

WDSF Lighting Specifications

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1.Main objectives.

The main goal of this document is to provide the minimum lighting technical requirements for each host broadcasting and organiser in order to facilitate, not only the proper viewing on location, but also a correct illumination and quality levels for broadcasting.

This lighting proposal should provide approximately 1000 lux throughout the dance floor (f/Stop of approximately f5,6 for a 400 ASA standards), when all lights of the white illumination area are at their 100 % power capacity, other sets may vary depending on several factors wich will explained in the following chapters. This will allow camera operators to have enough depth of field to easily focus the dancers

Uniformity of lighting the different set ups at different locations is essential.

Venues, countries and competitors must not have reason to complain that marks were awarded to other teams because of the superior or special lights level.

Lighting designers, installers and operators must ensure that lights do not shine into dancers' eyes at inappropriate moments causing loss of concentration during competition.

Venue operators must provide additional/adequate air conditioning for television coverage with supplemented lighting.

Lamps giving off excessive heat cause competitors to perspire and look less than their best.

Sufficient space surrounding the dance area is essential for correct lighting, fixture angles and heights must be set in the adequate angle for each given truss height.

This should minimize unwanted and unflattering shadows.

1.Main objectives.

Only luminaires developed for television lighting shall be used.

Those used in the theatre or pop concerts may cause flickering interference with the TV signal and should be avoided.

The lighting design must ensure that:

Luminaires do not obscure viewing by a watching crowd wishing to support their competitors.

Very high levels of illumination on the dance floor or the audience are to be avoided.

All lighting gantries and operator positions must be agreed in advance by the organiser and host broadcaster and, barring obvious local minor variations, be consistent from event to event and country to country.

2.Lighting Sets.

Kiss & Cry set

This set can be placed on the dance floor itself using all the fixtures available on it, using moving heads as backlights, and soft lights as main and fill lights, however , some organisers might prefer to place it in a different spot.

In this case, it is very important to consider the use of extra lights that can be placed on floor level , since it is basic to avoid shadows and to use a soft “ beauty lights ” to enhance the dancer’s look.

This issue will be explained in the “Kiss & Cry“ diagram set.

Effect lighting on the audience

Subtle light effects created with moving heads can be used with the same basic configuration, by programming these effects for each part of the show.

All fixtures must be remotely controllable and dimmable using a dedicated light mixer that can handle a vast variety of special effects and programming.

2.Lighting Sets.

A recommended dance area of 26 m x 16 m is the standard, although in some locations this size might increase significantly, in this case local lighting facility / provider should calculate the addition of extra fixtures to achieve the necessary Lux level.

The following lighting set are to be considered as the main blocks, although they might combine with each other:

White illumination of the dance area.

Level: 1000 lux at a height of 2 metres, evenly distributed throughout the dance area.

Type of lighting : This should be “soft” or “broad based” to provide as near as possible a “shadowless” even illumination. Precautions should be taken to avoid spillage outside the dance area.

Colour Temp: 3200K. throughout the dance area.

Fixtures must be hanging at 10 metres high . To avoid coming in camera shot on wide angles of vertical 36-40 degrees and horizontal 48-50 degrees.

2. Lighting Sets.

Colour wash lighting of the dance floor.

Fixtures must be distributed to reach all spots of the dance floor and must have freedom of movement in order to reach the public if necessary.

Type: LED wash and spot lighting with programmable color effects and movements

Level: 700 lux at a height of 2 metres per fixture with all leds on, or 1500 to 2500 lux when using 1200 HMI robotic luminaires in flood mode evenly distributed throughout the area.

Precautions should be taken to avoid spillage outside the dance area.

Colour Temp: Varying according to the colour used, the base colour, though ,must be 3800 °K .

Minimum Height 10 metres.

Solo Dancers

Follow spot lights must be placed much higher than the dance floor, with the ability to pan to all areas of the area.

Type: HMI Follow spots filtered with 1/2 CTO , to allow both sharp and soft focus areas of varying size and fitted with lamps specially developed for flicker free television coverage.

Level: The ability to offer 1500 lux on all areas of the dance floor, this will be determined by distance and lens used.

Colour Temp: 3800 K. throughout the dance area.

3. Fixtures.

The following lighting fixtures are a recommendation of which type of devices can be used in order to achieve the proper illumination levels ,photometrics and light quality .

Other brands or models can be used, depending on the location (Country) and lighting rental facility, due that these models or some brands might not be available. But it is mandatory to observe that the photometrics and lux provided comply with the ones indicated in this dossier.

Please note , though, that if different brands or models are used, these must be equivalent in terms of light output and characteristics.

This list has intentionally been made with the most possible international standards level.

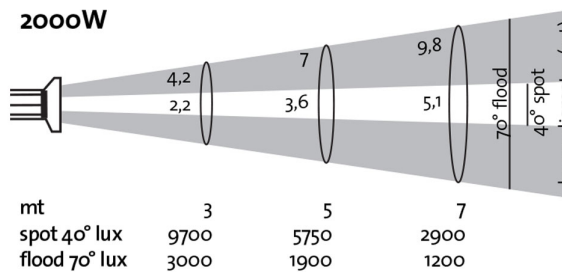
3. Fixtures.

White Illumination of the dance floor

Dimmable open face 2 K tungsten sources like the Cosmobeam 2k, Arrilite 2K or Desisti, used with 1/8 White Diffusion (optional depending on height and distance) are ideal for its availability , cost output power and weight.



PHOTOMETRIC DATA



3.Fixtures.

Colour wash of the Dance floor

Moving head LED's devices such as the MARTIN MC301 or the JBLEED A7 are a very good option for its versatility, power consumption and color options.



MC 301



JBLED A7

Zoom at minimum (13°), all LEDs on

Distance (m)	3	6	9	12	15
1/10 peak	0,7	1,4	2,1	2,7	3,4
1/2 peak	0,5	0,9	1,3	1,8	2,2
Illuminance (lux)	18222	4556	2025	1139	729

Zoom at minimum (12,5°), 36 x red LEDs on

Distance (m)	1,5	3	4,5	6	7,5
1/10 peak	0,3	0,7	1	1,3	1,6
1/2 peak	0,2	0,4	0,6	0,8	1
Illuminance (lux)	16000	4000	1778	1000	640

Zoom at min. (13°), 36 x green LEDs on

Distance (m)	3	6	9	12	15
1/10 peak	0,7	1,4	2,1	2,7	3,4
1/2 peak	0,5	0,9	1,3	1,8	2,2
Illuminance (lux)	13222	3306	1469	826	529

3. Fixtures.

Colour wash and Effect lighting on the Dance floor

Moving head HMI sources such as the VARILITE VL 3000 Spot with its built in color and gobo generator are the best option available for such purpose. This fixtures can be used in any part of the show, due to its versatility. The output light, color and gobos must be adapted to every situation.



PHOTOMETRIC

VL3000 Wash Luminaire - 1200W Metal Halide

Fixture output = 35,000 lumens. All data taken with a seasoned light source at 20 hours of life.

Diffusion	CANDELA (cd)**	BEAM ANGLE (degrees)	BEAM DIAMETER TN*	FIELD ANGLE (degrees)	FIELD DIAMETER TN*
Full Spot	1,253,000	7.5	0.131	14.0	0.246
25% Flood	495,000	10.0	0.175	22.0	0.389
50% Flood	178,000	18.0	0.317	37.5	0.679
75% Flood	94,100	25.0	0.443	49.5	0.922
Full Flood	61,100	30.5	0.545	60.0	1.155

* Multiply throw distance by Tn to determine coverage.

** To calculate center beam illuminance (I) at a specific distance (D): $I = \frac{cd}{D^2}$

-- if (D) is in feet, (I) is in foot candles

-- if (D) is in meters, (I) is in lux

3.Fixtures.

Solo dancers

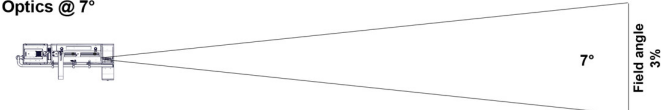
Follow HMI spot lights such as the 1200w KORRIGAR and the ARAMIS 2500w (The size of the ballroom will determine wich one should be used) both filtered with 75 % CTO color correction, filters, are ideal, below the photometrics for KORRIGAR



Photometrics

with HMI 1200W DXS (Osram) source

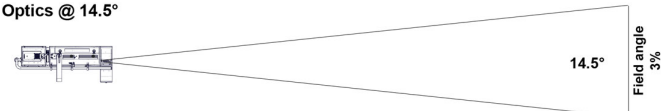
• Optics @ 7°



Beam intensity
1 500 000 cd

Distance	15 m	20 m	25 m	30 m	35 m	40 m
Diameter	1.8 m	2.4 m	3.1 m	3.7 m	4.3 m	4.9 m
Illumination	6 700 lux	3 800 lux	2 450 lux	1 700 lux	1 250 lux	940 lux
Distance	50 ft	65 ft	80 ft	100 ft	115 ft	130 ft
Diameter	6.1 ft	8 ft	9.8 ft	12.2 ft	14.1 ft	15.9 ft
Illumination	610 fc	360 fc	240 fc	160 fc	120 fc	90 fc

• Optics @ 14.5°



Beam intensity
460 000 cd

Distance	15 m	20 m	25 m	30 m	35 m	40 m
Diameter	3.8 m	5.1 m	6.4 m	7.6 m	8.9 m	10.2 m
Illumination	2 050 lux	1 200 lux	740 lux	520 lux	380 lux	290 lux
Distance	50 ft	65 ft	80 ft	100 ft	115 ft	130 ft
Diameter	12.7 ft	16.5 ft	20.4 ft	25.4 ft	29.3 ft	33.1 ft
Illumination	190 fc	110 fc	75 fc	47 fc	35 fc	28 fc

4.Set lighting diagram.

The following diagrams provides examples for two different cases , as we previously mention ;

26 m x16 m Dance floors

Kiss & Cry spots placed outside the dance floor

In all cases the audience will be subtle lighted up by the idle moving heads that are not pointing at the dance floor at a given moment., this would allow to optimize resources and costs.

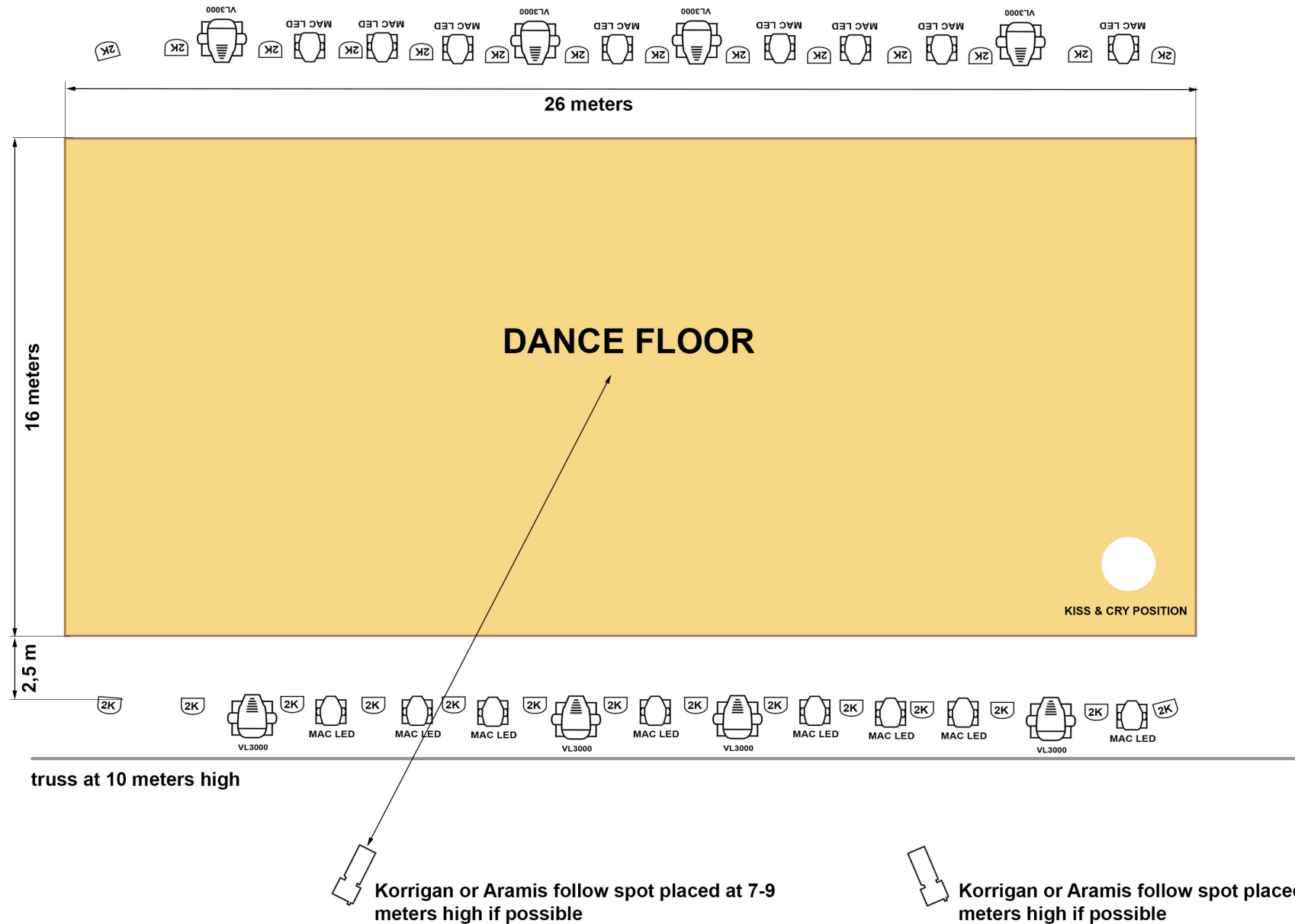
4.Set lighting diagrams- Dance Floor

RECOMMENDED EQUIPMENT (26 m x16 m Dance floors)

28 2K open face tungsten units (14 x truss)
8 VARILITE VL3000 SPOT 1200 HMI units (4 x truss)
16 MARTIN MAC LED 301 units (8 x truss)
2 KORRIGAN 1200 HMI FOLLOW SPOT UNITS FILTERED WITH CTO
AVOLITES PEARL 2008 FULL LIGHTING MIXER
AVOLITES DIMMER 48 CH - 3 KW
PLUS ALL NEEDED TRUSSES , GRIP , CABLES

All fixtures safely locked up in a ceiling hanging truss at 10 meters high if possible.

26 m x 16 m ballrooms



4.Set lighting diagrams. Kiss & Cry

RECOMMENDED EQUIPMENT NEEDED FOR KISS & CRY SPOT IF NOT LOCATED IN THE DANCE FLOOR

2 2K Fresnel Tungsten filtered with 215 White diffusion

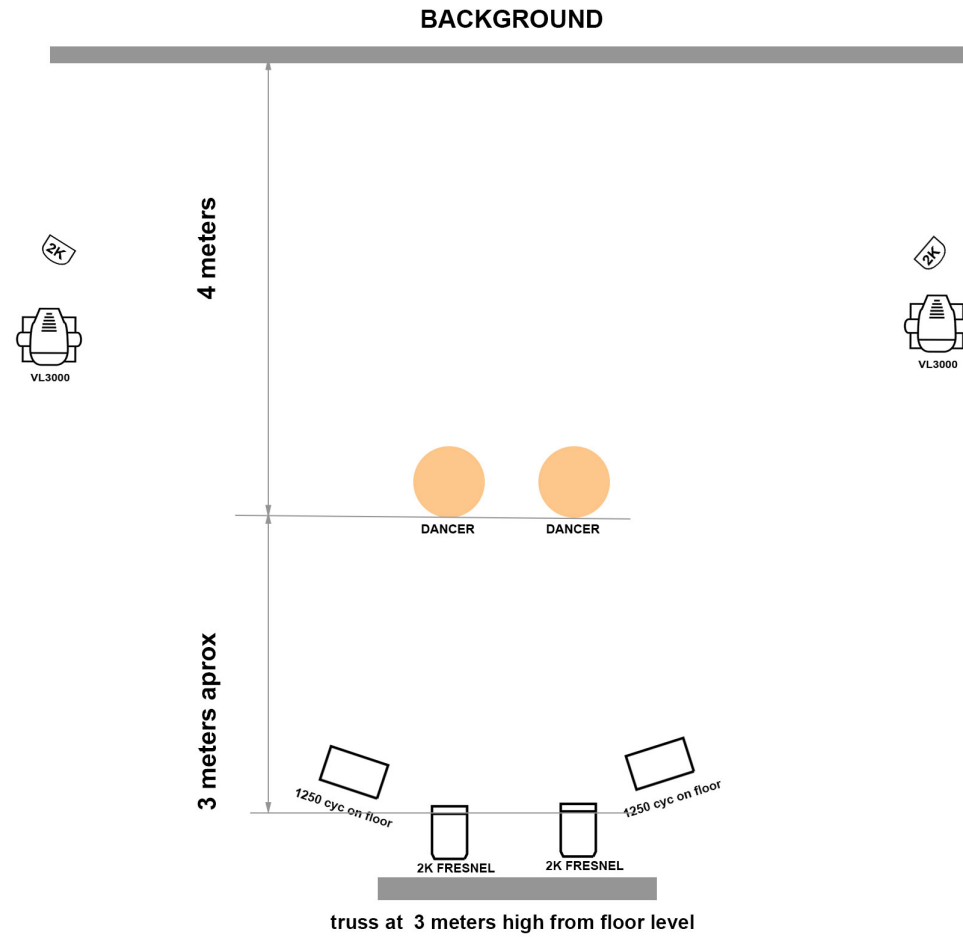
2 1250 W filtered with 215 White Diffusion

2 2 K Open face filtered with 250 White diffusion for the background

2 Varilite VL 3000 Placed between dancers and background as color effect background light

Fixtures safely locked up in a floor based truss at 3 meters high if possible.

CASE 3 KISS & CRY SPOT NOT LOCATED IN THE DANCE FLOOR



5.Extras.

The following suggested fixture is just a proposal , it can enhance the show spectacularity and can also provide the framing of the show the depth of the dance floor, its size , and at the same time create light effects according to the mood of each part of the show . The PIXELINE 1044 . this fixtures can be placed right on the floor stuck to each other all along the dance floor.



6.3D Recreation

The following recreations are just a mere visualization of how this lighting design should look like

It is very important to remark , that the trusses displayed are only a recreation. Whenever possible , trusses must be hanging from the ceiling observing safety standards at all times.

6. 3D Recreation- White Illumination.



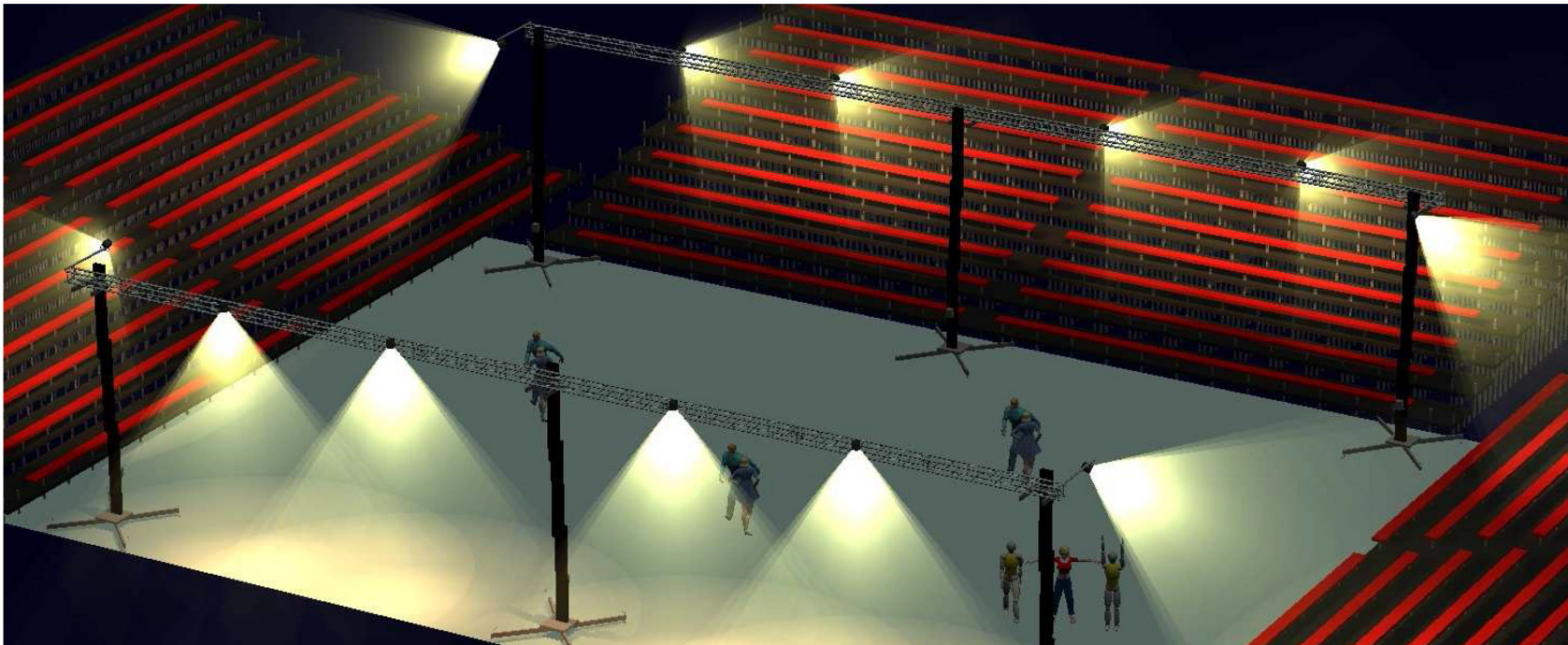
Cosmo beam or 2K open face fixtures, white illumination of the dance floor, please note that all dance floor must be evenly lighted.

6. 3D Recreation- Colour Wash.



LEDs, colour wash illumination of the dance floor

6. 3D Recreation- Effect & Colour Wash.

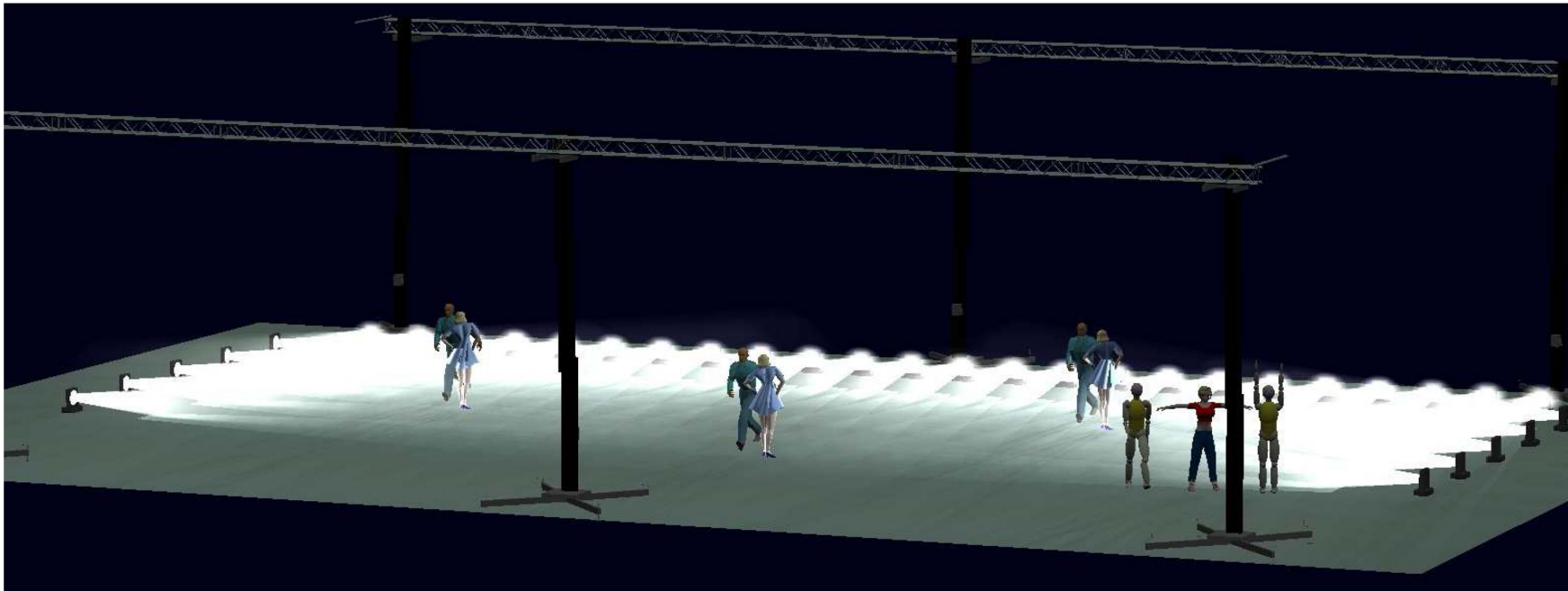


Effect & colour wash illumination of the dance floor using Varilites, please note that fixtures are pointing the public only to give an example of the possibilities that this lights can provide.

These fixtures will also light up the dance floor

The total amount of these lights are 8, the ones placed at the edges of the truss are an alternative place of how to locate them.

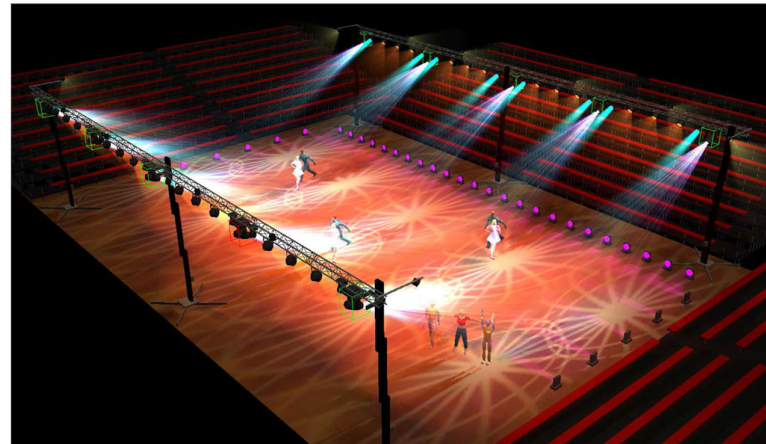
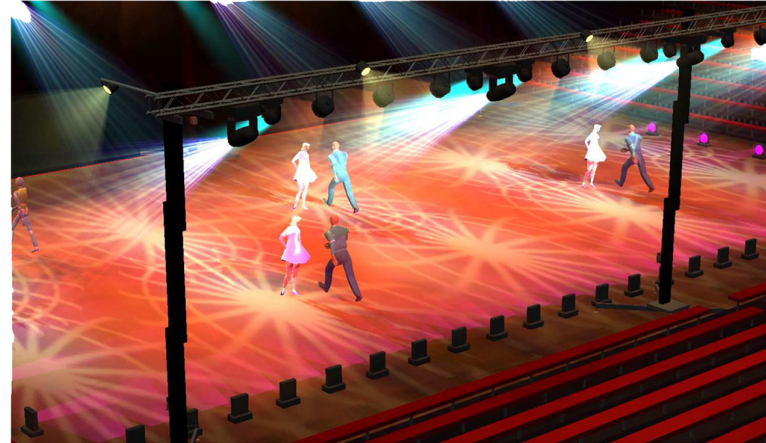
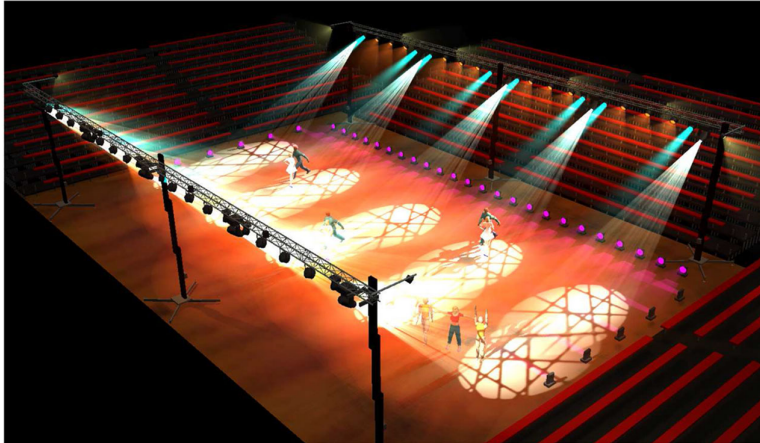
6. 3D Recreation- Extras.



As previously exposed, the PIXELINE 1044 can enhance the show spectacularity it can enhance the show espectacularity and can also provide to the audience the the depth of the dance floor, its size , and at the same time create light effects according to the mood of each part of the show.

This fixtures displayed above do not represent the real fixture.

6. 3D Recreation- All fixtures.



7.Safety.

All installations must be carried out by qualified competent lighting professionals as the events will take place in a public arena and safety is the most important factor.

Lighting gantries/suspension towers must be earthed, erected and operated subject to current safety legislation and regulations of the country concerned.

All luminaires must be double safety bonded and earthed separately.

Safety earthing straps must be provided to all metal staging and other technical equipment in public places.

Power Supplies

The organisers must ensure that all reasonable safety precautions are taken with respect to all electrical power supplies related to the subject matter of this contract, as the voltage and amperage required for this work is lethal if proper precautions are not taken.

It cannot be over-emphasised that this level of power can kill.

Type: AC. Single/Three Phase. 50c/s. The supply must be routed to the venue in such a way that its likely loss is minimised.

Reserve generator capability shall be provided.

Provision for automatic changeover should be provided.

7.Safety.

Comprehensive earthing/grounding for all areas must be provided with appropriate monitoring of earth leakage.

Balance and phasing of load: This must be agreed with the Technical Co- ordinator of the outside broadcast to minimise hum bars on video.

Cabling:

These should be colour coded, of adequate power handling, interceptable (with agreed connectors) and be installed and protected according to local safety standards, colour coding.

Installation: Only competent, professional and qualified installers and operators will be used.

Thank you !