#1905

NDSU Student Technology Fee Action Plan Request

I. Action Plan Introduction and Authorizations

NDSU ORGANIZATION OR UNIT Department of Theatre Arts			
TITLE OF PROJECT **Theatrical lighting modernization.**			
Project Duration (3 years maximum)	**From: Spring semester 2019**	**To: Fall Semester 2019**	
Type of Project (Check one)	**New X**	**Previously Submitted**	**Renewal**
Total Technology Fee Request $44,800			
Project Director **(Must be NDSU faculty or staff)** **Mark Engler**	**Campus Address: 105 Askanase Hall** **Phone: 1-7706** **Fax:** **E-mail: mark.engler@ndsu.edu**		
Name (Type or Print)	**Signature**	**Date**	
Project Director Mark Engler		2-14-19	
Unit Head Mark Engler		2-14-19	
IT Division Consultant	**Signature**	**Date**	
		2-14-19	

Executive Summary (maximum of 175 words)

NDSU Theatre Arts is requesting funding to purchase new lighting equipment for Asakanase hall. We would like to purchase a new lighting control console, 15 LED PAR fixtures, 6 LED cyclorama fixtures, and 4 LED automated fixtures.

This equipment will expand our lighting inventory and allow our students to train with modern lighting technology. It will allow our aspiring designers more flexibility and creativity in the art of theatrical lighting design.

The Technology Fee Advisory Committee will only accept for consideration Student Technology Fee Action Plan Request forms which are fully completed and signed, and whose Project Directors have no past due reports on previously awarded projects as of the current submission deadline date, according to the guidelines listed in the Instructions, pages 1 and 2.

Technology Action Plan Request forms will be opened and reviewed after the submission deadline.

NDSU Student Technology Fee Action Plan Request

II. Project Overview

1. How does this project meet student needs?

The technology used to control the lighting in live entertainment has (and continues to) evolve at a rapid pace. By upgrading and supplementing our inventory of lighting equipment, we can give our students the training necessary to be successful theatrical designers.

2. What audience does this project directly serve? What audience is indirectly served? How many students are affected?

This project will directly affect all theatre majors and those students enrolled in Theatre Practicum (THEA 210), Stagecraft (THEA 270), Lighting and Sound design (THEA 276), and Opera Workshop (MUSC 319), approximately 100 students. Indirectly, the experiences of all the students and community members who attend NDSU Theatre and Opera productions will benefit. Last year approximately 1300 students attended NDSU Theatre productions.

3. For projects that target a subset of NDSU's students, please describe the possibility for broader application in the future.

There isn't a broader application outside the Theatre and Music programs. The equipment can only be used in Askanase Hall, the Walsh Studio Theatre, and in Festival Concert Hall.

4. Describe both the immediate and long term impact of this project.

The equipment will enhance our capabilities in the area of entertainment lighting design. It will improve the quality of the productions the Theatre produces, allow for more dynamic and creative designs, and improve the education of our students. Long term, our students will be better prepared to find jobs or to continue their education in graduate school.

5. Who will pay for ongoing expenses following the technology fee funded portion of this project (e.g., who will replace hardware or software after it has reached its end of life)?

Future upgrades and maintenance will be handled by, the department of Theatre Arts or the Division of Performing Arts.

6. Describe how this project will follow NDSU's best practices in information technology. (Please make sure the NDSU IT Division staff you consulted signs in Part I of this form.)

This equipment will enhance student learning. It will also be more energy efficient than our existing equipment.

7. What service on campus is most similar to the one proposed here? How does this project differ?

The most similar equipment on campus exists in the Festival Concert Hall. Because both the Music and Theatre programs have demanding and conflicting productions schedules, each program needs to maintain its own inventory of lighting equipment.

NDSU Student Technology Fee Action Plan Request

III. Project Description (5 pages maximum)

Include information on the background of this project: how did it come to fruition?

The technology used in entertainment lighting has evolved at rapid pace over the last 20 years. From the computers used to control the lights to the lights themselves, keeping up with the latest trends in technology has been challenging. However, the biggest challenge hasn't been the pace of change but the cost of change. Each new generation of lighting equipment comes with a huge upgrade cost. A typical theatrical production in Akanase Hall uses 150 or more lights, in the Concert hall 200 or more. It is obviously not practical to replace all our lights every few years. Nor is it practical to purchase a few lights every year. The most cost effective approach is to add to our inventory of lighting equipment in smaller batches, taking advantage of the natural cost reduction as the technology matures and becomes less expensive over time.

The biggest trend in lighting technology over the last decade has been the use of LED technology in theatrical lighting fixtures. LEDs have several advantages over traditional incandescent fixtures. LEDs are more energy efficient and generate less heat than traditional lights. They also have the advantage of infinite color selection. In a traditional theatrical fixture, to change the color of the light you need to place a color filter in front of the instrument. Which means each light can only have a single color. With the LED arrays in a new theatrical fixture, any color may be selected and can be changed during the production, increasing the possibilities for design choices and decreasing the number of lights that need to be used.

The Theatre department is requesting funding to purchase 15 LED PAR fixtures, 6 LED cyclorama fixtures, and 4 LED automated fixtures, and a new lighting control console. The three different models of lighting instruments are used in different design situations. The automated fixtures allow for the lights to be repositioned during a performance, much like the moving lights used in big touring music events. The cyclorama lights are used to light backdrops and the PAR fixtures give even washes of light on the stage. All have infinite color changing abilities. The control console is the computer that controls the lights during the performance. A new console is necessary to take full advantage of the capabilities of the new lights.

Modernizing our lighting technology will also help with recruitment. The neighboring institutions and the local high school theatres have technology more advanced than our own. Currently, Concordia College has newer lighting equipment, and the Fargo Public School District has a modern console and a large inventory of intelligent lights. It is difficult to convince students who are interested in Theatrical Design Technology to come to NDSU when they are used to working with more advance technology in their high school.

NDSU Student Technology Fee Action Plan Request

IV. Milestones

List the date for each project milestone. These milestones should represent the ***significant*** accomplishments that will be associated with the action plan. For each milestone, please indicate its expected outcome and the means for assessing that outcome. (The table may be extended as needed.)

	Date	Milestone	Expected Outcomes	Means of Assessment
1.	Spring 2019	Purchase equipment		
2.	Fall 2019		First use in NDSU Theatre's fall Musical	Assessment will be ongoing as we learn the capabilities of the new equipment. The new equipment will become staples in all future production designs.
3.	Spring 2020	THEA 276: Lighting and Sound design for Theatre	The new console and lights will be used in the lighting and sound design class.	Students will use the new equipment in the projects and assignments they create for the class
4.				
5.				

NDSU Student Technology Fee Action Plan Request

V. Supporting Documentation

Gopher Stage Lighting
4141 Cedar Ave S
Minneapolis MN 55407
United States

QUOTE

#Q002748

2/14/2019

Bill To

Angela Price
Accounts Payable
North Dakota State University
PO Box 6050
Fargo ND 58105
United States

Ship To

Mark Engler
North Dakota State University
78 Reineke Fine Arts Center
Dept of Theatre
Fargo ND 58102
United States

Re: Lighting Quote

Expires	Sales Rep	Project	Acct. Terms	Quote Terms
3/13/2019	Roxanne S Miller		Net 30	Net 30

Quantity	Item	Options	Rate	Amount
15	**SO Equipment** ColorSource PAR, Deep Blue, Black XLR Connector Edison Power Connector 7412A1008-A CSPARDB-A		$610.00	$9,150.00
15	**SO Equipment** Diffuser for ColorSource PAR SELRM-7.5 7410K1012 D40 Medium Round Diffuser in Frame, Black		$25.00	$375.00
15	**SO Equipment** Diffuser for ColorSource PAR SELRW-7.5 7410K1013 D40 Wide Round Diffuser in Frame, Black		$25.00	$375.00
15	**SO Equipment** Diffuser for ColorSource PAR SELRVN-7.5 7410K1010 D40 very narrow round diffuser in frame, black		$25.00	$375.00
15	**SO Equipment** Diffuser for ColorSource PAR SELRN-7.5 7410K1011 D40 narrow round diffuser in frame, black		$25.00	$375.00
21	**SO Equipment** ETC C-Clamp 400CC 7060A2009 C-Clamp		$15.00	$315.00

Q002748

Gopher Stage Lighting
4141 Cedar Ave S
Minneapolis MN 55407
United States

QUOTE

#Q002748

2/14/2019

Quantity	Item	Options	Rate	Amount
6	**SO Equipment** Colorsource Cyc COLORSOURCE CYC SHIPS WITH: • Hanging yoke • Power cable with Edison Connector #7415A1000-A ColorSource CYC 120V, Black		$1,214.00	$7,284.00
4	**SO Equipment** Relevé Spot, black** RELSPOT 2510A1001 Ships With: - 2x clamp mounting rails - 1.5m powerCON input cable with your choice of connector **Releve Fixtures expected to begin shipping Mid March to Early April.		$4,759.00	$19,036.00
1	**SO Equipment** Ion Xe Console 2,048 Outputs ION XE 2K-US 4311A1011-US		$7,016.00	$7,016.00

Unless otherwise noted, all shipments are EXW Incoterms 2010, GSL's premises. Tax and shipping not included unless noted.

NOTES: -Shipping is not estimated.
-Releve Spot fixtures expected to be able to ship Mid-March to early April.

Subtotal	$44,301.00
Tax Total	$0.00
Shipping	$0.00
Total	$44,301.00

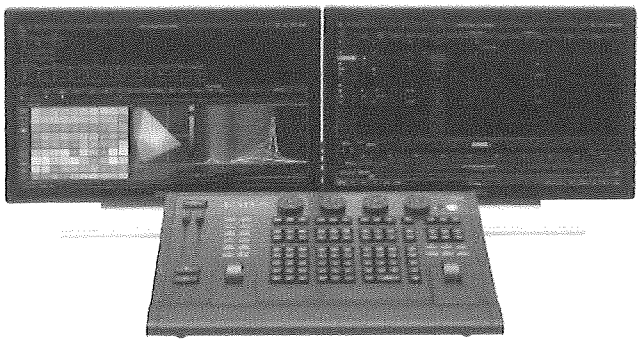
Q002748

ETC®

Ion Xe™ Console

Eos Series

100V 115/120V 230/240V



GENERAL INFORMATION

Ion Xe provides complete control of conventional and moving lights, LEDs and media servers. It supports multiple users with partitioned parameter control and full backup, multiple playback faders and cue lists in a tracking, move-fade environment. The desk includes backlit buttons.

FEATURES

- 2,048 or 12,288 outputs
- 32,768 control channels (any number from 1 - 99,999)
- Up to 99 discrete users
- Partitioned control
- Master playback pair with 100mm faders
- User-definable direct selects
- Four discrete palette types (IFCB)
- Presets function as "all palette"
- Effects provide dynamic relational and absolute progressive behavior
- Central information area (CIA) accesses the browser and other controls
- Four pageable encoders for non-intensity parameter control
- Configurable high-density channel display, with format and flexi-channel modes
- Up to six abstract color spaces, tinting, spectrum and fade path tools.
- User configurable, interactive Magic Sheets
- ETCNet2™ and Net3™ (powered by ACN), ArtNet and Avab® UDP network output protocols
- Show import from Obsession, Express™, Expression®, Emphasis®, Congo®, Cobalt®, Grand MA1, Grand MA2, Safari and Strand 500/300 Series
- Two individually configurable Ethernet ports
- Multiple MIDI and/or SMPTE TimeCode Inputs, Analog/Serial Inputs, OSC transmit/recieve
- Virtual Media Server function for pixel mapped effects, images, animations
- Support for multiple languages, including English, German, Spanish, French, Italian, Japanese, Korean, Russian and Chinese (Simplified and Traditional)

ORDERING INFORMATION

Ion Xe

MODEL	DESCRIPTION
Ion Xe - 2K	Ion Xe, 2048 outputs (minimum)
Ion Xe - 12K	Ion Xe, 12,288 outputs (maximum)
Ion Xe RPU - 2K	Ion Xe Remote Processor, 2048 outputs
Ion Xe RPU - 12K	Ion Xe Remote Processor, 12,288 outputs
Ion Xe 10K	After-sale 10K upgrade
ETCnomad 512	Client for Mac/PC

Output protocols are distributed using ETCNet2 DMX Nodes or Net3 DMX/RDM Gateways. I/O Gateways and Show Control Gateways provide switch closure functionality, MIDI and SMPTE TimeCode.

Ion Xe Accessories

MODEL	DESCRIPTION
Eos MFW 10	Eos Motorized Fader Wing 10
Eos MFW 20	Eos Motorized Fader Wing 20
Eos FW 20	Eos Standard Fader Wing 20
Eos FW 40	Eos Standard Fader Wing 40
Net3 RVI3	Net3 Remote Video Interface
ETCpad	ETC Portable Access Device
Ion Xe - FC	Ion Xe Flightcase

Eos Family Offline Editor software for Mac and PC platforms is called ETCnomad and is available for download from www.etcconnect.com

Ion Xe requires Windows 7 compatible external monitors, 1280x1024 minimum resolution, standard, touch or multi-touch

SHIPS WITH:

- Dust cover
- One Littlite
- Mouse and mousepad
- External alphanumeric keyboard
- Two active display-port to DVI adapters
- One locking IEC power cord

ETC.

SPECIFICATIONS

SYSTEM CAPACITY

- 2,048 or 12,288 Outputs
- 32,768 Control Channels (devices)
- 10,000 Cues
- 999 Cue Lists
- 200 Active Playbacks
- 999 Submasters
- 100 Fader Pages
- 4 x 1,000 Palettes (Intensity, Focus, Color, Beam)
- 1,000 Presets (all palette)
- 1,000 Groups
- 1,000 Effects (relative, absolute or step)
- 99,999 Macros
- 1,000 Snapshots
- 1,000 Curves
- 1,000 Color Paths
- Supports two external display-port monitors at 1280x1024 minimum resolution, with optional touch or multi-touch control
- Solid-state hard drive
- Five USB ports for flashdrives, pointing devices, keyboards

DISPLAY FUNCTIONS

- All show data may be viewed on a single external monitor. External views may be posted separately or expanded across a maximum of two monitors. Three user-configurable workspaces per display, with split-screen/sizing controls.
- The Central Information Area accesses:
  - Browser
  - File Management
  - System Defaults
  - Show Defaults
  - Desk Defaults
  - Partition Definitions
  - Network Configuration
  - Show Data Utilities
  - Print to PDF
  - Record Target Lists
  - Patch functions
  - Help
  - Electronic alpha-numeric keyboard
  - Command Line
  - Selected Cue
  - Error messages
  - Context-Sensitive Control
  - Parameter Categories and individual parameters
  - Filters
- Channel Displays
  - Live channel or table view
  - Blind cue, palette, preset and group views, in list, channel, table and spreadsheet formats
  - User-configurable to show required parameters and/or parameter categories (IFCB)
  - Flexi-channel to determine which channels to display
  - Zoom allows user to define how many channels are viewed
  - Color-coded intensity levels indicate direction of move

SPECIFICATIONS

  - Color-coded non-intensity levels indicate change from previous state
  - Graphic differentiation of moving lights, single parameter devices and unpatched channels
- Magic Sheets
  - User-defined interactive display layouts
  - Objects and images may be imported
- Patch Views
  - Patch by channel
  - Patch by address
  - Patch by Device List (RDM)
  - Assign proportional patch value, curve and, preheat value for intensity
  - Swap pan and tilt
  - Invert pan and tilt
  - Custom fixture editor
  - User configurable shutter order
- Playback Status Display
  - Accesses status of 100 fader pages
  - Expanded cue list for selected cue, optional dynamic countdown of active cues
- Cue List Index
- Effect Editor
- Group Editor
- Park Display
- Dimmer Monitoring
- Submaster List
- Fader Config Display

PLAYBACK CONTROLS

- Master Playback crossfade pair with two 100mm (3.94in.) potentiometers, Go, Stop/Back and Load
- Using external fader wings or virtual faders, 100 pages of faders, each fader configurable as:
  - IFCB Palette/Preset Lists or single instances
  - Cue Playback, with user-configurable button/slider behavior
  - Grand Master with Blackout
  - Additive or Inhibitive Submaster, with user-configurable button/slider behavior
  - Filtered Manual Timing Master
- Rate Controller
- Playback fader controls include:
  - Load to assign cue lists
  - Timing Disable
  - Off/On
  - Release
  - Freeze
  - Assert
  - Manual Override
  - Rate
  - Go To Cue 0
  - Spread
  - Background Enable/Disable
  - 10 Priority States
  - 10 Background Priority States
  - Parameter and channel filters
- Macros
  - May be set to play background or foreground
  - Startup and Shutdown Macros
  - Disconnect Macros

SPECIFICATIONS

MANUAL CONTROL

- Channel selection from keypad and/or multi-touch direct selects
- Lists constructed with +, -, thru
- Intensity set with level wheel, keypad, level button, full and out
- Select Last recalls last sequential channel selection set
- Select Manual selects all channels with manual values
- Select Active selects all channels with intensity above zero
- Ordered groups
- Offset; including even, odd, random and reverse
- Fan
- Sneak
- User-definable home
- Home by parameter, parameter category or all non-intensity parameters
- Capture
- Park at level
- Scaled park for temporary percentage adjustment
- Recall-from and Copy-to commands
- About provides detailed view of selected channels or record targets
- Undo
- Highlight and Lowlight, with optional user-definable Rem Dim
- Lamp controls to strike and douse arc sources, calibrate devices

PROGRAMMING FEATURES

- Channel Functions
  - Non-intensity parameters set via numeric entry or pageable encoders
  - Encoders support software-controlled tactile response
  - Local display of color and gobo images
  - Color matching to gel selector
  - Color Path, color tinting and color spectrum tools.
  - Apply discrete time and delay per channel parameter
- Palette and Preset Functions
  - Record and Update
  - Toggle display to absolute data
  - Up to 999 decimal values may be inserted between any two whole numbers
- Effects
  - Create live or blind
  - Pattern-based relative dynamic effects
  - Absolute effects
  - Step effects
  - Channel level overrides
  - Cue level overrides
  - Entry mode determines how parameters enter effects
  - Exit mode determines how parameters depart effects
- Cue Recording
  - Cue List HTP/LTP Intensity
  - Cue List Priority and Background Priority
  - Cue List Assert
  - Fader as progress controller, manual or intensity master
  - Record manual values or channels in use
  - Auto playback of recorded cues
  - Referenced or auto-mark instructions
  - Block at cue or parameter level
  - Assert at cue or parameter level
  - All-fade flag

SPECIFICATIONS

  - Follow or hang times
  - Out of sequence link
  - Loop functions
  - Cue level parameter category timing
  - 20-part multi-part cues
  - Cue-level rate override
  - Mark flags for Auto or Referenced and Referenced Priority Marks
  - Up to 999 decimal cues between each two whole-numbered cues
  - Execute List
    - Triggers snapshot
    - Triggers macros
    - Triggers go of other cues
    - Syncs go to multiple cue lists
    - Show-control triggers
    - Analog triggers
  - Update and Update Trace functions
  - Undo record and delete
- Submaster Recording and Playback
  - 999 additive or inhibitive submasters
  - Bump button timing for fade up/dwell/fade out
  - Assert/Channel select button
  - Exclusive or Shielded Mode
  - Background enable/disable
  - Restore to background or minimum value
  - LTP/HTP intensity
  - Fader as progress controller or intensity master
  - Bump button to mark NPs
  - Priority and Background Priority status
  - Motorized faders match level across all devices and when paging
  - Submaster mapping on the fly
- Curves
  - Assignable in patch to modify dimmer output ramp
  - Assignable at cue or cue part level to modify intensity crossfade profile or non-intensity parameter ramping

INTERFACES

- Two individually configurable ethernet ports
- ETCNet2, Net3 (powered by ACN), ArtNet and Avab UDP output protocols
- Four DMX/RDM ports
- Contact-closure triggers via D-Sub connector
- Two video connectors support display-port external displays (1280x1024) with optional single-touch or multi-touch screen control
- USB multipurpose (five ports)
- OSC Transmit/Receive
- UDP Transmit/Receive
- MIDI TimeCode, MIDI Show Control through Gateway
- SMPTE TimeCode through Gateway
- Contact closure (12 analog inputs, 12 SPDT contact outputs, RS-232) through Gateway

ELECTRICAL

- AC input (100 - 240V at 50/60 Hz)
- Power consumption (less external monitors) approximately 1 amp at 120V or 230/240V

PHYSICAL

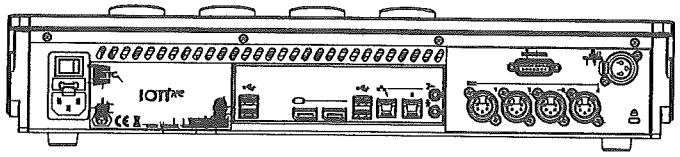
Ion Xe Dimensions*

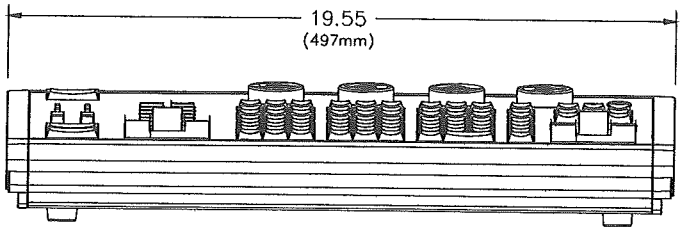
MODEL	HEIGHT		WIDTH		DEPTH	
	inches	mm	inches	mm	inches	mm
Ion Xe	4.10	104	19.55	497	14.24	362
Ion Xe in shipping container	7.75	197	26.75	679	18.5	470
Ion Xe in roadcase	12.45	320	31.59	803	20.47	521

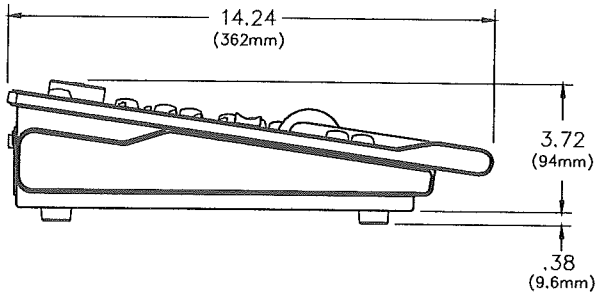
Ion Xe Weight*

MODEL	WEIGHT	
	lbs	kgs
Ion Xe console	12.7	5.76
Ion Xe in shipping container	18.7	8.48
Ion Xe in roadcase	44.25	TBD

*Weight and dimensions typical





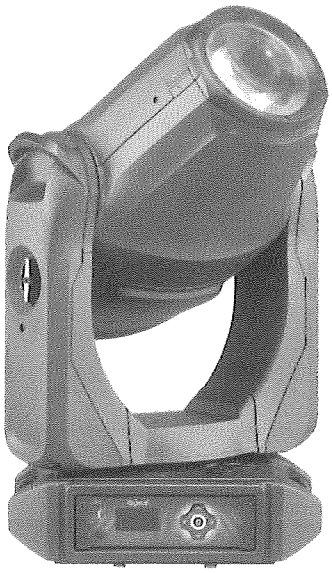


Corporate Headquarters · 3031 Pleasant View Rd, PO Box 620979, Middleton WI 53562 0979 USA · +1 608 831 4116
London, UK · Unit 26-28, Victoria Industrial Estate, Victoria Road, London W3 6UU, UK · +44 (0) 20 8896 1000
Rome, IT · Via Pieve Torina, 48, 00156 Rome, Italy · +39 (06) 32 111 683
Holzkirchen, DE · Ohmstrasse 3, 83607 Holzkirchen, Germany · +49 (80 24) 47 00-0
Hong Kong · Room 1801, 18/F, Tower 1 Phase 1, Enterprise Square, 9 Sheung Yuet Road, Kowloon Bay, Kowloon, Hong Kong · +852 2799 1220
Web · etcconnect.com ·

Relevé® Spot Luminaires

100-240 V

Automated Lighting Series



GENERAL INFORMATION

The Relevé Spot from ETC brings the color quality, control, and consistency of the ETC LED product lines to the automated lighting world. Relevé builds on the legendary color control of ETC's LED products and provides a reliable, full-featured automated fixture of the highest quality.

APPLICATIONS

- Theatres
- Houses of worship
- Universities and schools
- Hospitality
- Retail
- Exhibition centers
- Clubs
- Cafetoriums

PRODUCT FEATURES

- Brightness of up to 6,000 lumens
- Additive LED RGIL (ColorSource Deep Blue) system creating strong saturated colors and warm/cool white output
- Crisp gobo projection with five rotating/indexing dichroic gobos
- 18-54° zoom range that covers the most popular ellipsodal field angles
- Ani-gobo breakup and effect wheel enables a variety of beam breakups as well as spectacular fire, water, and leaf effects.
- Excellent variable frost that perfectly emulates common theatrical frost
- Whisper Home - instant pan and tilt calibration/homing at boot with minimal fixture movement
- Extremely quiet operation

ORDERING INFORMATION

Relevé Spot Luminaire

MODEL	DESCRIPTION
RELSPOT	Relevé Spot Automated Luminaire, Black
RELSPOT-1	Relevé Spot Automated Luminaire, White
RELCASE	Road Case for Relevé Spot

Notes: Fixture includes two (2) Clamp Rails.

Accessories

Model #	Description
7410B7037-A	Fixture Power Cord upgrade, Black, 5-15 Edison to powerCON
7410B7037-B	Fixture Power Cord upgrade, Black, Stage Pin to powerCON
7410B7037-C	Fixture Power Cord upgrade, Black, 5-20 Twistlock to powerCON
7410B7037-X	Fixture Power Cord upgrade, Black, bare ends to powerCON
PSF1131	Mega-Coupler™
PSF1133	Mega-Claw™
PSF1135	Trigger Clamp™

PRODUCT SPECIFICATIONS

Source

LED details	52 Lumileds LUXEON® C LEDs
Max lumens	6,000
Lumens per watt	33
L70 rating (hours to 70% output)	36,000 hours (estimate pending testing data)

Color

Colors used	Red, Green, Indigo, and Lime
Color temperature range	2700 K - 7000 K
Calibrated array	Yes
Red shift	No
Notes	See page 6 for color rendering information

Optical

Beam angle range	18° - 54°
Gate size	44 mm
Aperture size	160 mm
Pattern projection	Rotating and Indexable wheel with five (5) patterns plus open Ani-gobo wheel with six (6) patterns plus open includes interconnecting art between patterns
Frost	Theatrical Light Frost Additional accessories available
Iris	20 Blade Iris
Camera flicker control/Hz range	1,200Hz (default) and 25,000Hz (via RDM)
Notes	See page 5 for additional photometric information

Control

Input method	DMX-512 via 5-pin XLR
Protocols	DMX via RS-485
Modes (footprint)	Standard (20) Direct (25)
UI type	Black and White graphical UI with 5 button navigational control
Local control	Yes
Dimming Performance	8-bit controlled with internal 15-bit smoothing

Electrical

Voltage range	100V - 240VAC, 50/60Hz
Input method	powerCON in and thru
Fixtures per circuit	5 @ 120 V, 10 @ 240 V
Wattage (typical/standby)	265 W / 29 W
Current draw	See page 7 for full power table

Thermal

Ambient operating temp	0 to 40° C (32 to 104° F)
Fan (controllable)	Three Modes (Standard, Studio, Off)
Droop compensation	Yes
Staionary dBA/Full RGB	32.3 dba (Standard Mode)
Max BTUs/hour	975

Physical

Pan and Tilt Range	540 Pan, 270 Tilt
Max Pan/Tilt Speed	
Encoders	Whisper Home, motionless absolute encoders
Materials	Die-cast aluminum and plastic
Color options	Black or White
Mounting options	Any orientation
IP rating	IP-20
Weight	67 lb (30.4 kg)
Included accessories	Two (2) Clamp mounting rails
Notes	See page 6 for dimensions

Warranty

Full Fixture	Two (2) years
LED Array	Five (5) years

Regulatory & Compliance

Approved Regulatory Standards	Conforms to UL STD.1573 Certified to CSA STD. C22.2 No: 166 CE

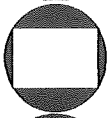
Safety

Safety	Minimum distance to illuminated surface = 2.0m Minimum distance from fixture head to combustible materials = 0.1m

GOBO INFORMATION

Rotating Gobo Wheel

1 - Ice



2 - 31 Rectangle

3 - Interlocking Breakup

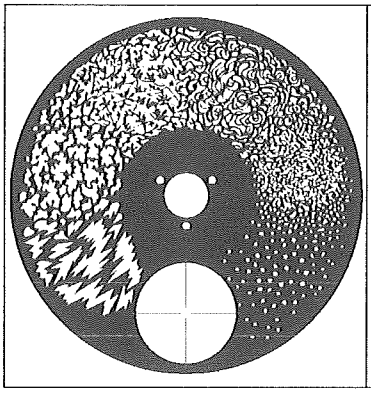
4 - Sticks

5 - Geometric

Rotating Gobo Dimensions

Outside Diameter	45.5 mm (1.79 in)
Image Diameter	36 mm (1.42 in)
Materials	0.2 mm Stainless Steel 1.1 mm Glass Borofloat

Ani-gobo Wheel



Custom designed wheel with six (6) distinct breakup patterns. Usable for
-Indexed Standard Breakups
-Animation Effects
-Graphical Transitions
-Gobo Morphing
-Out of Focus pattern effects

PHOTOMETRY INFORMATION

Relevé Spot - Color Temperature 3200k

Mode	Degree	Candela	Field Lumens	Power Consumption	Lumens Per Watt
Narrow	18	67,002	5,078	168w	30.23
Medium	36	22,921	5,489	168w	32.67
Wide	54	11,533	5,554	168w	33.06

Metric conversions: For meters, multiply feet by 0.3048
For lux, multiply footcandles by 10.76

Relevé Spot - Color Temperature 5600k

Mode	Degree	Candela	Field Lumens	Power Consumption	Lumens Per Watt
Narrow	18	58,588	4,539	155w	29.28
Medium	36	20.097	4,848	155w	31.28
Wide	54	10.196	4,941	155w	31.88

Metric conversions: For meters, multiply feet by 0.3048
For lux, multiply footcandles by 10.76

Narrow Zoom - 18 Degrees

Throw Distance (d)	10ft 3.0m	15ft 4.6m	20ft 6.1m	25ft 7.6m	188.7ft 57.5m
Field Diameter	6.5ft 2.0m	9.8ft 2.9m	13ft 3.9m	16ft 4.9m	123ft 37.4m
Illuminance (fc)	657	292	164	105	1.8
Illuminance (lux)	7070	3142	1768	1131	20

Narrow Zoom - 18 Degrees

Throw Distance (d)	10ft 3.0m	15ft 4.6m	20ft 6.1m	25ft 7.6m	188.7ft 57.5m
Field Diameter	6.5ft 2.0m	9.8ft 2.9m	13ft 3.9m	16ft 4.9m	123ft 37.4m
Illuminance (fc)	585	260	147	94	1.6
Illuminance (lux)	6306	2803	1577	1009	18

Medium Zoom - 36 Degrees

Throw Distance (d)	10ft 3.0m	15ft 4.6m	20ft 6.1m	25ft 7.6m	188.7ft 57.5m
Field Diameter	14.5ft 4.4m	21.8ft 6.64m	29ft 8.8m	32ft 11m	274ft 83.5m
Illuminance (fc)	229	102	57	37	0.64
Illuminance (lux)	2467	1097	617	395	7

Medium Zoom - 36 Degrees

Throw Distance (d)	10ft 3.0m	15ft 4.6m	20ft 6.1m	25ft 7.6m	188.7ft 57.5m
Field Diameter	14.5ft 4.4m	21.8ft 6.64m	29ft 8.8m	32ft 11m	274ft 83.5m
Illuminance (fc)	201	89	50	32	0.56
Illuminance (lux)	2163	961	541	346	6

Wide Zoom - 54 Degrees

Throw Distance (d)	10ft 3.0m	15ft 4.6m	20ft 6.1m	25ft 7.6m	188.7ft 57.5m
Field Diameter	27.4ft 8.4m	41.2ft 12.6m	55ft 16.8m	68.9ft 21m	519.4ft 158.3m
Illuminance (fc)	115	51	29	19	0.32
Illuminance (lux)	1241	552	310	199	3

To determine center beam illumination in footcandles at any throw distance, divide candela by the throw distance squared

For field diameter at any distance, multiply distance by 0.491
For beam diameter at any distance, multiply by 0.274

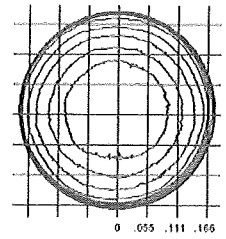
Wide Zoom - 54 Degrees

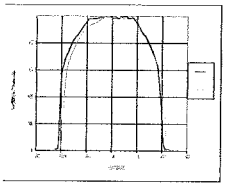
Throw Distance (d)	10ft 3.0m	15ft 4.6m	20ft 6.1m	25ft 7.6m	188.7ft 57.5m
Field Diameter	27.4ft 8.4m	41.2ft 12.6m	55ft 16.8m	68.9ft 21m	519.4ft 158.3m
Illuminance (fc)	102	45	26	16	0.28
Illuminance (lux)	1097	488	274	176	3

To determine center beam illumination in footcandles at any throw distance, divide candela by the throw distance squared

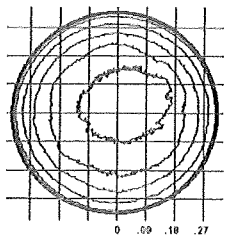
For field diameter at any distance, multiply distance by 0.491
For beam diameter at any distance, multiply by 0.274

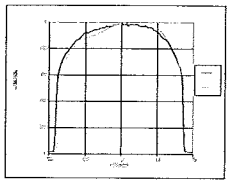
Narrow Zoom



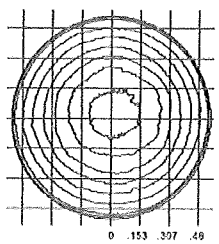


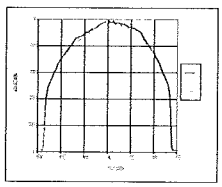
Medium Zoom





Wide Zoom



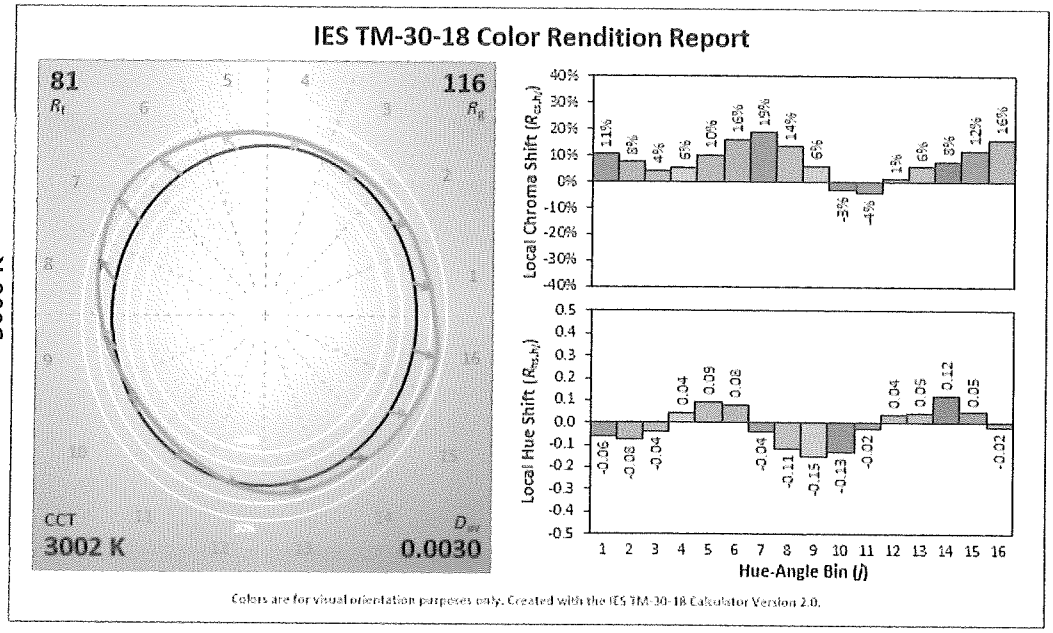


COLOR METRIC INFORMATION

The Relevé Spot's all new LED engine is designed to give bright and vibrant colors in every combination. By building a light engine with a custom array of LED colors, ETC has designed the fixture for the brightest reds, most vibrant greens, deepest indigos, and the extreme power of a wide-band lime emitter to tie the whole spectrum together. But that's only the beginning, because of ETCs unique and industry leading additive color mix, as you create and tune your favorite colors the fixture adds more and more colors of light together, instead of constantly subtracting light through the use of multiple layers of glass filters.

Whether you are choosing your favorite gel color, matching a color on your stage, or tuning the perfect hue of every color imaginable, the additive power of Relevé Spot's color mixing system will have you swearing it uses three to four times more electricity than its extremely efficient 180 W.

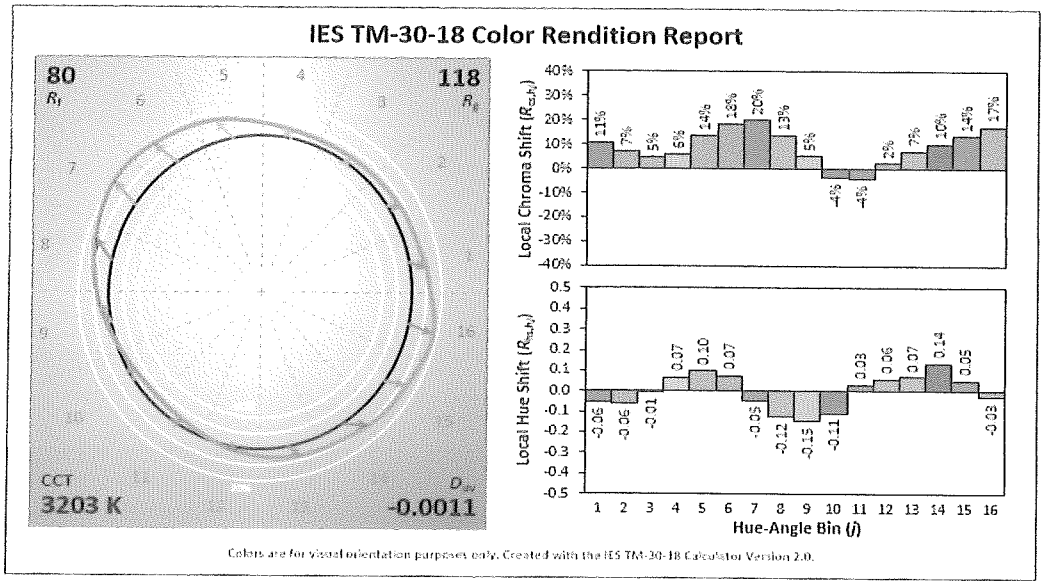
3000 K



Additional Color Metrics

3000 K	
CRI R_a (R_9)	75 (8)
TLCI	56

3200 K

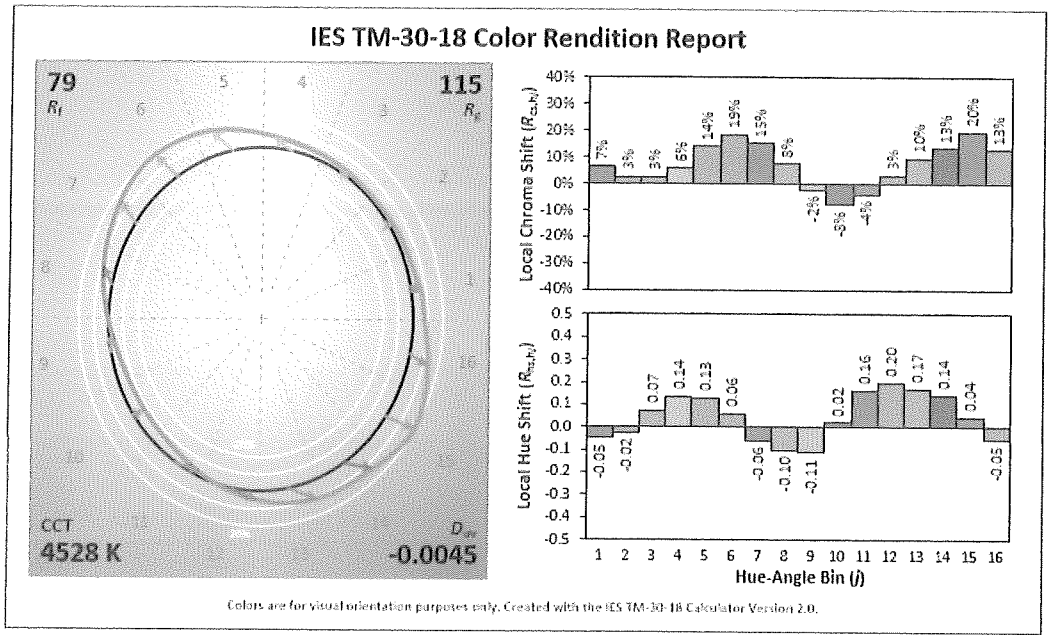


Additional Color Metrics

3200 K	
CRI R_a (R_9)	75 (8)
TLCI	56

COLOR METRIC INFORMATION

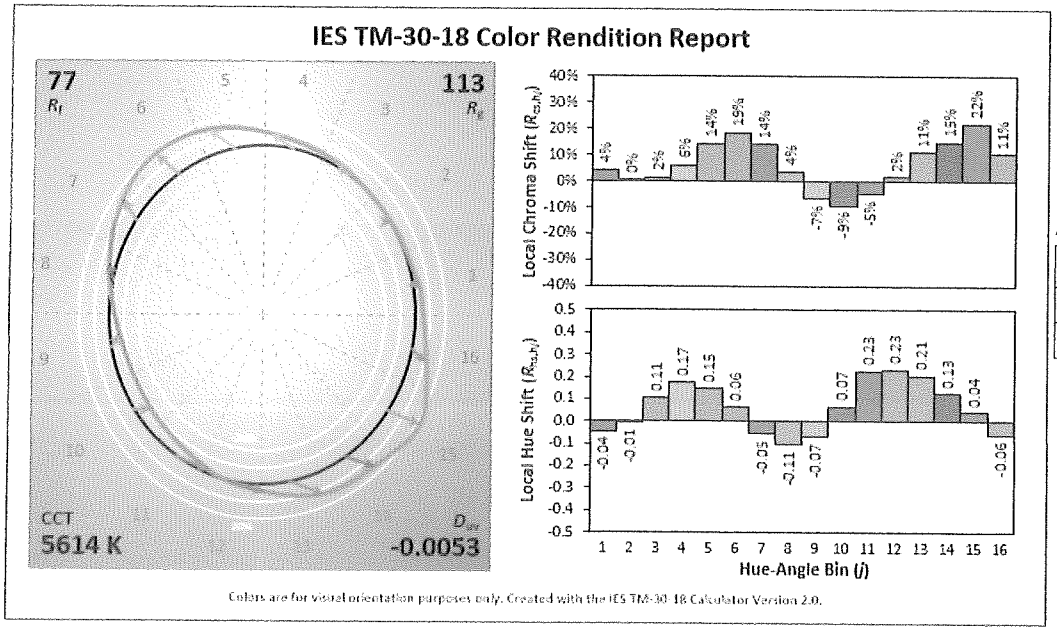
4500 K



Additional Color Metrics

4500 K	
CRI R_a (R_9)	79 (38)
TLCI	63

5600 K



Additional Color Metrics

5600 K	
CRI R_a (R_9)	79 (57)
TLCI	67

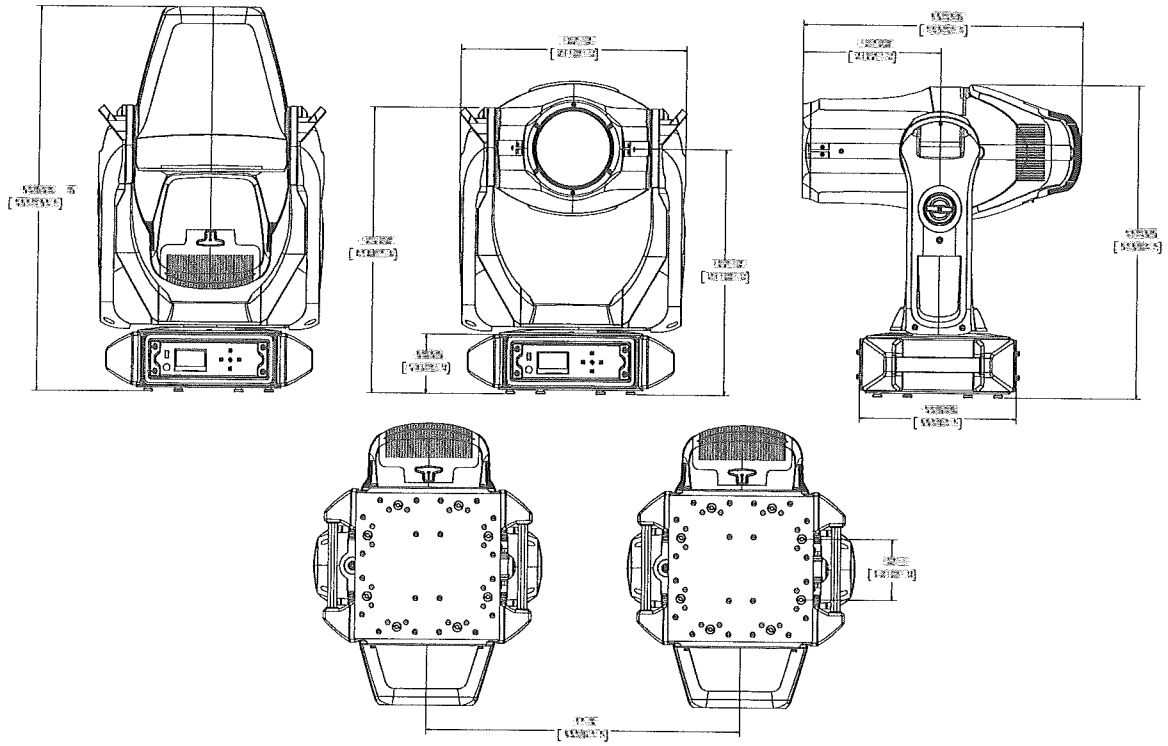
Relevé Spot Luminaire

Automated Luminaire Series

Dimensions

MODEL	HEIGHT		WIDTH		DEPTH		WEIGHT	
	in	mm	in	mm	in	mm	lb	kg
Relevé Spot	31.6	803	18.8	477	13.0	330	67	30.4
Relevé Spot in Box	35.6	905	22.7	577	17.5	445	75	34.0
Relevé Spot in Roadcase	41.8	1061	22.0	559	26.8	680	200	90.7

*Does not include mounting hardware



Additional Accessories

MODEL	DESCRIPTION
RELFROST114	Optional Frost Accessory (R114), Not installed
RELFROST119	Optional Frost Accessory (R119), Not installed
RELFROST124	Optional Frost Accessory (R124), Not installed
RELFROST132	Standard Frost Accessory (R132)
RELTOPHAT	Top Hat
RELGOBOKIT	Gobo Carrier Kit
7060A1022	Galvanized Safety Cable w/Spring Snap

Relevé Spot Power Table

VAC	Amps	Hz	Watts	VA	PF
100	2.62	50	259.9	272.2	0.99
100	2.63	60	260.9	264.5	0.99
120	2.18	60	262.5	264.3	0.99
200	1.28	50	253.1	258.4	0.97
208	1.23	60	251.2	252.4	0.98
220	1.17	50	255.6	261.8	0.96
240	1.10	60	252.2	270.5	0.95

Corporate Headquarters · Middleton, WI USA
Global Offices · London, UK · Rome, IT · Holzkirchen, DE · Paris, FR · Hong Kong · Singapore · New York, NY · Orlando, FL · Los Angeles, CA

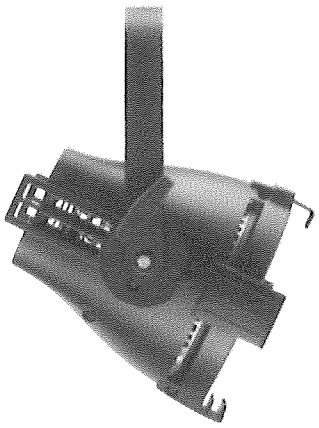
etcconnect.com

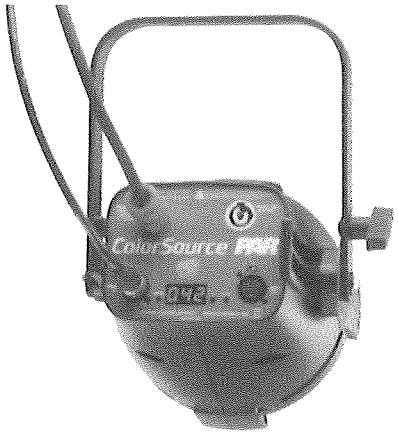
ETC®

ColorSource™ PAR

ColorSource Series

100V 115/120V 230/240V





GENERAL INFORMATION

The ETC ColorSource PAR offers a quality of build and light that has never been seen in an affordable wash fixture. Using ETC's unique RGB-L color system, the ColorSource PAR provides a rich, bright light unlike any other LED washlight in its class. And it was designed and manufactured by ETC.

APPLICATIONS

- Houses of worship
- Universities and schools
- Hospitality
- Retail
- Exhibition centers
- Meeting rooms
- Clubs
- Cafetoriums

PRODUCT FEATURES

- ETC's new RGB-L chipset (Red, Green, Blue and Lime)
  - Also available in Deep Blue that replaces the blue LEDs with indigo for rich, saturated blues and magentas
- Homogenized optics
- Simple user interface with seven-segment display
- PowerCon in and thru
- DMX/RDM in and thru (5-pin)
- LED droop compensation
- Optically calibrated
- Tour-ready, aluminum housing

ORDERING INFORMATION

ColorSource PAR

MODEL	DESCRIPTION
CSPAR	ColorSource PAR, black
CSPAR45	ColorSource PAR RJ45, black
CSPARDB	ColorSource PAR Deep Blue, black
CSPARDB45	ColorSource PAR Deep Blue RJ45, black

Note: ColorSource PAR luminaires ship with a hanging yoke and a power cable with connector of choice. See page 2 for connector options. C-clamps are not included. For addtional color options, please add the following: -1 for white, -5 for silver or -8 for custom color.

SPECIFICATIONS

GENERAL

- Eight RGB-L chipset color-mixing wash luminaire
- ETL Listed to UL1573, the standard for stage and studio lighting units
- IP20-rated for indoor use
- Power- and DMX-in/thru connections for easy setup
- Simple seven-segment, three-button interface with easy access to 12 customizable presets and five sequences

PHYSICAL

- Rugged, die-cast, all-metal housing
- Easy-access slots for secondary lenses and standard 7.5" PAR accessories
- Available in black (standard), white or silver (optional) or custom colors (contact factory)
- Hanging yoke included

ELECTRICAL

- 100VAC to 240VAC 50/60Hz universal power input
- PowerCon in and thru connections
- Up to nine luminaires (15A max) may be linked via power thru connector (10 luminaires total per circuit) when used with R20 relay module or Unison® Echo Relay Panel. Consult breaker trip curves when used with other equipment. Requires power from a non-dimmable source
- Inrush
  - 120V: 35A (First half-cycle)
  - 240V: 49A (First half-cycle)

LED*

- 55,000-hour LED life (70% intensity after 55,000 hours)
- 40 Luxeon® Z LED emitters (five per optic)

*See additional LED notes on page 3

COLOR

- Exclusive RGB-L Color array
- Available with a Deep Blue array that replaces blue with indigo
- Brightness and color range unlike any other four-color system
- Droop compensation maintains color accuracy during use
- Optically calibrated to ensure consistency across fixture

OPTICAL

- Primary field angle of 24.9° and beam angle of 14.5°
- Secondary lenses available for multiple beam-spread options
- Homoginized optics for a consistent, smooth beam
- Refer to accessories charts for lenses available

CONTROL

- Available with DMX512 in and thru via five-pin XLR or RJ45 connectors (Termination Required)
- RGB control (See DMX control table for additional information)
- 15-bit virtual dimming engine provides smooth, high-quality theatrical fades
- RDM functionality for address and setting changes
- Local control of presets (12) and sequences (5)

THERMAL

- Ambient operating temperature of 32° to 104°F (0° to 40°C)
- Active electronic thermal management for thermal droop-free operation
- Variable-speed fan
- Fixture is designed for continuous operation up to 104°F (40°C) ambient temperature and requires free flow of air around fixture housing

ADDITIONAL ORDERING INFORMATION

Power Input Cables

Use information below to order 5' power input leads with factory-fitted connectors.

MODEL	DESCRIPTION
DPA-A	5' PowerCon to parallel blade U-ground (Edison) connector
DPA-B	5' PowerCon to 20A two-pin and ground (stage-pin) connector
DPA-C	5' PowerCon to grounded 20A twistlock connector
DPA-X	5' PowerCon to bare-end power input lead

Power-Thru Jumpers

Note: Power thru jumpers connect to luminaire's output (thru) connector to provide link to successive luminaires

MODEL	DESCRIPTION
DPJ-5	5' PowerCon to PowerCon fixture to fixture jumper
DPJ-10	10' PowerCon to PowerCon fixture to fixture jumper

Luminaire Accessories

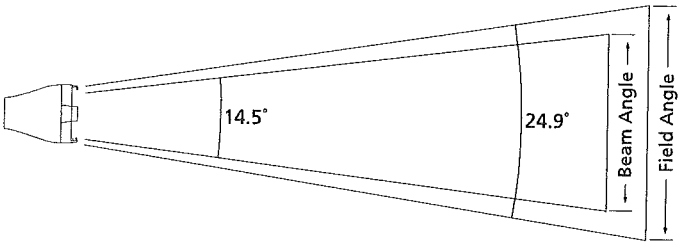
MODEL	DESCRIPTION
CSPARFSY	Yoke with floor-stand attachment
400BD	Barn door (Use only as a flexible top hat to diminish aperture glare. Not for beam shaping)
407CF	Color Frame (use for round and oblong lenses)
400L	Egg Crate Louver
400PTH3	Top Hat 3" Tube
400PTH6	Top Hat 6" Tube
400PHH	Half Hat 6" Tube
400CC	C-Clamp (does not ship with fixture)
400SC	Safety Cable (32")
DPSJ-25	25' PowerCon to Edison input power cable with inline switch

PHOTOMETRICS

ColorSource PAR

Mode	Degree	Candela	Field Lumens	Beam Lumens	Lumens Per Watt
Regulated - RGB	14.4	47,900	2,749	1,537	32

Metric conversions: For meters, multiply feet by 0.3048
For lux, multiply footcandles by 10.76



Throw Distance (d)	10ft 3.0m	15ft 4.6m	20ft 6.1m	25ft 7.6m	217.7ft 66.4m
Field Diameter	4.4ft 1.3m	6.6ft 2.0m	8.8ft 2.7m	11ft 3.4m	–
Illuminance (fc)	474	211	119	76	1
Illuminance (lux)	5,102	2,268	1,276	816	10.76

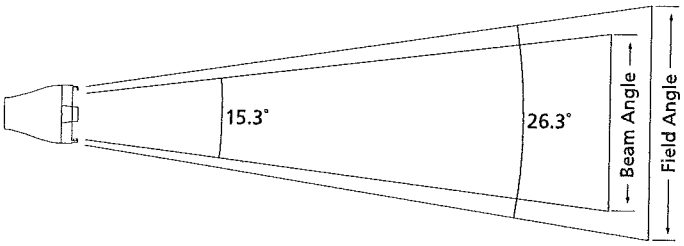
To determine center beam illumination in footcandles at any throw distance, divide candela by the throw distance squared

For field diameter at any distance, multiply distance by 0.442
For beam diameter at any distance, multiply by 0.254

ColorSource PAR Deep Blue

Mode	Degree	Candela	Field Lumens	Beam Lumens	Lumens Per Watt
Regulated - RGB	15.32	32,627	2,129	1,273	29.8

Metric conversions: For meters, multiply feet by 0.3048
For lux, multiply footcandles by 10.76



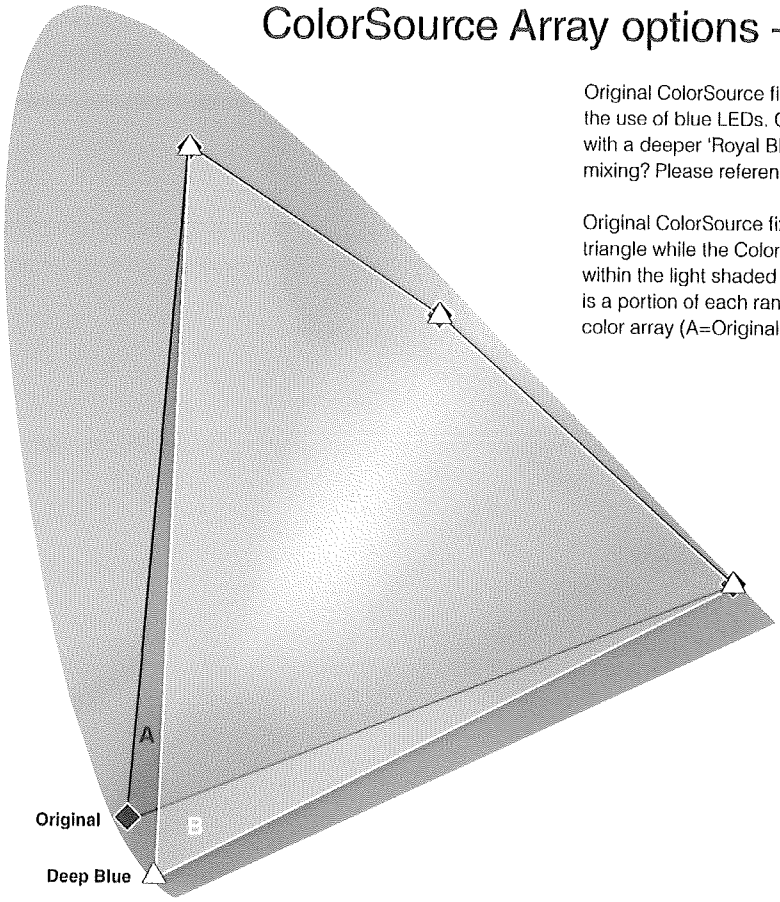
Throw Distance (d)	10ft 3.0m	15ft 4.6m	20ft 6.1m	25ft 7.6m	180.6ft 55.1m
Field Diameter	4.7ft 1.4m	7.0ft 2.1m	9.3ft 2.8m	11.7ft 3.6m	–
Illuminance (fc)	326	145	82	52	1
Illuminance (lux)	3,512	1,561	878	562	10.76

To determine center beam illumination in footcandles at any throw distance, divide candela by the throw distance squared

For field diameter at any distance, multiply distance by 0.467
For beam diameter at any distance, multiply by 0.269

COLORSOURCE PAR VS COLORSOURCE PAR DEEP BLUE

ColorSource Array options – Original vs. Deep Blue



Original ColorSource fixtures use an RGB-L array where the 'B' represents the use of blue LEDs. ColorSource Deep Blue replaces those blue LEDs with a deeper 'Royal Blue' (indigo) LED. How does this impact your color mixing? Please reference the color chart.

Original ColorSource fixtures can reach any color within the dark shaded triangle while the ColorSource Deep Blue fixtures can reach any color within the light shaded triangle. While much of these areas overlap, there is a portion of each range that can only be reached by the respective color array (A=Original, B=Deep Blue).

Common gels found in original ColorSource
Roscolux 095, 075, 076
Lee 363, 119, 721, 722, 132, 141, 183, 172, 325

Common gels found in ColorSource Deep Blue
Roscolux 384, 385, 382, 059, 358, 347, 049, 349, 046, 124, 027, 120
Lee 126, 049, 798, 707, 181, 071, 120, 716

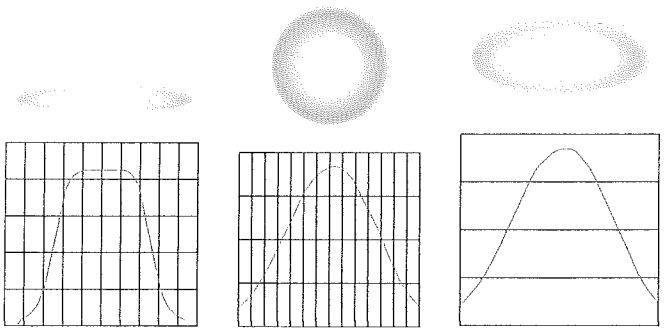
ADDITIONAL ORDERING INFORMATION

Secondary Lens Options

MODEL	DESCRIPTION: The following lenses are cut for ColorSource luminaires and create round, linear or oblong field patterns as described below. These lenses are not sized for use in Selador® Classic fixtures.	
Narrow Linear Field	Note: This is the same material as Selador Classic lenses	
SELLVN-7.5	7.5" Very Narrow lens	Linear lenses may be combined to create desired field size
SELLN-7.5	7.5" Narrow lens	
SELLM-7.5	7.5" Medium lens	
SELLW-7.5	7.5" Wide lens	
SELLEW-7.5	7.5" Extra Wide lens	
Round Field		
SELRVN-7.5	7.5" Very Narrow lens (round field)	
SELRN-7.5	7.5" Narrow lens (round field)	
SELRM-7.5	7.5" Medium lens (round field)	
SELRW-7.5	7.5" Wide lens (round field)	
Oblong Field		
SELON-7.5	7.5" Narrow lens (oblong field)	
SELOM-7.5	7.5" Medium lens (oblong field)	
SELOW-7.5	7.5" Wide lens (oblong field)	

Desire lenses compared to Source Four PAR EA

Typical Lens Field Profiles



Narrow Linear Round Oblong

Power Consumption at Full Intensity

MODEL	VOLTAGE (V)	CURRENT (A)	WATTS
ColorSource PAR	120 / 240	0.75 / 0.4	90/89

NOTES ABOUT LED LUMINAIRES

All LED sources experience some lessening of light output and some color shift over time. LED output will vary with thermal conditions. Thermal conditions can be affected by ambient temperatures and orientation. Based on the LED manufacturer's B50 L70 specification, a ColorSource luminaire will achieve ~70% of its initial output after 55,000 hours of typical usage. In individual situations, LEDs will be used for different durations and at different levels. This can eventually lead to minor alterations in color performance, necessitating slight adjustments to presets, cues or programs.

CONTROL

DMX Input Channel Profiles

DMX Profile	DMX Channels	Channel Assignments	Notes
5ch-Default	5	1-INT 2-Red 3-Green 4-Blue 5-Strobe	
RGB	3	1-Red 2-Green 3-Blue	
1ch	1	1-INT	This mode controls the intensity of Preset 1
Direct	6	1-INT 2-Red 3-Green 4-Blue/Indigo* 5-Lime 6-Strobe	*Original ColorSource PAR fixture uses blue in channel 4; Deep Blue ColorSource PAR fixture uses indigo in channel 4.

PHYSICAL

ColorSource PAR Dimensions

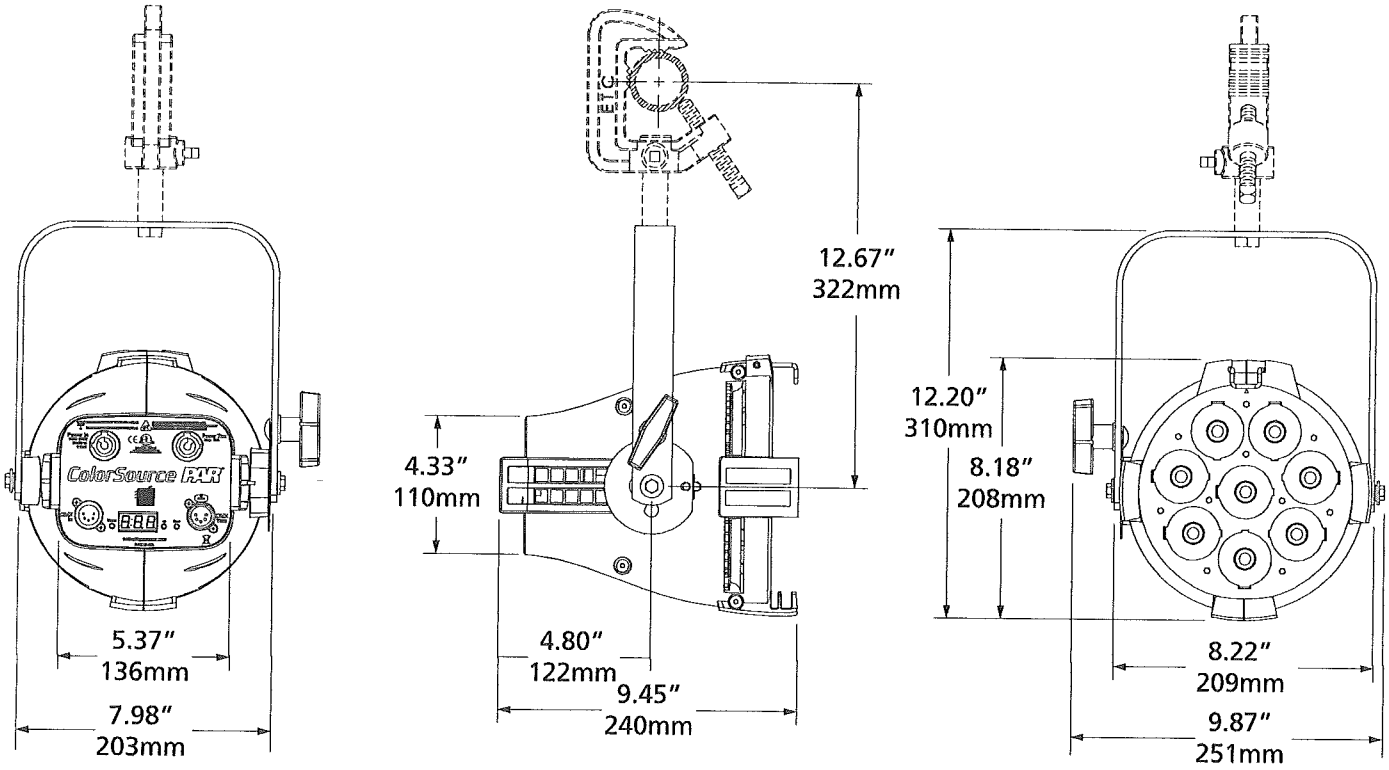
HEIGHT		WIDTH		DEPTH	
inches	mm	inches	mm	inches	mm
12.20	310	7.98	203	9.45	240

* Does not include mounting hardware

ColorSource PAR Weights

WEIGHT*		SHIPPING WEIGHT	
lbs	kgs	lbs	kgs
8.3	3.77	10.1	4.59

* Does not include mounting hardware

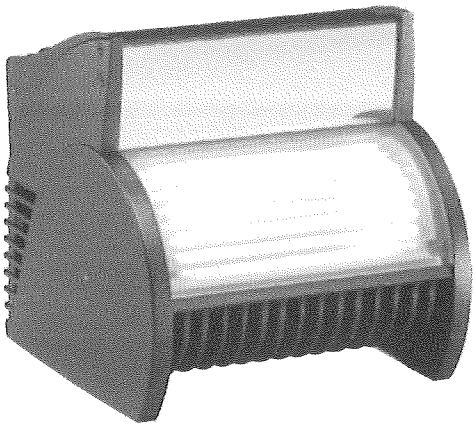


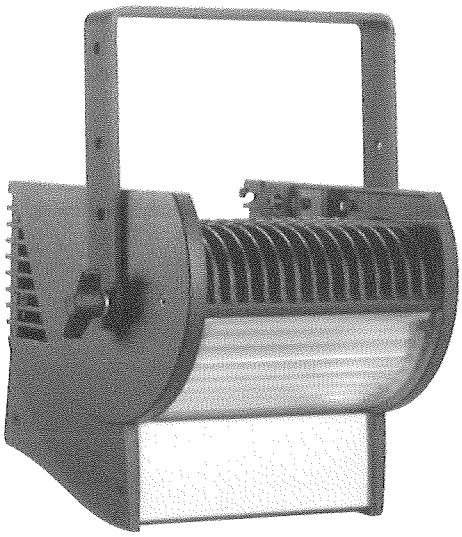
Corporate Headquarters • 3031 Pleasant View Rd, PO Box 620979, Middleton WI 53562 0979 USA • +1 608 831 4116
London, UK • Unit 26-28, Victoria Industrial Estate, Victoria Road, London W3 6UU, UK • +44 (0) 20 8896 1000
Rome, IT • Via Pieve Torina, 48, 00156 Rome, Italy • +39 (06) 32 111 683
Holzkirchen, DE • Ohmstrasse 3, 83607 Holzkirchen, Germany • +49 (80 24) 47 00-0
Hong Kong • Room 1801, 18/F, Tower 1 Phase 1, Enterprise Square, 9 Sheung Yuet Road, Kowloon Bay, Kowloon, Hong Kong • +852 2799 1220 **Web** • etcconnect.com •

ColorSource® CYC

ColorSource Series

100V 115/120V





GENERAL INFORMATION

The ColorSource CYC is a dedicated cyclorama fixture designed with the sole purpose of creating beautiful, smooth washes of light on a cyclorama or wall. And it delivers! This is the first ETC fixture to use this innovative five-color mix of red, green, blue, lime, and indigo for expanded range and color control.

PRODUCT FEATURES

- All LED (RGBI-L)
- Rich, bright light
- Fanless operation
- Stand-alone presets and sequences
- Simple setup and user interface

ORDERING INFORMATION

ColorSource CYC

MODEL	DESCRIPTION
CSCYC	ColorSource CYC fixture, black

Color Options: Fixture ships standard in black. For additional colors please use the below color code suffix:

Add -1 for white or -5 for silver

Notes: C-clamp sold separately

COLORSOURCE CYC SHIPS WITH:

- Hanging yoke
- Power cable

PRODUCT SPECIFICATIONS

Source

LED Details	42 Lumileds LUXEON C LEDs
Max Lumens	4117
Lumens Per Watt	31
L70 Rating (Hours to 70% output)	50,000 hours (estimate pending testing data)

Color

Colors Used	Red, green, blue, indigo and lime
Color temperature range	Variable
Calibrated Array	Yes
Red Shift	No

Optical

Beam angle range	N/A (asymmetrical)
Gate size	N/A
Aperture size	N/A
Pattern projection	No
Pattern size	N/A
Camera flicker control/Hz range	1,200 Hz (default) and 25,000 Hz (via RDM)
Notes	The ColorSource CYC has a built in accessory for spill control

Control

Input method	DMX-512 via 5-pin XLR or RJ45 connector
Protocols	DMX
Modes (Footprint)	5 channel- IRGBS (5) Direct- IRGBILS (7) 1 channel- I (1) RGB- RGB (3)
RDM configuration	Yes
UI type	7-segment address display
Local control	Yes
Onboard presets	Yes (12)
Onboard sequences	Yes (5)
Onboard effects	No
Fixture to fixture control	Yes
Notes	Local level control via UI

Electrical

Voltage range	100V-240VAC, 50/60Hz
Input method	powerCON in and thru
Inrush	39A (first half-cycle) at 120V
Fixtures per circuit	9 (20A switched circuit, R20 module or similar)
Wattage (Typical/Standby)	133W/1.4W
Current draw	1.11A at 120V

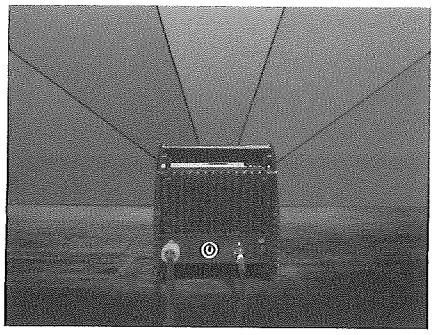
Thermal

Ambient operating temp	0-40° C (32-104° F)
Fan (controllable)	No (N/A)
Droop compensation	Yes
dB range	18.5dBa average at 1m
BTUs/hour	418

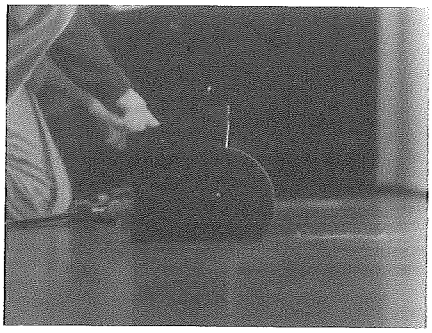
Physical

Materials	Die-cast aluminum and plastic
Color options	Black, white, silver or custom color
Mounting options	Yoke and floor
IP rating	IP-20
Weight	10.3 lbs (4.67 kg)
Included accessories	Hanging yoke, power cable
Notes	See accessories list for power cable options

PRODUCT FEATURES



UNIQUE 5-COLOR ARRAY
ColorSource CYC uses a unique blend of red, green, blue, indigo and lime LEDs

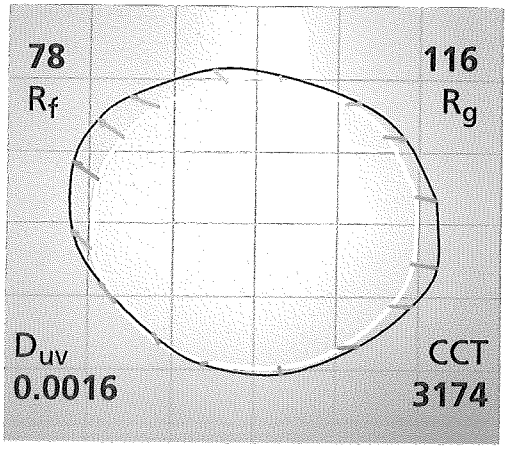


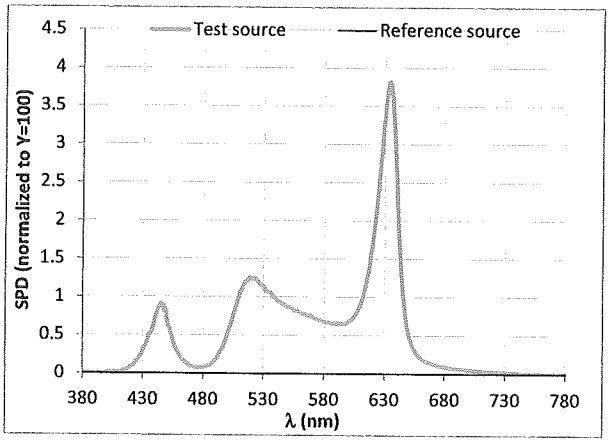
COMPACT DESIGN
The ColorSource CYC was designed to fit onto even the tightest of stages

FAN-FREE
No fan means a quieter stage

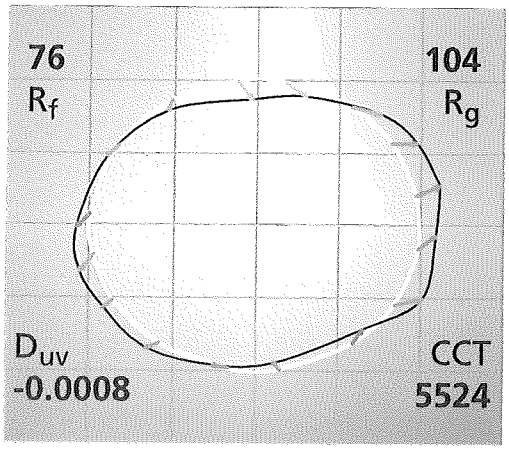
COLOR METRIC INFORMATION

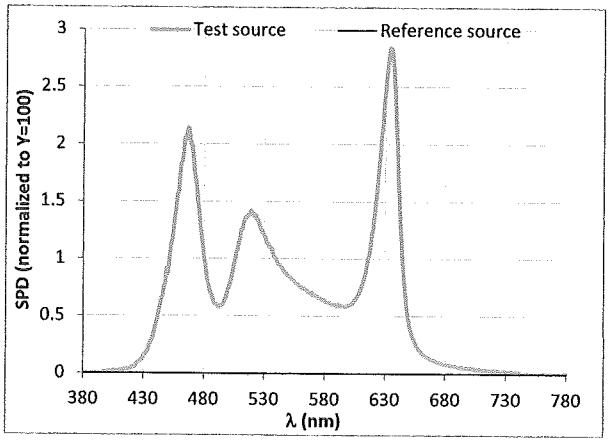
TM-30-15 3200K - COLORSOURCE CYC





TM-30-15 5600K - COLORSOURCE CYC





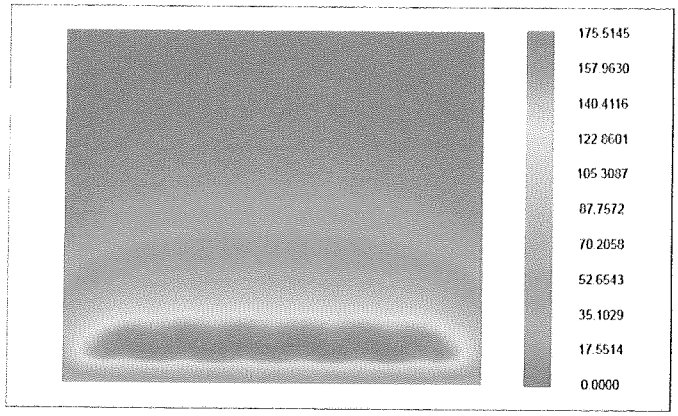
COLOR METRIC INFORMATION

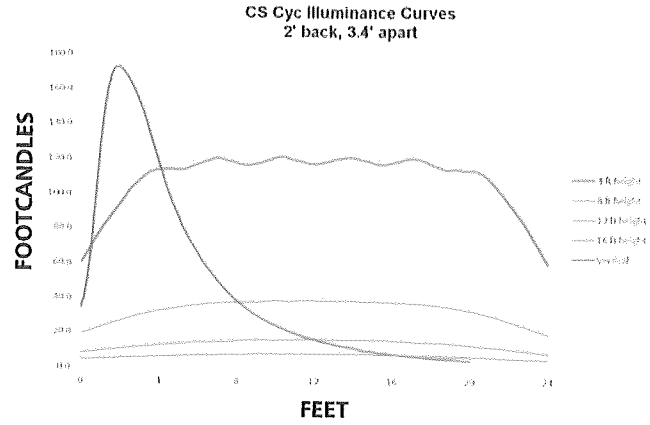
Additional Color Metrics

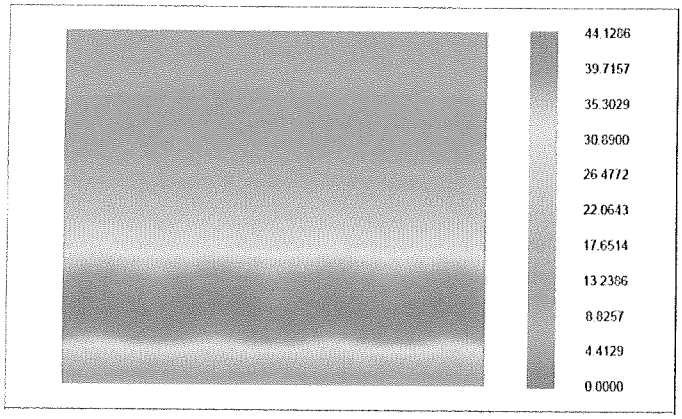
	CS CYC 3200K	CS CYC 5600K
CRI R_a (R_9)	72 (2)	72 (-42)
TLCI	52	68

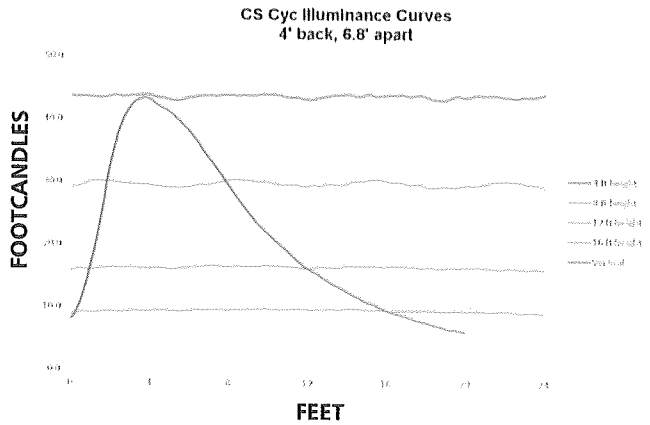
PHOTOMETRICS

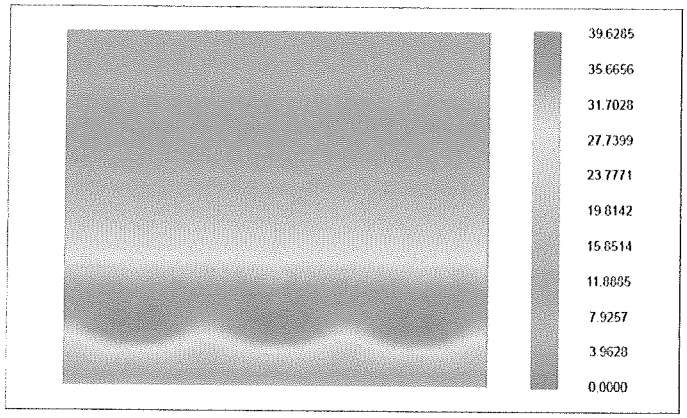
Numerical values represent footcandles.

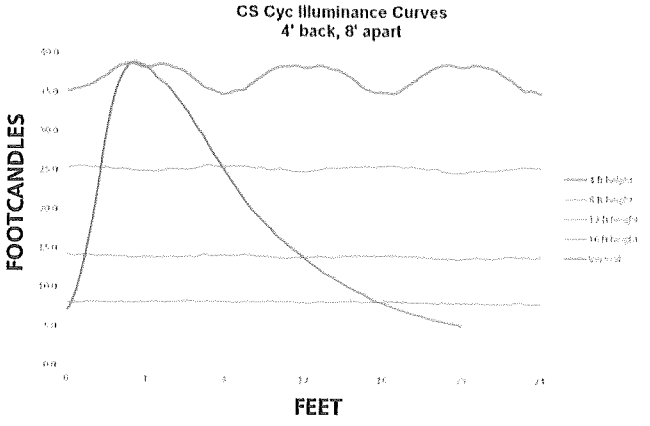












ADDITIONAL ORDERING INFORMATION

Accessories

MODEL	DESCRIPTION
400SC	Safety Cable
400CC	C-Clamp
DPA-A	5' powerCon to parallel blade U-ground (Edison) connector
DPA-B	5' powerCon to 20A two-pin and ground (stage-pin) connector
DPA-C	5' powerCon to grounded 20A twistlock connector
DPA-X	5' powerCon to bare-end power input lead
DPJ-5	5' powerCon to powerCon fixture to fixture jumper
DPJ-10	10' powerCon to powerCon fixture to fixture jumper

NOTES ABOUT LED LUMINAIRES

All LED sources experience some lessening of light output and some color shift over time. LED output will vary with thermal conditions. Thermal conditions can be affected by ambient temperatures and orientation. Based on the LED manufacturer's B50 L70 specification, a ColorSource CYC luminaire will achieve ~70% of its initial output after an estimated 50,000 hours of typical usage*. In individual situations, LEDs will be used for different durations and at different levels. This can eventually lead to minor alterations in color performance, necessitating slight adjustments to presets, cues or programs.

*Note: Life tests are currently underway. Results are pending.

PHYSICAL

ColorSource CYC Dimensions

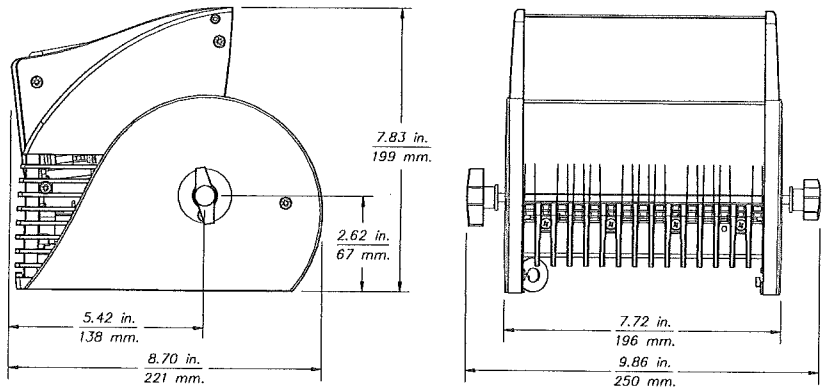
MODEL	HEIGHT		WIDTH		DEPTH	
	inches	mm	inches	mm	inches	mm
ColorSource CYC (Floor)	7.83	199	9.86	250	8.70	221
ColorSource CYC (Hang)	11.97	304	9.86	250	8.70	221

ColorSource CYC Weights

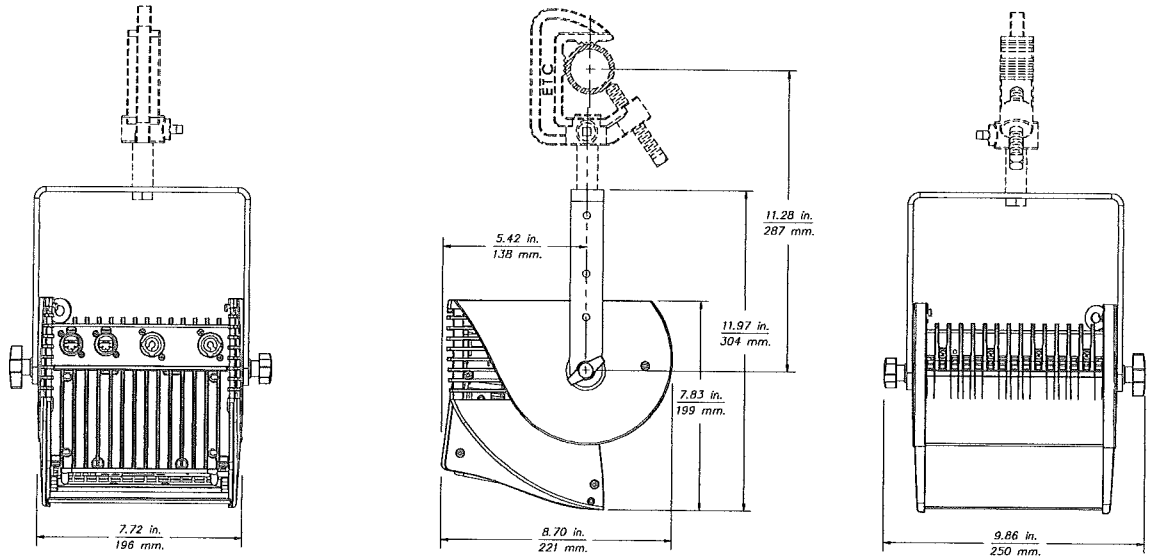
MODEL	WEIGHT*		SHIPPING WEIGHT	
	lbs	kgs	lbs	kgs
ColorSource CYC	10.3	4.67	12.9	5.85

*Without mounting hardware

FLOOR



HANG



Corporate Headquarters · 3031 Pleasant View Rd, PO Box 620979, Middleton WI 53562 0979 USA · +1 608 831 4116
London, UK · Unit 26-28, Victoria Industrial Estate, Victoria Road, London W3 6UU, UK · +44 (0) 20 8896 1000
Rome, IT · Via Pieve Torina, 48, 00156 Rome, Italy · +39 (06) 32 111 683
Holzkirchen, DE · Ohmstrasse 3, 83607 Holzkirchen, Germany · +49 (80 24) 47 00-0
Hong Kong · Room 1801, 18/F, Tower 1 Phase 1, Enterprise Square, 9 Sheung Yuet Road, Kowloon Bay, Kowloon, Hong Kong · +852 2799 1220
Web · etcconnect.com ·

NDSU Student Technology Fee Action Plan Request
VI. Budget

(double-click on the form to begin entering data)

1.	**NDSU ORGANIZATION OR UNIT** **Department of Theatre Arts**
2.	**PROJECT DIRECTOR(S)** **(Must be NDSU faculty or staff)** **Mark Engler**

3.	**SALARIES AND WAGES**			
	Personnel description	**Number employed**	**Number of months**	**Funds Requested**
	A. Staff			
	B. Graduate students			
	C. Undergraduate students			
4.	**TOTAL SALARIES AND WAGES**			$0.00
5.	**FRINGE BENEFITS**			$0.00
6.	**TOTAL SALARY, WAGES AND BENEFITS**			$0.00

7.	**EQUIPMENT**	$44,800.00
	Describe Equipment specifics in the Budget Justification section	

8.	**MATERIALS AND SUPPLIES**	$0.00
	Describe Materials and Supplies specifics in the Budget Justification section	

9.	**TOTAL TECHNOLOGY FEE REQUEST**	$44,800.00

10.	**MATCH (Describe in Match Section)**	$0.00

11.	**TOTAL PROJECT EXPENDITURE**	$44,800.00

8. NDSU Student Technology Fee Action Plan Request

VII. Budget Justification

Describe how you arrived at the budget totals in Section VI, Budget.

You are expected to follow all applicable university policies and procedures regarding salary expenditures.

You are expected to follow the state-approved purchasing guidelines when purchasing materials and supplies.

- Equipment: List name, estimated cost and quantity of each item and explain why it is important to the project. Include installation and maintenance costs in your estimates.

  A quote is attached for the requested equipment. At least two more quotes will be obtained before purchasing as per University policy. $500 has been added to request to cover shipping.

  Equipment listed in the quote:

  1. ColorSource PAR lights, $9,150.00 for 15 lights
  2. Diffusers for the PAR Lights. Diffusers spread the light beam and give the lights a softer more even edge. They come in wide, medium, narrow, and very narrow diffusions. They give the lights more flexibility in where they can be hung in the theatre.
     a. $375 for 15 wide diffusors
     b. $375 for 15 medium
     c. $375 for 15 narrow
     d. $375 for 15 very narrow
  3. C-Clamps are used to hang the lights. They are a required accessory. $315 for 21 clamps
  4. Colorsource Cyc lights. $7,284.00 for 6 lights
  5. Releve Spotlights. $19,036.00 for 4 lights. These are the most expensive but are the most versatile. Automated fixtures have the most tech in them and are priced accordingly. They are also the most complicated to program so require more training to operate.
  6. Ion Xe light control console. $7016
  7. Shipping: $500 (estimate). The department would cover any additional shipping costs above $500.

- Materials and Supplies: List name, estimated cost and quantity for each non-equipment items and explain why it is important to the project.

NDSU Student Technology Fee Action Plan Request

VIII. Budget Match

1. Attempted Budget Matches:

2. Actual Budget Matches:

3. Additional Budget Match information: