 6min.

❖ [HD (1280 x 720)] 59.94p / 50p / 29.97p / 25p / 24p / 23.98p 50Mbps up to approx. 30min.

❖ * For recording movies, use a card with UHS Speed Class 3 or higher.

❖ * With Vertical Power Booster Grip attached, individual movie recording time is extended up to approx. 30min. on both 4K and Full HD mode.

Film Simulation mode

❖ 16 modes (PROVIA/Standard, Velvia/Vivid, ASTIA/Soft, Classic Chrome, PRO Neg.Hi, PRO Neg.Std, Black & White, Black & White+Ye Filter, Black & White+R Filter, Black & White+G Filter, Sepia, ACROS, ACROS+Ye Filter, ACROS+R Filter, ACROS+G Filter, ETERNA/Cinema)

Terminal

Digital interface

❖ USB3.0 (High-Speed) / micro USB terminal

❖ * connectable with Remote Release RR-90 (sold separately)

HDMI output

❖ HDMI micro connector (Type D)

Others

❖ ø3.5mm, stereo mini connector (Microphone) / ø2.5mm, Remote Release Connector

❖ Hot shoe, Syncronized terninal

Power supply

❖ NP-W126S Li-ion battery (included)

❖ Battery life for still images*4

http://www.fujifilm.com/products/digital_cameras/x/fujifilm_x_h1/specifications/ ❑❑❑

Editor's Choice Award Winner Vikas Shivaraman

A man who with the luxury of his cinematographic talent, made Lux beauties like Hema Malini, Zeenat Aman, Sri Devi, Meenakshi Seshadri, Juhi Chawla, Pooja Bhatt, Raveena Tandon, Aishwarya look at their luxurious best, an eye that gave Raymond men the look of 'Complete Man', a vision that captured Reid & Taylor Amitabh Bachchan in a fabulously gorgeous format, a crusade that added to the ad world the ravishing Emami smiles of Madhuri Dixit, the lyrical Liril dimples of Preity Zinta, a cinematographic 'mantra' that catapulted the magical luster of Samita Patil, Sushmita Sen, Deepika Padukone and many others to unprecedented illustrious heights, and a magic behind the camera that cast its spell for more than sixty five years to wrought on the screen the subtle sentiments of 'Baghban', the pent-up feelings of 'Baabul', the violent streak of 'Aaj ki Awaz', the unfathomed depth of 'Gehrayee', the contours of 'Chakra' and much more.....That is Barun Mukerjjee who has been awarded the lifetime Achievement awards in Oct 2018 by Digital studio Magazine.

Vikas Sivaraman, belongs to the league of those cinematographers who is one of the most sorted professionals in the advertising world and still remains among the Top 10 in the Indian cinematographer community for last 30 years. From my own experience of observing him closely, I know for sure that his work is as meticulous as of any internationally know cinematographers like Sven Nykvist or Vittorio Storaro. His working style has set the periphery for aspiring generation, a standard, which requires miles to go before you understand it. An eye for detailing and working speed is unmatched. He is the quietest person on the set and engrossed in his work all the time. Over the years like a wine, his cinematography has evolved and can be felt in various films he has lend his talent to blockbusters like Housefull 3, Dhoom 2 and Sarfarosh. Mr. Shivaraman has been awarded 'The Editors Choice Award for the best cinematographer' of the year 2018 by digital studio magazine.

Digitalstudio Magazine

Life Time Achievement Award Winner Barun Mukherjee

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