



# USER MANUAL

## V2.1





“Quite simply the most amazing, beautiful, versatile, portable, continuous lights I’ve ever used” *Jason Lanier - Sony Artisan of Imagery*



- 02 -



# ROTOLIGHT NEO

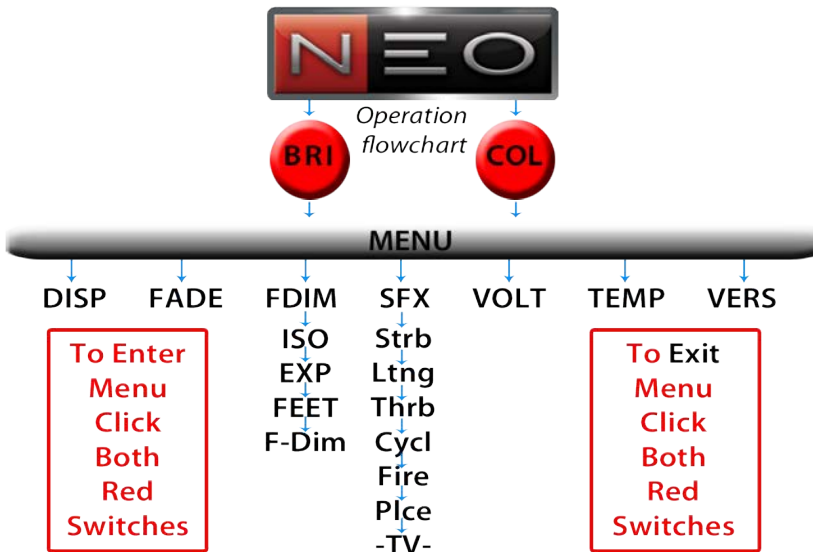
## USER MANUAL



### List of Box Contents

- 1) Rotolight NEO
- 2) NEO Filter holder
- 3) Rotolight Belt Pouch
- 4) Accessory Shoe Adapter
- 5) AC Adapter
- 6) AC Cord
- 7) NEO Standard 4 Piece Filter Kit

Thank you for purchasing Rotolight NEO! We hope you enjoy using it as much as we enjoyed making it! Please register and activate your warranty at [www.rotolight.com/register](http://www.rotolight.com/register)



## PAGE CONTENTS

- p04/05 Neo Basic Operation (Power, Brightness, Colour, Reset)
- p06/07 Advanced operation, Display, Designer Fade™
- p07 True Aperture Dimming™
- p08/09 Cinematic Special Effects, Warning - Health Hazards.
- p10/11 Strobe, Lightning, Throb, Cycle, Fire.
- p12/13 SFX continued: Police, Television. VOLT , TEMP
- p14/15 VERS(firmware version) , Filters, Mounting, Batteries
- p16 Warranty and Copyright information, Optional Accessories
- p17 Images by Jason Lanier, lit by NEO
- p18/19 Polar Pattern, CRI, Tech Specs, TLCI, Photometrics, Contact



## NEO BASIC OPERATION

To operate NEO you will find two red rotary controls, which are also switches, and a DC on/off switch, these are all located on the rear of NEO.



### POWER

To power up NEO click the power switch (located next to the DC input Jack)

NEO can be powered by 6 x AA Batteries or rechargeables, or from a DC source in the range of 6v-15v (i.e. optional Car 12v Socket, D-TAP from a broadcast battery), or from the supplied AC Adapter. When connecting a power source to the DC input socket, for instance mains power or utilizing the D-Tap connection, the AA batteries are automatically disconnected, thus saving AA battery power. NB if you are connecting an external DC source make sure the power is the correct polarity, to avoid damaging your NEO.

On power up, you will see 'ROTOLIGHT NEO' scroll across the screen, you can interrupt this anytime by operating one of the control knobs.

To Power NEO Down, click the power switch again. NB – NEO stores all the user settings in non-volatile RAM so it will remember your last used settings.



### ('BRI') BRIGHTNESS

You can adjust the brightness output of NEO by rotating the left control knob.

If you rotate the knob quickly it will speed up the data input. You can press and rotate to deliberately adjust the brightness in steps of 10% (Fast Mode). Simply rotating the knob will adjust the brightness in steps of 1%.

NEO has a dimming range of 0% -100% and is completely flicker free at any brightness level.



(NB There is a special mode called 'True Aperture Dimming' (F-DIM), available in the MENU section, which will display the brightness as an F-Stop, based on your camera exposure settings – see 'True Aperture Dimming')





### ('COL') COLOUR

You can adjust and accurately display the Colour Temperature (CCT) of NEO by rotating the right control knob. If you rotate the knob quickly it will speed up the data input. You can press and rotate to deliberately adjust the colour in steps of 100kelvin (Fast Mode). Simply rotating the knob will adjust the brightness in steps of 10 kelvin.

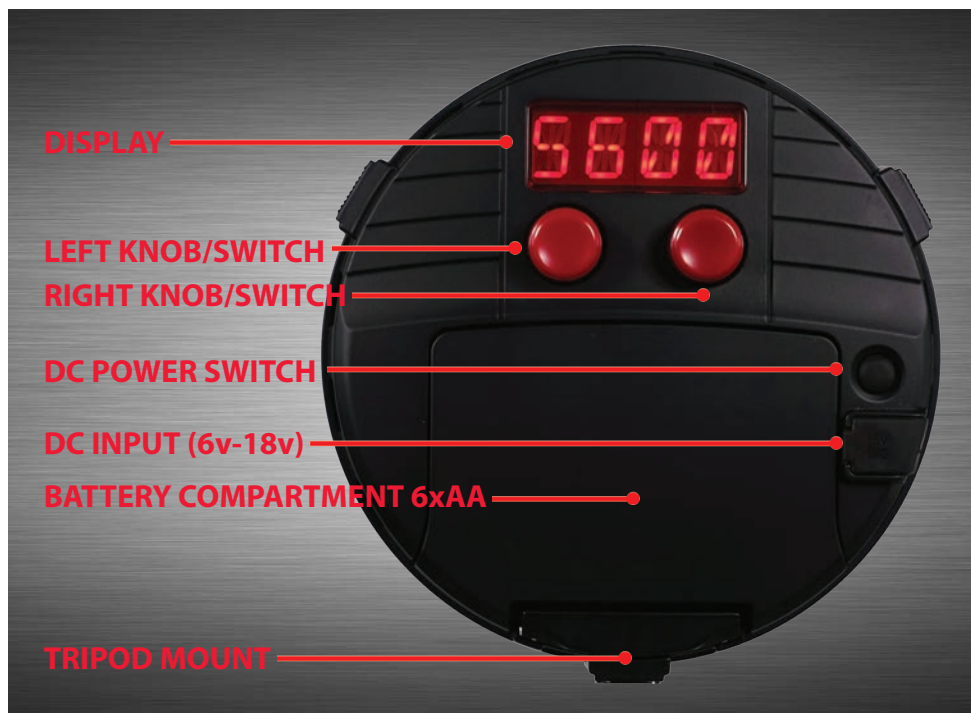
NEO has a Colour Temperature Range of 3150 kelvin (Tungsten) up to 6300 kelvin (direct daylight).



NEO has a special technology called 'Dynamic Drift Stabilisation' which maintains the colour temperature through the entire dimming range.

### RESET

You can reset all the user parameters in NEO's non-volatile memory by holding down one of the red control switches whilst simultaneously powering NEO ON. The word 'ZERO' will be displayed, select Y for yes (reset all data), or N for NO.





## ADVANCED OPERATION ( MENU )

You can enter the MENU by pressing both red control switches together (or clicking and holding down the left switch followed by the right control switch). If you wish to leave MENU, you can return to the basic operation (BRI / COL) by pressing both control switches together again.

In the MENU there are seven optional submenus , which you can select by rotating the left knob:- 'DISP' , 'FADE' , 'F-DIM' , 'SFX' , 'VOLT' , 'TEMP' , 'VERS'

You can enter your selected function by clicking the Right switch

You can leave the selected function by clicking the Left switch, alternatively you can return to the basic operation mode (BRI /COL) at any time by pressing both switches together at the same time.



### ('DISP') DISPLAY

Allows the display to be set to low brightness or 'off' to reduce power consumption/increase battery life or for discrete usage on set.

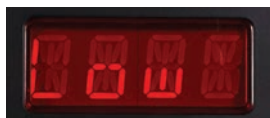
Click the left switch to enter 'DISP'



Rotate either the left or right knob to select the display mode:-

'High' – the display will be at full brightness

'Low' – the display will be dim, reduced power consumption



'Off' – The display will automatically switch off after 5 seconds unless a control is operated for maximum power saving.



Click the left switch to return to MENU, alternatively you can return to the basic operation (BRI / COL) by pressing both control switches together.



### ('FADE') DESIGNER FADE™

(Programmable fade up / fade down production effects for interview/ ENG applications.)

Scroll to 'FADE'

Click the right switch to enter 'FADE' mode





Rotate the right knob to adjust the fade duration  
(It will display DN (=fade down) followed by a numerical value 'X's where X = seconds of fade duration)

The fade can be from 1 to 12 seconds long.

Please note, the FADE will be a fade to zero from the current brightness level the NEO is set to (ie if brightness is currently 80%, then fade will be 80%-0% over custom time duration).

(NB: both the last used brightness setting and fade duration parameter are stored in non volatile memory)  
Once you have selected the length of the fade, Click the right switch to perform the fade.



You will notice the display now shows UP X s (i.e. it will now fade up to your previous brightness setting over 'X' seconds)

To fade up click the Right switch again

If you only want Fade downs' use the Left switch to click out of FADE and click back in – use the right switch to perform the Fade.

Click the left switch to return to MENU, alternatively you can return to the basic operation menu (BRI / COL) by pressing both control switches together.



### **('F-DIM') TRUE APERTURE DIMMING™**

(Shows the brightness setting as an accurately calculated aperture (F-Stop) for your subject at a given distance.)

Cycle the menu to 'F-DIM' then Click the right switch to enter 'F-DIM' mode.



Rotating the left knob cycles through the available user parameters:-



'ISO' (your camera ISO setting), 'EXP' (your camera shutter speed) and 'FEET' (the distance from the light to your subject in feet)



Rotating the right knob will adjust the selected user parameter (ISO/EXP/FEET)

Clicking the right switch will enter the 'F-Stop Dimming Display' where the brightness is dynamically displayed as an aperture or 'F-Stop





(True Aperture Dimming continued)

Adjust the brightness with the right knob and the display will show the adjusted F-Stop aperture for your camera.

(Please note the 'True Aperture Dimming™' algorithm calculates the F-Stop based on the NEO Brightness setting, your camera's ISO and shutter speed, the distance to the subject AND compensates for the skin contrast of the subject)



To re-adjust the last selected parameter (usually FEET) click the right switch, make the adjustment, then click the right switch again to return to the 'F-Stop Dimming Display', alternatively rotate the left knob to select a different parameter to edit, and then click the right switch to re-enter 'F-Stop Dimming Display'.



This enables you to effectively 'bookmark' the user parameter that is dynamically changing during your shoot (ie distance to subject), and without needing to re-meter the shot, update the parameter and calculate the revised F-STOP, allowing you to work fast.

Click the left switch to return to MENU, alternatively you can return to the basic operation (BRI / COL) by pressing both control switches together.



### (SFX) CINEMATIC SPECIAL EFFECTS

In collaboration with Stefan Lange, DOP and Visual FX Veteran, we have created an arsenal of Cinematographic Special FX (CineSFX™), these production tools are designed to complement your feature/ music video/short film.

#### SFX Brightness and Colour Temperature :

Please note, the current brightness level and colour temperature setting of NEO is used by SFX mode to represent the 'peak output' level of each effect, enabling accurate metering (ie if NEO is set to 75% brightness and 5600 Kelvin, then the lightning effect peak brightness level shall be 75% brightness at 5600 Kelvin).





Therefore, to ensure maximum SFX brightness, set Neo to 100% brightness and 4300 Kelvin for maximum brightness in SFX mode. To do this, you can return to the basic operation (BRI / COL) by pressing both control switches together.



**WARNING - HEALTH HAZARD – USE STROBE WITH CAUTION :** CineSFX™ mode uses Strobe Lighting effects that may pose a risk to those at risk of photosensitive seizures/ epilepsy. Manufacturer accepts no liability or responsibility for misuse of this product. You should take all precautions to pre-warn and ensure the safety of those who may come into contact with the product. If you or any of your relatives have a history of seizures or epilepsy, consult a doctor before using. If you feel unwell from using these effects, immediately discontinue use and consult a doctor. If strobe lighting is to be used in a production, warnings should be posted at the front of house or entrance doors to the set/theater as well as in a video or program, if distributed. Example: “WARNING: Strobe lights are used during this performance”. This product is not suitable for use by children of any age and is designed for professional use only.



Photo Courtesy Simon Edwards  
Guild of Television Cameramen





### ('SFX') CINEMATIC SPECIAL EFFECTS (CineSFX™)

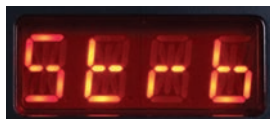
Click the Right switch to enter 'SFX'

Rotating the left knob cycles through the available 'SFX':- 'Strb' - 'Ltng' - 'Thrb' - 'Cycl' - 'Fire' - 'Plce' - 'TV'



You can activate your selected SFX function by clicking the right switch

You can leave the selected function by clicking the left switch, alternatively you can return to the basic operation mode (BRI /COL) at any time by pressing both switches together at the same time.



### ('Strb') STROBE

*The Strobe effect produces a regular flashing light, you can control the speed*

Click the right switch to activate the strobe effect

Rotate the right knob to adjust the strobe speed

(It will display XX hz , where= 'XX' = number of strobe cycles per second) The strobe range is from 1hz up to 4hz.

(NB: the last used strobe parameters are stored in non volatile memory). Rotate the left knob to adjust the 'duty cycle' (flash duration) to eliminate any issues with rolling shutter cameras. Click the left switch to exit the Strobe Menu and return to SFX Menu.



### ('Ltng') LIGHTNING

*The lightning effect simulates real lightning, it is a random effect but you can control the speed at which the lightning bursts re-occur, ideally you would set the brightness (BRI) to 100% and the colour (COL) temperature to 6000k*

Click the right switch to activate the lightning effect

Rotate the right knob to adjust the lightning speed.

(It will display XX hz which is an indication of the effect frequency)The lighting range is from 1hz up to 50hz.

Click the right switch to arm the effect and fade to black, 'Trig' will be displayed - re-Click the right switch to trigger the effect. Rotate the left knob to adjust the 'duty cycle' (flash duration) to eliminate any issues with rolling shutter cameras. (NB: the last used lightning parameters are stored





in non volatile memory). Click the left control switch to exit the Lightning effect and return to SFX Menu. (NB the duration of the lightning flashes is 20ms which is the recommended duration for cinematography, The lightning strikes come in bursts of between 2 and 8 random length pulses)



### ('Thrb') THROB

*Throb is a regular smoothly pulsing light*

Click the right switch to activate the 'Throb' effect  
Rotate either the left or right knob to adjust the 'Throb' effect frequency  
(It will display XX hz which is an indication of the effect frequency)

The Throb range is from 1hz up to 50hz. (NB: the Throb parameters are stored in non volatile memory). Click the left switch to exit the Throb effect and return to SFX Menu.



### ('Cycl') Colour CYCLE

*Cycle is a regular smoothly pulsing light which fades between the tungsten and blue LED's*

Click the right switch to activate the 'Colour CYCLE' effect  
Rotate either the left or right knob to adjust the 'Cycle' effect frequency  
(It will display XX hz which is an indication of the effect frequency)

The Cycle range is from 1hz up to 50hz. (NB: the Cycle parameters are stored in non volatile memory). Click the left switch to exit the Cycle effect and return to SFX Menu.



### ('Fire') FIRE

*Fire is a complex emulation of a burning fire and it can be tuned to your requirements. Some VFX artists like to use multiple lights with slightly different settings/gels to achieve a fire with 'dancing shadows'.*

NB Before activating the Fire effect you can meter 'NEO's output which will be your peak exposure during the Fire effect.





Click the right switch to activate the 'Fire' effect  
 Rotate either the right knob to adjust the 'Fire' effect frequency  
 (It will display XX hz which is an indication of the effect frequency – around 45hz is nice for a 'campfire')



Rotate either the left knob to adjust the 'Fire' effect depth threshold (about 25% is nice for a 'campfire')  
 (It will display XX % which is an indication of the effect depth)



Inside the fire effect there is a switcheable parameter called 'ColourSwing BLUE' which emulates the colour transition of flames going up the chimney (i.e. from yellow to blue) to activate this parameter click the right button.



To deactivate 'Colour Swing BLUE' click the right knob again and 'MONO' (Monochrome) will be displayed.  
 (NB: the Fire parameters are stored in non volatile memory)

The fire effect can be enhanced with a warm colour filter included within the optional Add on Colour FX Pack (RL-NEO-CFP) available from your dealer or [www.Rotolight.com](http://www.Rotolight.com) ('777' 'Rust' is recommended for best impact, '182' Light Red also works well, or an Amber, CT Straw or CTO filter).



### **('P100') POLICE**

*This effect is an emulation of an emergency services light – it works best by adding the 712 Bedford Blue Filter Gel included within the optional Add on Colour FX Pack.*

Click the right switch to activate the Police effect  
 Rotate either the left or right knob to adjust the Police beacon speed  
 (It will display XX hz , which will give you an indication of the effect speed)

(NB: the Police parameters are stored in non volatile memory). Click the left switch to exit the Police effect and return to SFX Menu.



### ('TV') TELEVISION

*This effect is an emulation of someone watching a TV show – it works best by adding the 116 Medium blue/green filter from the Add on Colour FX Pack.*

Click the right switch to activate the TV effect

Rotate either the left or right knob to adjust the TV effect speed (It will display XX hz , which will give you an indication of the effect speed)



Click the right switch to pause the effect / fade to black - 'Trig' will be displayed - re-Click the right switch again to Trigger the effect. (NB: the TV parameters are stored in non volatile memory). Click the left switch to exit the TV effect and return to SFX Menu.



### ('VOLT') VOLTAGE

VOLT mode will scroll display the voltage from the selected power source. (e.g '9.4V BATTERY' or '15.2V DC IN'). Please note NEO will automatically give you a warning if the voltage drops too low which indicates a battery change is needed (e.g. 'Low Battery') . NEO will also put a blinking dot on the bottom right of the current display to indicate Low Battery Voltage whilst reducing the output by progressive steps of 10% until voltage stabilises to eliminate flicker.



NEO will operate from 6V DC up to 17.5V DC. Only connect external power sources with the correct polarity and voltage to avoid serious damage to NEO.



*(In 'VOLT' mode, to check your battery performance in action, you can click the right switch and then rotate the left knob to observe the actual battery voltage during the range of dimming)*

Click the left switch to return to MENU, alternatively you can return to the basic operation (BRI / COL) by pressing both control switches together.



### ('TEMP') TEMPERATURE

Click the left switch to display the internal operating Temperature of NEO. NB: if NEO detects the battery temperature rising to 58 degrees or above, it will display 'Too Hot' (touch any knob to clear message) and automatically cut the output down to 25% to prevent overheating.

(Please use only quality battery systems inside NEO)

Click the left switch to return to MENU, alternatively you can return to the basic operation (BRI / COL) by pressing both control switches together.





## ('VERS') FIRMWARE VERSION

Click the left switch to display the firmware version installed in your NEO.

(NB The firmware can be updated if required by your Rotolight Distributor via the update port in the battery compartment)

Click the left switch to return to MENU, alternatively you can return to the basic operation (BRI / COL) by pressing both control switches together.



## FILTER INFORMATION

NEO's Filters are 130mm diameter and have a 40mm hole in the centre, so it is easy to cut your own.

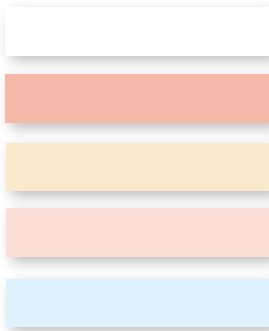
A filter holder is included with NEO. This simply rotates into a locking position of the front cover the NEO light. You will find that the filter holder will be tighter one way round from the other, this is to allow for multiple filters to be used together (i.e. Diffuser plus Colour FX), so position the filter holder whichever way best suits your use, to accommodate your filter setup.

NEO ships with a standard filter pack consisting of :-

- 216 Full Diffuser
- 250 Half Diffuser
- 184 'Cosmetic Peach'  
*(Cosmetic diffuser for softer skin tones)*
- 279 1/8th Magenta (or Minus Green)

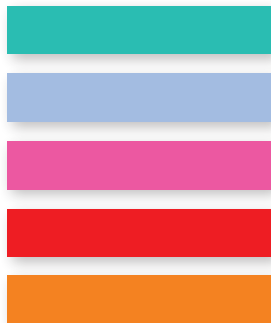


There is an optional add on 'Colour Filter Pack' which is highly recommended for use in conjunction with CineSFX™ mode, consisting of 10 Colour FX Filters, the first five (255, 791, 103, 162, 061) have been recommended by Visual FX Veteran and DOP Stefan Lange:-



- 255 'Hollywood Frost'  
*(Soft gentle Diffuser with minimal light loss)*
- 791 'Moroccan Frost'  
*(warm Cosmetic Diffuser for darker skin tones)*
- 103 Straw  
*(Light sunshine FX, or subtle Fill/Hair Light FX)*
- 162 'Bastard Amber'  
*(warm very popular amber filter.eg sunshine)*
- 061 'Mist Blue'  
*(great for moonlight FX)*





The optional 'Colour Filter Pack' also includes the following five popular colour FX filters :-

- 116 'Medium Blue Green'  
*(Great for simulating Fluorescent, or a TV glow)*
- 712 'Bedford Blue'  
*(Excellent blonde hair light, or "Police" light SFX)*
- 128 'Bright Pink'  
*(Excellent as a hair light for Blonde/ Brunette)*
- 182 'Light Red'  
*(Excellent as a hair light for Brunette)*
- 777 'Rust' rich warm burgundy red  
*(Recommended for use with 'Fire' CineSFX)*

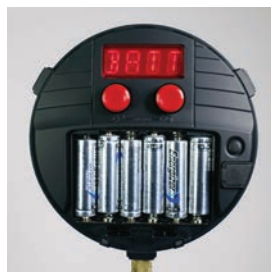


## MOUNTING

NEO has 3 tripod mounting (1/4"-20) standard mounting sockets, positioned at 120 degree intervals around its circumference. These are used to attach accessories like the barn doors and to mount the light. If you are mounting NEO using a magic arm, then you will be able to select a mounting hole that will keep the display and controls oriented the right way up.



There is a shoe adapter included with NEO. Simply attach this to one of the mounting holes and then you can mount NEO directly to the accessory shoe on your camera. NEO is compatible with all the Rotolight RL48 mounting accessories (foam handle, magic arm and clamp kits, 360 swivel adapter, sony shoe adapter, 1/4"-20 spigots, etc) and NEO can be mounted directly onto standard tripods or lighting stands.



## BATTERIES

Neo will operate from a DC voltage of 6 volts up to 18 volts. Best performance is with high performance lithium AA batteries, or high performance rechargeable AA batteries but you can also use professional alkaline AA. Recommended batteries:

- Energizer L9 Lithium AA *(lasts approx. 3hrs 40minutes at 100%)*
- Panasonic 'Eneloop' Pro (Black) rechargeable Batteries *(2450mAh capacity) (lasts approx. 3hrs 30minutes at 100%)*
- Duracell 'Procell' Alkaline AA *(lasts approx. 1hr at 100%)*

**WARNING : Do NOT use 3.7v Lithium Rechargeable AA in NEO, they will cause serious damage to your NEO and void the manufacturer's warrantee. Take care to use recommended AA batteries in your NEO. If the batteries you are using get hot then use the mains adapter instead.**

### Manufacturer's Limited Warrantee

Rotolight Ltd will extend its customers a Limited Manufacturer's Product Warranty of 1 Year on Manufacturer's Products from their date of purchase. This warranty shall not include General 'wear and tear', and shall be invalidated by tampering with, dropping or damaging the product or misuse. The Manufacturer's Products warranty will specifically not include the tearing or damage to filter Gels, unless immediately reported upon delivery, water damage to the unit, battery acid damage to the unit, stress fractures to the unit, filter holder or battery mount (unless reported on delivery), or disconnection of wires (unless reported on delivery). Customer will be solely liable for any and all shipping costs, duties and import taxes or any components or units returned for service/repair. This warranty is subject to the manufacturer standard terms and conditions available on request. This product is made for professional use.

### Limitation of Liability

The liability of the Manufacturer or Distributor, if any, for damages for any claim of any kind whatsoever with regard to any order placed for the Manufacturers products, regardless of the delivery or non-delivery of the Products, or with respect to the Products covered thereby, shall not (except in respect of liability for death or personal injury caused by Manufacturers or Distributor's negligence or in the case of fraud) be greater than the actual purchase price of the Products with respect to which such claim is made. Under no circumstances shall the Manufacturer or Distributor be liable for injury or harm caused by product misuse or compensation, reimbursement, or damages on account of the loss of present or prospective profits, expenditures, investments, or commitments, whether made in the establishment, development, or maintenance of business reputation or goodwill or for any other reason whatsoever.

### NEO OPTIONAL ACCESSORIES

- 1) NEO Barn Doors (*RL-NEO-BD*)
- 2) NEO Add on SFX Colour Filter Pack (*RL-NEO-CFP*)
- 3) 10" Articulating Arm & Clamp Kit (*RL-ARM-10-KIT*)
- 4) Rotolight Luxury Foam Handle (*RL-GRIP-14*)
- 5) Portabrace RainCover for NEO (*RS-RTNEO*)
- 6) Chimera Mini Softbox for NEO (*RL-NEO-CHIMERA*)
- 7) Rotolight NEO Hard Flight Case (*RL-NEO-FC*)
- 8) Rotolight Compact Lighting Stand (*RL-COMPACT-LS*)
- 9) Rotolight 360 Pro Swivel adapter (*RL48-360-PRO*)
- 10) D-Tap to DC adapter Cable
- 11) CAR to DC Adapter Cable
- 12) Rotolight DC Extension Cable
- 13) Rotolight NEO 3 Light Kit (*RL-NEO-KIT*)



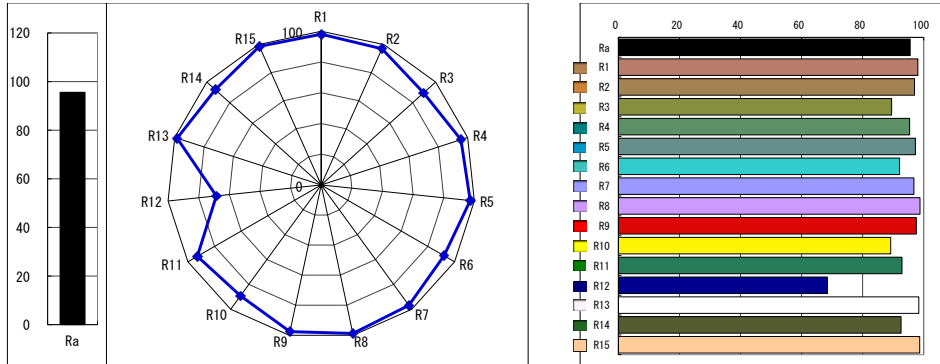


Photography by Jason Lanier  
Lighting by NEO  
Photography by Stefan Lange





## NEO Polar Pattern and CRI Chart



## NEO Technical Specifications

ROTOLIGHT NEO	
BEAM ANGLE	50 Degree
TLCI (Television Lighting Consistency Index)	91 - Ideally suited for professional television use - "errors are so small a colorist would not consider correcting them"
OVERALL CRI (Ra) SKINTONE CRI (R15)	CRI => 95 (Skintone R15, CRI=99)
POWER CONSUMPTION @100% OUTPUT	9 Watts at 5600K @100% Output 15 V DC
TUNGSTEN BULB EQUIVALENT	707 watts
CONTROL	Local, with Dynamic Drift Compensation and Thermal Monitoring
WEIGHT	354g (body only) 504g inc 6xAA
DIMENSIONS	Diameter 145mm x depth 50mm
MOUNTING	Integral 1/4"- 20 tripod mount, with Hot Shoe Adapter
PEAK OUTPUT	1077Lux at 3ft (measured at midpoint of 4306 Lux)
LUMINOUS FLUX	530 Lumens
COLOUR RANGE	3150K-6300K
INCLUDED FILTERS	216 - Full Diffuser, 250 - Half Diffuser 184 - Cosmetic peach Skin Tone 279 - 1/8 Magenta



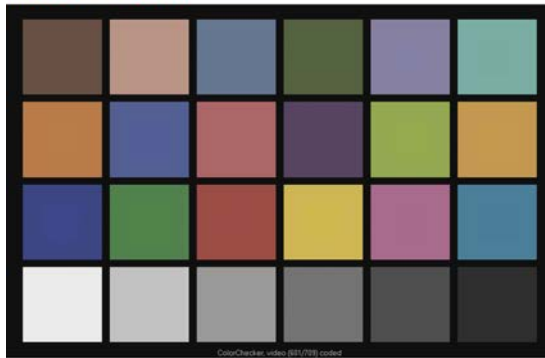


# NEO Television Lighting Consistency Test (TLCI)

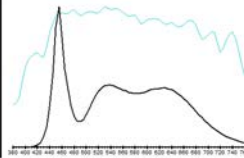
Rotolight Neo (5600): CCT = D5478 ( -2.1 )

TLCI-2012 : 91 (D5478)

EBU : TLCI-2012  
Alan Roberts - Oc



Sector	Lightness	Chroma	Hue
R	0	0	0
R/Y	0	0	-
Y	0	-	-
Y/G	0	-	0
G	0	0	0
G/C	0	0	+
C	+	0	0
C/B	+	0	...
B	0	-	-
B/M	0	-	0
M	0	0	0
M/R	0	0	0



# NEO Photometrics Chart

Fixture	LED Angle	3 ft. / 0.9m		6 ft. / 1.8m		9 ft. / 2.7m	
NEO (at Mid Point 4300k)	50°	100 fc	1077 lx	25 fc	270 lx	11 fc	120 lx
NEO (at Daylight 5600k)	50°	66 fc	706 lx	16 fc	177 lx	7 fc	78 lx
NEO (at Tungsten 3200k)	50°	56 fc	606 lx	14 fc	152 lx	6 fc	68 lx

## CONTACT INFO :-

Rotolight, Pinewood Studios, Pinewood Road, Iver Heath, SL0 0NH, UK

Email: sales@rotolight.com Telephone: +44 (0)1753 422 750

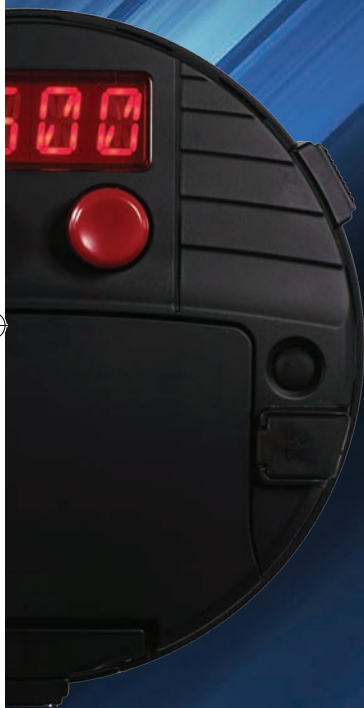
Web: www.rotolight.com

Made at Pinewood Studios





# NEO



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