

Test
Luminous flux (inc partial), beam angle, intensity distribution, colour
Luminous flux, beam angle, intensity distribution, colour
peak intensity
Luminous flux, colour
Luminous flux, colour
Luminous flux, CCT, x,y
calibrations
calibrations
all
all
fluorescent lamp tests
calibrations
all
endurance
Ingress protection

Excludes:

- Land & building
- Utility costs (electricity)
- Management staff
- Equipment upgrades

- Repair & maintenance
- External training of staff

Note: major test equipment items vary significantly between manufacturers.

Recommended building arrangements:

Reliable power supply to the building

Ease of access for clients (drop off and collection of test items)

- Laboratory construction: (industrial) Building within a building for environment
- Painting of wall, floor and ceiling surfaces a matt black colour;
- Construction of solid, even floor; no local vibration from heavy machinery
- Construction of room includes stray light baffles and curtains if necessary;
- Dust-proofing and air conditioning.
  
- The entire room should be light-tight and dust-proof.
- An air lock is preferable; however a partitioned area around the entrance wh
- The room needs to be maintained at 25 degrees Celsius and preferably arou
- The mains electrical supply for the entire system should be provided through very least through a voltage stabiliser, and should include an isolation trans

<b>Staff</b>	<b>Number</b>
Technical Manager	1
Technicians	2
Office/Administrative Assistant	1

Traits/qualities:	patient, method
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<b>Items</b>	<b>Company</b>
<b>Initial Setup costs</b>	
Far field goniophotometer	\$ 250,000.00
Near field goniophotometer	\$ 25,000.00
Illuminance meter	\$ 5,000.00
Integrating sphere 2.0m (spectral)	\$ 30,000.00
Spectroradiometer	
Sphere Photometer	
Spectral radiaint reference lamp	
Installation and training with equip	
Luminance meter & Tile	\$ 10,000.00
Power supplies	\$ 30,000.00
Power analyser	
Reference ballasts (LF and HF)	
Optical bench & accessories	
Lifetime/Ageing rack	\$ 5,000.00
Environment (temperature & humidity) chamber	\$ 70,000.00
Salt chamber	\$ 60,000.00
Basic mechanical/electrical workshop (local cost)	
2 staff for 6 months setup (local salaries)	
External Calibrations	\$ 10,000.00
Accreditation registration (National AB cost)	\$ 5,000.00
<b>Total</b>	<b>\$500,000.00</b>
<b>Annual Maintaining of Accreditation Costs</b>	
Accreditation registration	\$ 5,000.00
External Calibrations	\$ 10,000.00
Internal calibrations etc: 2 staff @ 10% of time	
<b>Total</b>	<b>\$ 15,000.00</b>

nt control

ere visitors can replace their shoes with slippers is acceptable.  
nd 50-70% humidity.

an uninterruptible power supply (UPS) system, or at the  
former and line filter.

**Qualifications**

scientist/engineer
electrical certificate
administrative skills, knowledge of quality assurance processes

cal, process driven, enquiring		
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<b>Lisun</b>	<b>Photometric Sol</b>	<b>Select</b>	<b>total</b>
			\$ -
			\$ -
			\$ -
			\$ -
\$ 1,680.00	\$ 33,962.40		\$ -
\$ 4,648.00	\$ 8,928.00		\$ -
	\$ 5,709.60		\$ -
\$ 240.00	\$ 1,116.00		\$ -
	\$ 8,215.20		\$ -
			\$ -
\$ 2,490.00	\$ 4,564.80		\$ -
\$ 495.00	\$ 3,463.20		\$ -
\$ 4,230.00			\$ -
	\$ 67,795.20		\$ -
			\$ -
\$ 12,500.00			\$ -
			\$ -
			\$ -
\$ 10,000.00	\$ 10,000.00		\$ -
\$ 5,000.00	\$ 5,000.00		\$ -
<b>\$ 41,283.00</b>	<b>\$ 148,754.40</b>		<b>\$ -</b>
			\$ -
\$ 5,000.00	\$ 5,000.00		\$ -
\$ 10,000.00	\$ 10,000.00		\$ -
			\$ -
<b>\$ 15,000.00</b>	<b>\$ 15,000.00</b>		<b>\$ -</b>



<b>INCOME</b>		
Government funding		
Federal		
Regional	no of regions	3
	funding support per region	\$25,000.00
Registrations		
MEPS		
	no of registrations	2000
	fee	\$50.00
Voluntary		
	no of registrations	250
	fee	\$25.00
HEPS		
	no of registrations	250
	fee	\$100.00
RLTCs		
	Registration assistance	
	Seminars/workshops	
	Seminar average no of attendees	
Penalties		
	Fine unit	\$1,000.00
	est rate of failure from testing	50%
	No of fines	75
Testing income (RLTCs)		
<b>TOTAL INCOME</b>		
<b>EXPENSES</b>		
<b>Registration Database</b>		
Establishment & maintenance		
Administation/operations		
	No of staff	4
	Salary (per month)	\$1,750.00
<b>Regional Lighting Technology Centre</b>		
staffing	No of RLTCs	3
	No of staff	2
	Salary (per month)	\$1,750.00
	subtotal per LTC (annual)	\$42,000.00

<b>Verification testing</b>		
<b>Federal Labs</b>		
	Price per lamp sample	\$250.00
	est % of lamps referred from RLTCs	30%
	No of models	150
	No of samples per model	10
<b>Regional LTCs</b>		
	Test price per lamp sample	\$75.00
	est % of models to check from registrations	20%
	No of models	500
	No of samples per model	3
Lamp purchases	average price per lamp & shipping	\$5.00
	no of lamps	3000
<b>Enforcement action</b>		
	legal expenses	\$50,000.00
<b>TOTAL EXPENSES</b>		
<b>SURPLUS (LOSS)</b>		



Entire Program	Admin centre	RLTCs
\$500,000.00	\$500,000.00	
\$75,000.00		\$75,000.00
\$100,000.00	\$100,000.00	
\$6,250.00	\$6,250.00	
\$25,000.00	\$25,000.00	
\$0.00		\$0.00
\$0.00		\$0.00
\$75,000.00	\$75,000.00	
\$112,500.00		\$112,500.00
<b>\$893,750.00</b>	<b>\$706,250.00</b>	<b>\$187,500.00</b>
\$15,000.00	\$15,000.00	
\$84,000.00	\$84,000.00	
\$126,000.00		\$126,000.00

\$375,000.00	\$375,000.00	
\$112,500.00	\$112,500.00	
\$15,000.00		\$15,000.00
\$50,000.00	\$50,000.00	
<b>\$777,500.00</b>	<b>\$636,500.00</b>	<b>\$141,000.00</b>
<b>\$116,250.00</b>	<b>\$69,750.00</b>	<b>\$46,500.00</b>