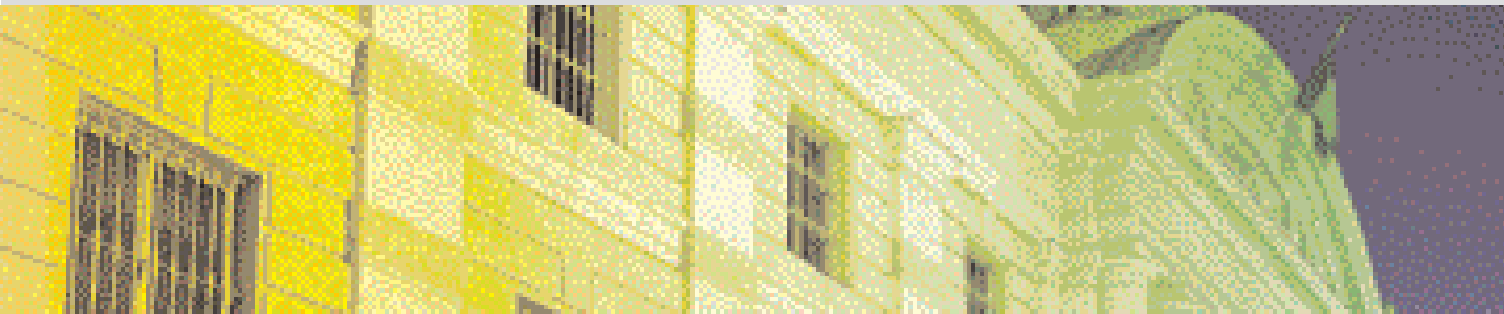# THORN

North Star Lighting

Contrast Spectra

Adding dynamic colour to floodlighting

Contrast Spectra C1

Ideal for illuminating facades and structures up to 9m high
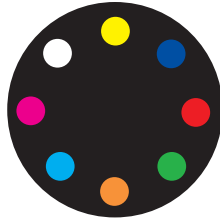

Colour Change System: Rotary Dichroic Disc

A rotating disc containing 8 different dichroic filters. The disc rotates alternately clockwise then anti-clockwise through the following colours:

1. Yellow
2. Blue
3. Red
4. Green
5. Orange
6. Cyan
7. Magenta
8. White

(This is the order in which the colours are exposed when the disc rotates in a clockwise direction)


If a particular colour, or number of colours, is not required, the relevant dichroic filter can be quickly by-passed through simple programming. These colours may easily be 're-instated' at a later date if the installation requirements change.

RDD Programmer for Contrast Spectra C1

This is a very simple programming unit located within an IP65 rated aluminium housing, and is designed to operate rotary dichroic disc systems. Programming is effected by the manipulation of a set of dip-switches, each corresponding either to an individual colour, colour change time or exposure time. For spectrasoft software and combinations with C2 options see page 6.
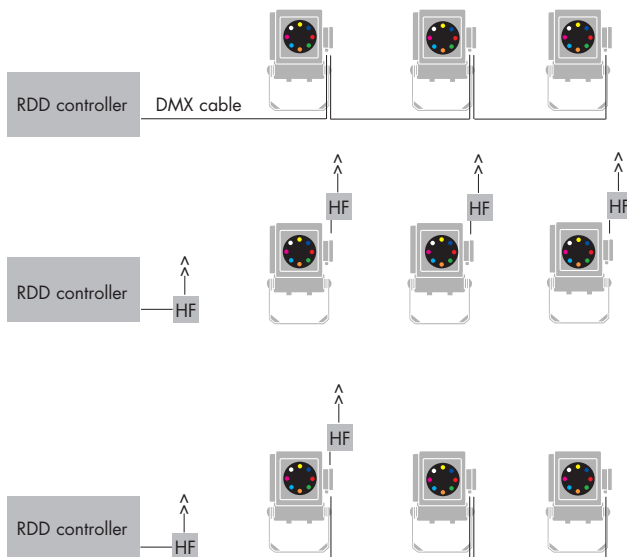
Program Transmission Options

Programming Options

By using remote programmers (or software), programming can be performed in easily accessible areas. Access to the projectors themselves is not necessary, providing they have been correctly addressed during installation.

Option	With RDD Programmer	With Spectrasoft
Change Speeds	2 Options	Unlimited No. of Options
	1 sec / 4 sec	Unlimited No. of Timings
Exposure Times	4 Options	Unlimited No. of Options
	5 / 10 / 20 / 40 secs	Unlimited No. of Timings
No. of addresses	1	128

For further information see page 6.

Lamps
150W CDM-SA/T ceramic metal halide, cap: G12 6000 hours, 4200K, 12,900 lumens

Materials/Finish
Body and side mounted addressing box: die cast aluminium, grey powder coat finish.
Lamp holder cover: aluminium, grey powder coat finish.
Reflector: specular aluminium

Installation/Mounting
Floodlight is fully adjustable on a short stirrup. Aiming simplified by indicator on stirrup, locked via central 8mm⁻ Allen screw. Easy access to lamp via two Allen screws. Lamp replacement possible without removing attachments. Supplied complete with control gear. Control gear compartment, with rear access panel, fixed below body. Entry via two Allen screws. Cable gland for 7.5-13mm^2 cable. Additional knock-out provided for through wiring.
Address box equipped with 2 No. cable entry glands for DMX NIP cable loop-in loop-out facility

Standards
Designed and manufactured to comply with EN 60598.
Electrical Class I
IP65 CE
IK08 (5 joules) shock resistant

Specification
To specify state:
150W metal halide floodlight with integral control gear, integral Rotary Dichroic Disc colour change system with 8 dichroic colour filters and integral projector addressing system. Die cast aluminium body, grey powder coat finish. Toughened front glass. Sealed enclosure IP65 and IK08 (6 joules) shock resistant. Stirrup mounted.
As Thorn Contrast Spectra C1
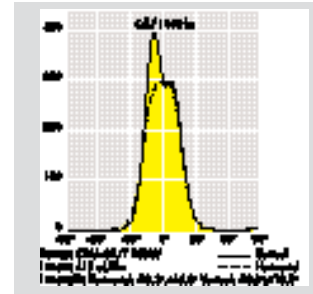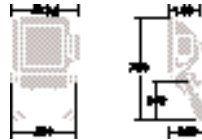
Ordering Guide

Projectors Lamps to be ordered separately

Description	Weight (Kg) EAN Code	EAN Code 230V	EAN Code 240V
Contrast Spectra C1 complete with control gear	15.5	3413832138518	3413832146674

Programme Control & Transmission

| Description	EAN Code
RDD programmer	3413833163786
Spectrasoft CD	3413833165018
Memory box (for software programming)	3413833165025
Signal booster (for use with DMX cables)	3413833165032
High Frequency Emitter	Available on request
High Frequency Receiver	Available on request
Signal booster (for use with HF transmission)	Available on request

Accessories

Description	Weight (Kg)	EAN Code
Refractor Lens No.1	1.44	3413832079040
Refractor Lens No.2	1.44	3413832079057
Refractor Lens No.3	1.44	3413832079064
Part-frosted glass	1.0	3413832088981
Barn doors*	0.5	3413832079187
Fixed Louvre	1.0	3413832079170
Adjustable Louvre	1.0	3413832079163
Wire Guard	0.5	3413832079248
Visor	0.7	3413832084242
Long stirrup	0.7	3413832111498

* Cat. No. Supplies one baffle (for four baffles order four items).
DMX NIP cables not supplied
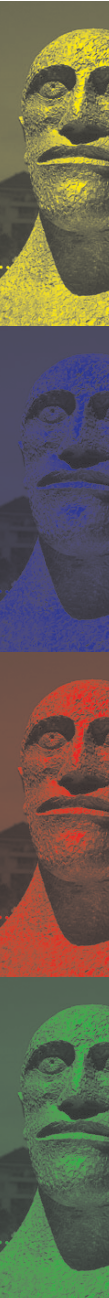
Contrast Spectra C2

This floodlight is suitable for illuminating facades and structures up to 12m high
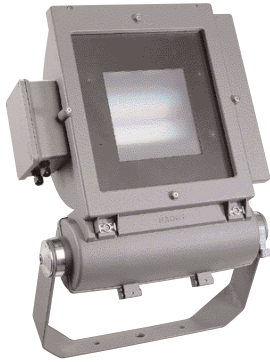
Colour Change System: CYM dichroic technology
The CYM system comprises 3 dichroic filters (Cyan, Yellow & Magenta). These filters combine and interplay to create any colour within the spectrum.62 colours are possible when using the dedicated programmer or an infinite number when using the software package


CYM Programmer for Contrast Spectra C2
The number of 'scene' possibilities available to users of CYM technology is virtually infinite. However, the CYM programmer has been developed to provide ready-made programme solutions for a wide variety of scene options, thus simplifying the programming of an advanced system.
Programming is effected by push buttons and an LED display to monitor the inputs. The unit is located in an IP65 rated aluminium housing. For spectrasoft software and combinations with C1 options see page 6.
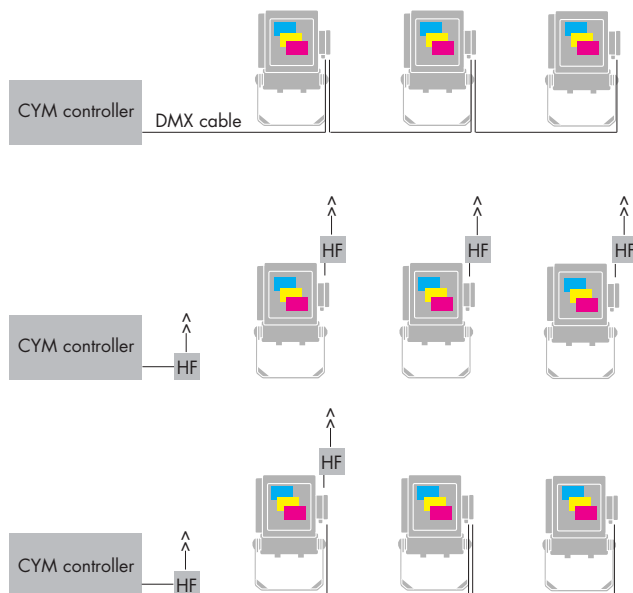
Program Transmission Options

Programming Options
By using remote programmers (or software), programming can be performed in easily accessible areas. Access to the projectors themselves is not necessary, providing they have been correctly addressed during installation.

Option	With CYM Programmer	With Specrasoft
Colours	62 Options	Unlimited No. of Options
Change Speeds	20 Options 1 sec - 55 sec	Unlimited No. of Options from 1 sec to 43 mins. Unlimited No. of Timings
Exposure Times	20 Options 1 sec - 1 hour	Unlimited No. of Options from 1 sec to 43 mins. Unlimited No. of Timings
Max. No.of addresses	6	84

Lamps
▭ 250W HQI-TS / D UVS, cap: FC2. 6000 hours, 5100K, 20,000 lumens

Materials/Finish
Body and side mounted addressing box: die cast aluminium, grey powder coat finish.
Reflector: glass (faceted mirror reflector)

Installation/Mounting
Floodlight is fully adjustable on a short stirrup. Aiming simplified by indicator on stirrup, locked via central 8mm^2 Allen screw. Easy access to lamp via two Allen screws. Lamp replacement possible without removing attachments. Supplied complete with control gear. Control gear compartment, with rear access panel, fixed below body. Entry via two Allen screws. Cable gland for 7.5-13mm^2 cable. Additional knock-out provided for through wiring.
Address box equipped with 2 No. cable entry glands for DMX NIP cable loop-in loop-out facility

## Standards
Designed and manufactured to comply with EN 60598.
Electrical Class I
◆⚠⚠ IP65 CE
IK08 (5 joules) shock resistant

Specification
To specify state:
250W metal halide floodlight with integral control gear, integral CYM colour change system and integral projector addressing system. Body made of die cast aluminium, grey powder coat finish. Toughened front glass. Sealed enclosure IP65 and IK08 (6 joules) shock resistant. Stirrup mounted.
As Thorn Contrast Spectra C2
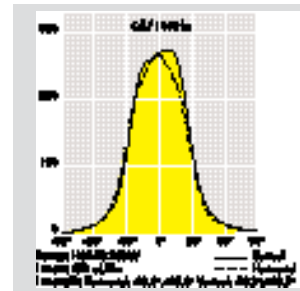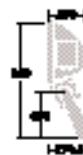
Ordering Guide

Projectors Lamps to be ordered separately

Description	Weight (Kg)	EAN Code 230V	EAN Code 240V
Contrast Spectra C2 complete with control gear	24.7	3413832138525	3413832146681

Programme Control & Transmission

Description	EAN Code
CYM programmer	3413833163793
Spectrasoft CD	3413833165018
Memory box (for software programming)	3413833165025
Signal booster (for use with DMX cables)	3413833165032
High Frequency Emitter	Available on request
High Frequency Receiver	Available on request
Signal booster (for use with HF transmission)	Available on request

Accessories

Description	Weight (Kg)	EAN Code
Refractor Lens No.1	2.08	3413832075721
Refractor Lens No.2	2.08	3413832075738
Refractor Lens No.3	2.08	3413832075745
Part-frosted glass	1.38	3413832075752
Barn doors*	0.64	3413832075936
Fixed Louvre	1.18	3413832075592
Adjustable Louvre	1.18	3413832075622
Wire Guard	1.06	3413832075820
Visor	1.0	3413832084303
Long stirrup	1.0	3413832111511

* Cat. No. Supplies one baffle (for four baffles order four items).
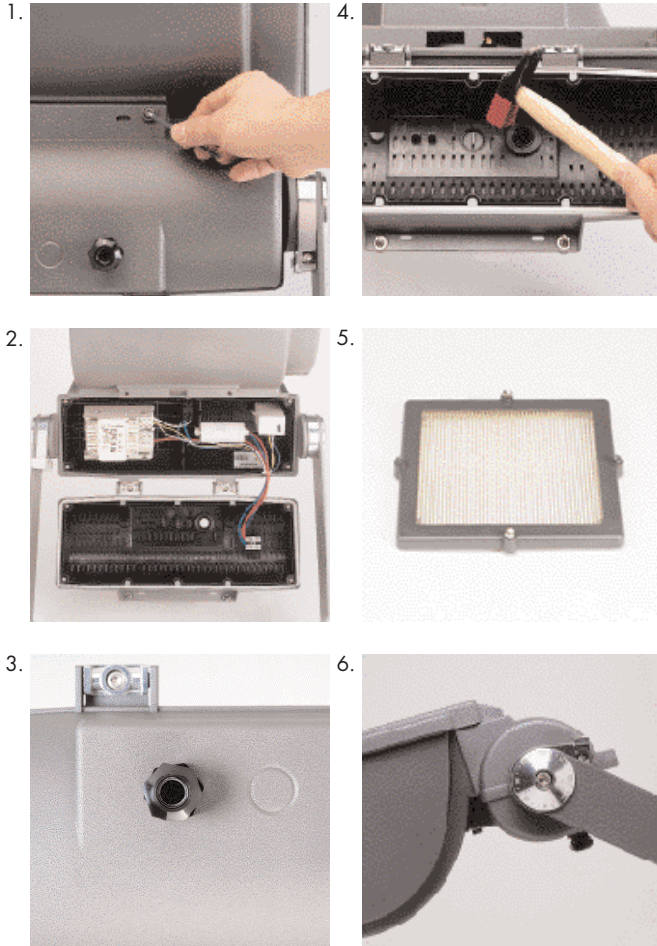DMX NIP cables not supplied.
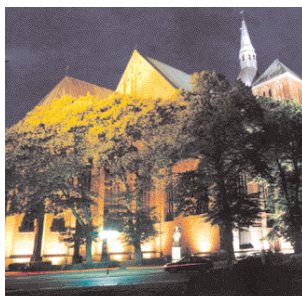
Installation/Maintenance
Programming
Terminology
Accessories

1.

4.

2.

5.

3.

6.

1 Control gear access
**& ** The control gear compartment is
2 located separately from the
optical part of the floodlight.
Access to the control gear is via
the rear door, using two Allen
key screws. A waterproof gasket
around the door ensures IP65
protection.

3 There is a knock-out for the
& installation of a second cable
4 entry if through wiring is
required. The second gland is
supplied as standard with
each floodlight.

5 Accessory mounting
All floodlight attachments are
supplied with a mounting frame
ready to install, complete with the
required two or four nickel plated
brass screws arranged
symmetrically on the face of the

frame. These screws allow
accessories to be mounted
together on top of each other.

6 Aiming
After aiming the floodlight using
the stirrup's polished aluminium
graduated scale, the position can
be set by securing the aiming
lock. The memorisation of the
position is assured by the angle
stop. This system ensures that the
floodlight does not have to be
re-aimed after maintenance.

**Access to lamp and internal
programmer**
Access to the lamp is made by
opening the front glass using the
two Allen screws on the top of
the floodlight. The design allows
the lamp to be replaced and the
programmer to be set up without
removing the accessories.

Programming

Spectrasoft for Contrast Spectra C1 and C2
Spectrasoft is capable of controlling both the RDD and CYM colour
change systems (simultaneously if required) and has been designed to
exploit the maximum potential of the more sophisticated CYM
technology. It is the ideal tool for programming both complex and
simple lighting effects, and is easy to programme. Once the
programme data has been input, it is downloaded to a Programme
Memory Box which stores and transmits the data to the projectors. The
computer is no longer required for the operation of the colour change
system, although it will be required for any programme changes.
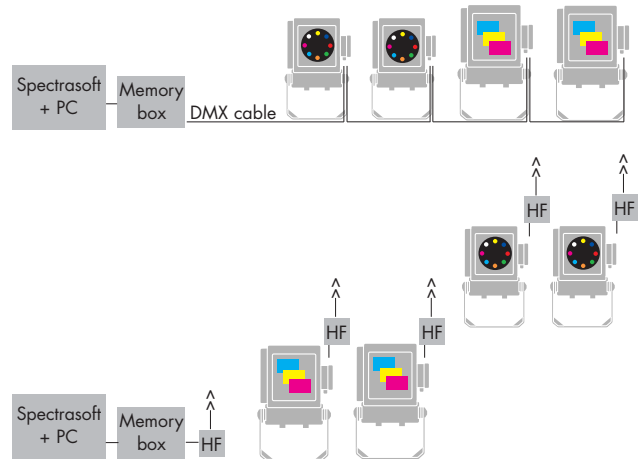
Programme Transmission
The input data is sent to the Electronic Address Cards of the projectors
by either DMX NIP cable or DMX High Frequency transmission.

Cable Transmission
The cables run from the dedicated programmer to the address box of
the first projector in the installation. The DMX cable then loops out to
the address box of the second projector.

High Frequency Transmission
This is particularly useful when replacing an existing projector with
Spectra, as no additional (and expensive) underground cabling is
required.
The programming unit is linked by DMX cable to a High Frequency
Emitter located next to the programming unit. The emitter then sends
the programme commands by High Frequency to an IP65 rated High
Frequency Receiver located next to the relevant projector, which in turn
sends the commands to the Electronic Address Card of the projector
by DMX cable.

Programming Option

Programming Unit	Programme memory box	Programme transmission system	Suitable type of Projector	No.of colours available	No. of possible exposure	No. of change times available
RDD	No	DMX Cable DMX HF	Spectra C1	8	4	2
CYM	No	DMX Cable DMX HF	Spectra C2	62	20	20
Spectrasoft	Yes	DMX Cable DMX HF	Spectra C1 and/or C2	C2: Infinite C1: 8	Infinite	Infinite

Transmission Factors

Colour	Transmission Coefficient
White	1
Blue	0.03
Yellow	0.86
Red	0.14
Green	0.13
Orange	0.50
Cyan	0.20
Magenta	0.11

Some Terminology

Exposure Time
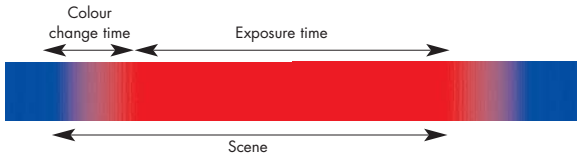The length of time that an individual colour is displayed

Colour Change Time
The length of time taken to change from one colour display to another

Scene
A 'scene' comprises
• A Colour
• A Colour Change Time
• An Exposure Time

Programming
The input of data to control the content and sequence of scenes

Programme Transmission
The transmission of the programme data to the projectors within the installation

Address
Each projector needs an address so that the programmers know where to transmit the scene data to. The address of a projector is controlled by the Electronic Address Card (EAC) which receives the commands and in turn sends the messages to the colour filter system. The EAC is located within an aluminium housing attached to the side of the projector.

Projectors which share an address will receive all the same commands from the programmer and will therefore run the same sequence and content of scenes simultaneously. In such a case the entire installation will change colour, and display the same colour, as one.

In certain instances, projectors (or groups of projectors) within the same installation and programmed from a single programming unit, can be given individual addresses, thus receiving unique scene commands and allowing many different colours and dramatic effects to be displayed simultaneously.
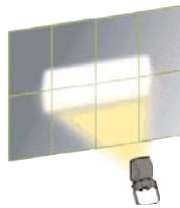
Accessories
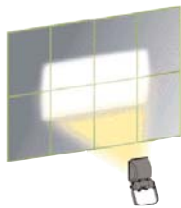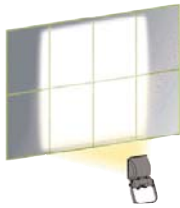
Refractor Lens No.1   *Refractor lens No.2*   *Refractor Lens No.3*

Barn doors   *Fixed louvres*   *Adjustable louvres*   *Wire guard*   *Visor*

Contrast

Dedicated to outdoor architectural lighting. 20W to 400W lamp options in one family

Contrast R and Contrast C
• Body in die cast aluminium
• Grey powder coated finish, RAL colour versions available on request
• Discharge floodlights available in 3 sizes
• A wide selection of front glasses and reflectors which can be rotated to give alignment of the beam profile to suit the application
• Variety of attachments, including colour filters, barn doors and wire guard
• Stirrup mount allows base support for suspension
• IP65

Contrast C Wide Angle
• Based on Contrast C size 2
• Optical system specially adapted to give extra wide angle beam for building facade lighting

Pinspot and Mini Pinspot
• The smallest in the Contrast range
• Available in 2 sizes, Pinspot 140mmø front face, Mini Pinspot 100mmø front face
• Mains voltage discrete floodlights for use with Ceramic Metal Halide and Tungsten halogen lamps all within bodies sealed to IP65
• These low power floodlights with small fixings can be hidden in corners of hedges making them particularly suited to heritage or listed buildings, highlighting architectural details, sculptures, foliage and signage

For full details of the Contrast and Contrast Pinspot ranges, please refer to our catalogue.

7

THORN

Lighting people and places

North Star Lighting, Inc.

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Fax: (61) 3 9720 8233
E-mail: enquiries@thornlight.com.au
Website: www.thornairfield.com

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Website: www.thornlight.pl

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Fax: (65) 6745 7707

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Fax: (46) 418 265 74
E-mail: thorn@thornlight.se
Website: www.thornlight.se

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Fax: (971) 4294 8838
E-mail: lighting@emirates.net.ae

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Fax: (44) 1708 776238
E-mail: info@thornlight.com
Website: www.thornlighting.co.uk

Thorn Airfield Lighting
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Romford, Essex RM7 7PP, United Kingdom
Tel: (44) 1708 776289
Fax: (44) 1708 776285
E-mail: airfield@thornlight.com / thornagluk@aol.com
Website: www.thornairfield.com

www.thornlighting.com